Public Value in Public Sector Infrastructure Procurement

By

Warren J. Staples
B.Sc. (Psychology/Business)
M.Phil. (Management)

School of Management
College of Business
RMIT University
April 2010

A thesis submitted in fulfillment of the requirements for the degree of Doctor of Philosophy from the Royal Melbourne Institute of Technology
DECLARATION

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; and, any editorial work, paid or unpaid, carried out by a third party is acknowledged.

Signed:

........................................
Warren James Staples

........................................
Date
ACKNOWLEDGEMENTS

“Invention my dear friends is 93% perspiration, 6% electricity, 4% evaporation, and 2% butterscotch ripple.” - Willy Wonka

There are a lot of people I would like to acknowledge and thank for their support over the course of this study.

In particular, I thank Professor John F. Dalrymple who has been my senior supervisor. John has made a lifelong commitment to academic standards, he demonstrates this in his commitment to his research students. I have been very fortunate to have had the privilege to work with John, and am extremely grateful for this opportunity and everything that he has contributed to this research. I thank also Professor Kosmas Smyrnios, who has been my second supervisor during the latter stages of my candidature. Kos’ unwavering attention to detail, encouragement, ability to add a fresh perspective and energy has been greatly appreciated.

I would also like to thank Associate Professor Brian Delahaye for his informal mentoring, and for providing a sage sounding board, grounded firmly in reality. I would also like to thank Professor Gael McDonald for her similarly pragmatic and action oriented perspective. I would like to acknowledge former colleagues from the now defunct Centre for Management Quality Research: Dr Peter Bryar, Dr Lionel Boxer, Dr Gitachari ‘Sri’ Srikanthan, Dr Juan Caldera, Dr Sunny Ramsurrun, Dr Fang Zhao and Dr Vinay Kissoon for their ongoing interest in my achievements as well as for their collegiality and friendship.

For two and a half years during my candidature I was the Doctoral Student Representative on the Australia and New Zealand Academy of Management (ANZAM) Executive. The opportunity that it presented to interact with, and learn from members of the Executive was an experience from which I benefited enormously and I am sincerely grateful to ANZAM for the professional experiences it afforded me.

I would like to thank my former PhD office colleagues: Gianpietro ‘Peter’ Dapiran, Roberto Poles, Anuja Cabraal, Trish Eisele, John Leavesley, Sully Taulealea, Fahri Benli and Heather Davis who were brilliant company and from whom I learnt a lot. Other PhD friends whose collegiality and support I would like to place on record are: Dr Mai Phan, Dr Chris Law, Dr Michael Gangemi, Dr Browyn Coate, Dr Tristan Masters, Jacqui Larkin, Kate Hughes, Hilary
Haugstetter, and Alastair Rylatt. The indefatigable Judy Burnside-Lawry deserves particular mention, she has been a gem of a PhD buddy who rarely fails to make me laugh.

I am also grateful for the support of my former colleagues in the Business Research Office: Professor Derek Walker, Professor Supriya Singh, Associate Professor Roslyn Russell, Kristina Tsoulis-Reay, Sandra Hart, Kalpana Lalji, Ember Parkin and Prue Lamont.

I would like to acknowledge and thank the School of Management at RMIT University for its support of my research throughout the course of my candidature. In particular: Associate Professor Sandra Martin and Professor George Cairns for supporting travel and transcription; Associate Professor Rosalie Holian for her supervision during my first year of candidature; and Dr Keith Toh and Michael Swanton for their considerable computer expertise.

I would also like to thank the 37 participants whose interviews provided the analytical material of this study. I am extremely grateful for the time they made available in their hectic schedules to enable me to learn from their considerable experience. In particular I would like to thank John Collin and Mike Swainston for acting as sounding boards.

I would also like to acknowledge the initial support from the former Cooperative Research Centre for Construction Innovation for their role in funding the Feasibility Study Linking Best Value Procurement Assessment to Outcome Performance Indicators. I would also like to thank my father Keith Staples for his expert editorial assistance.

Last, but certainly by no means least, I would like to thank my family, parents, and particularly my wife Tamlin. During the course of this study we have somehow found the time to get married, buy a house, and start our own family, having welcomed the arrival of our beautiful daughter Abigael Kate Staples in late 2009. I haven’t yet found the means or occasion to fully express how grateful I am to Tamlin for her support, but in the near future we’ll take a holiday and I’ll find an opportunity to express my profound gratitude and appreciation.

Warren Staples
# TABLE OF CONTENTS

**DECLARATION** .................................................................................................................................................. II

**ACKNOWLEDGEMENTS** ...................................................................................................................................... III

**TABLE OF CONTENTS** ....................................................................................................................................... V

**LIST OF ACRONYMS USED** ............................................................................................................................ X

**ABSTRACT** .......................................................................................................................................................... XII

**CHAPTER 1 – INTRODUCTION** ........................................................................................................................... 1

1.1 INTRODUCTION TO THE RESEARCH ................................................................................................. 1
1.2 RESEARCH OBJECTIVES ....................................................................................................................... 3
1.3 RATIONALE FOR THE RESEARCH ...................................................................................................... 3
1.4 THE RESEARCH QUESTIONS .................................................................................................................. 6
1.5 RESEARCH METHODS .............................................................................................................................. 7
1.6 STRUCTURE OF THE THESIS ................................................................................................................ 7

**CHAPTER 2 – LITERATURE** ............................................................................................................................ 10

2.1 INTRODUCTION ......................................................................................................................................... 10
2.2 PUBLIC SECTOR MANAGEMENT ............................................................................................................. 11
  2.2.1 Purposes of the Public Sector ........................................................................................................... 11
  2.2.2 Managing in the public sector and the business enterprise ......................................................... 13
  2.2.3 Challenges in Public Sector Management ....................................................................................... 15
2.3 THE DEVELOPMENT OF PUBLIC SECTOR MANAGEMENT THEORY ........................................... 17
  2.3.1 Public Administration ....................................................................................................................... 18
  2.3.2 New Public Management ................................................................................................................ 19
  2.3.3 Public Value Management .............................................................................................................. 22
    2.3.3.1 Strategic Triangle ......................................................................................................................... 24
    2.3.3.2 Authorising Environment ............................................................................................................. 25
    2.3.3.3 Strategy ...................................................................................................................................... 26
    2.3.3.4 Innovation ................................................................................................................................. 28
    2.3.3.5 Public Value Debate .................................................................................................................. 29
  2.3.4 Conclusions - Comparing and Contrasting the Three Paradigms ................................................ 33
    2.3.4.1 Procurement ............................................................................................................................... 37
2.4 JURISDICTIONAL APPROACHES TO PUBLIC VALUE ..................................................................... 37
  2.4.1 UK ..................................................................................................................................................... 39
  2.4.2 Scotland .......................................................................................................................................... 40
  2.4.3 Victoria, Australia ............................................................................................................................ 42
  2.4.4 Best Value Conclusions ................................................................................................................... 43
2.5 PUBLIC VALUE AND PROCUREMENT ............................................................................................... 44
2.6 POLICY AND DECISION MAKING ........................................................................................................ 45
  2.6.1 Policy by-products .............................................................................................................................. 45
2.7 THE PROCUREMENT OF GOODS AND SERVICES IN THE PUBLIC SECTOR ................................... 47
  2.7.1 Differences between Public and Private Procurement .................................................................... 48
2.8 PROCUREMENT OF CONSTRUCTION BY PUBLIC SECTOR CLIENTS ........................................ 49
  2.8.1 The Nature of Public Sector Construction Projects ...................................................................... 50
    2.8.1.1 The Procurement Process ........................................................................................................ 50
2.9 CONSTRUCTION PROJECT PROCUREMENT ...................................................................................... 51
  2.9.1 Contract Types .................................................................................................................................. 53
    2.9.1.1 Selection of Procurement Approach .......................................................................................... 55
  2.9.2 Selecting Contractors and Consultants .......................................................................................... 55
  2.9.3 Purchasing Strategy .......................................................................................................................... 57
    2.9.3.1 Organisational Client Characteristics ....................................................................................... 58
    2.9.3.2 Individual characteristics .......................................................................................................... 59
2.10 TRANSACTION COST ECONOMICS ....................................................................................................... 60
  2.10.1 TCE and New Public Management ............................................................................................... 62
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.10.2</td>
<td>The Nature of Transaction Costs in Construction</td>
<td>64</td>
</tr>
<tr>
<td>2.11</td>
<td>SUPPLY MANAGEMENT</td>
<td>65</td>
</tr>
<tr>
<td>2.11.1</td>
<td>The Construction Supply Chain</td>
<td>66</td>
</tr>
<tr>
<td>2.11.2</td>
<td>Selecting Subcontractors</td>
<td>68</td>
</tr>
<tr>
<td>2.11.3</td>
<td>Supplier Development</td>
<td>68</td>
</tr>
<tr>
<td>2.12</td>
<td>CONCLUSIONS</td>
<td>69</td>
</tr>
<tr>
<td>2.12.1</td>
<td>Procurement of Infrastructure</td>
<td>71</td>
</tr>
<tr>
<td>2.12.2</td>
<td>Value-for-money</td>
<td>72</td>
</tr>
<tr>
<td>2.12.3</td>
<td>Policy by-products</td>
<td>73</td>
</tr>
<tr>
<td>2.12.4</td>
<td>Supply Chain Management</td>
<td>74</td>
</tr>
<tr>
<td>2.12.5</td>
<td>Tendering Costs</td>
<td>75</td>
</tr>
<tr>
<td><strong>CHAPTER 3 – THEORETICAL FOUNDATION AND RESEARCH METHODS</strong></td>
<td></td>
<td>76</td>
</tr>
<tr>
<td>3.1</td>
<td>INTRODUCTION</td>
<td>76</td>
</tr>
<tr>
<td>3.2</td>
<td>THEORETICAL FRAMEWORK</td>
<td>78</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Definition of value-for-money</td>
<td>78</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Policy Objectives</td>
<td>79</td>
</tr>
<tr>
<td>3.2.3</td>
<td>Supply Chain Management</td>
<td>80</td>
</tr>
<tr>
<td>3.2.4</td>
<td>Tendering Costs - Transaction Cost Economics</td>
<td>80</td>
</tr>
<tr>
<td>3.3</td>
<td>PARADIGM</td>
<td>83</td>
</tr>
<tr>
<td>3.3.1</td>
<td>Justification</td>
<td>83</td>
</tr>
<tr>
<td>3.4</td>
<td>METHODOLOGY</td>
<td>84</td>
</tr>
<tr>
<td>3.4.1</td>
<td>Justification - Multiple Case Studies</td>
<td>86</td>
</tr>
<tr>
<td>3.5</td>
<td>DATA COLLECTION</td>
<td>87</td>
</tr>
<tr>
<td>3.5.1</td>
<td>Telephone based semi-structured interviews</td>
<td>88</td>
</tr>
<tr>
<td>3.5.2</td>
<td>Semi-structured interviews</td>
<td>89</td>
</tr>
<tr>
<td>3.5.2.1</td>
<td>Respondent Recruitment</td>
<td>91</td>
</tr>
<tr>
<td>3.5.3</td>
<td>Secondary Data</td>
<td>92</td>
</tr>
<tr>
<td>3.6</td>
<td>UNIT OF ANALYSIS</td>
<td>93</td>
</tr>
<tr>
<td>3.6.1</td>
<td>Trustworthiness and Triangulation</td>
<td>94</td>
</tr>
<tr>
<td>3.6.2</td>
<td>Ethics</td>
<td>95</td>
</tr>
<tr>
<td>3.6.3</td>
<td>Analysis of Data</td>
<td>96</td>
</tr>
<tr>
<td>3.7</td>
<td>CONCLUSIONS</td>
<td>98</td>
</tr>
<tr>
<td><strong>CHAPTER 4 - WITHIN CASE RESULTS - CONSTRUCTION</strong></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>4.1</td>
<td>INTRODUCTION</td>
<td>100</td>
</tr>
<tr>
<td>4.2</td>
<td>CASE A (C)</td>
<td>100</td>
</tr>
<tr>
<td>4.2.1</td>
<td>Demographics of Interviewees</td>
<td>100</td>
</tr>
<tr>
<td>4.2.2</td>
<td>Procurement Operations</td>
<td>101</td>
</tr>
<tr>
<td>4.2.2.1</td>
<td>Procurement Approach</td>
<td>102</td>
</tr>
<tr>
<td>4.2.3</td>
<td>Summary</td>
<td>103</td>
</tr>
<tr>
<td>4.2.4</td>
<td>Defining value-for-money</td>
<td>106</td>
</tr>
<tr>
<td>4.2.4.1</td>
<td>Summary</td>
<td>109</td>
</tr>
<tr>
<td>4.2.5</td>
<td>Selection Criteria</td>
<td>109</td>
</tr>
<tr>
<td>4.2.5.1</td>
<td>Summary</td>
<td>111</td>
</tr>
<tr>
<td>4.2.6</td>
<td>Government Priorities</td>
<td>112</td>
</tr>
<tr>
<td>4.2.6.1</td>
<td>Summary</td>
<td>114</td>
</tr>
<tr>
<td>4.2.7</td>
<td>Supply Chain Management</td>
<td>115</td>
</tr>
<tr>
<td>4.2.7.1</td>
<td>Summary</td>
<td>118</td>
</tr>
<tr>
<td>4.3</td>
<td>CASE B (C)</td>
<td>120</td>
</tr>
<tr>
<td>4.3.1</td>
<td>Demographics of Interviewees</td>
<td>120</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Procurement Operations</td>
<td>120</td>
</tr>
<tr>
<td>4.3.3</td>
<td>Defining value-for-money</td>
<td>122</td>
</tr>
<tr>
<td>4.3.4</td>
<td>Selection Criteria</td>
<td>124</td>
</tr>
<tr>
<td>4.3.5</td>
<td>Government Priorities</td>
<td>125</td>
</tr>
<tr>
<td>4.3.6</td>
<td>Supply Chain Management</td>
<td>126</td>
</tr>
<tr>
<td>4.4</td>
<td>CASE C (C)</td>
<td>128</td>
</tr>
</tbody>
</table>
5.5 CASE D (R) .......................................................................................................................... 210
  5.5.1 Demographics of Interviewees ...................................................................................... 210
  5.5.2 Procurement Operations ............................................................................................... 210
  5.5.3 Defining Value-for-Money ........................................................................................... 213
  5.5.4 Selection Criteria ......................................................................................................... 215
  5.5.5 Government Priorities .................................................................................................. 218
  5.5.6 Supply Chain Management ......................................................................................... 219

5.6 CASE E (R) .......................................................................................................................... 222
  5.6.1 Demographics of Interviewees ...................................................................................... 222
  5.6.2 Procurement Operations ............................................................................................... 222
  5.6.3 Defining Value-for-Money ........................................................................................... 225
  5.6.4 Selection Criteria ......................................................................................................... 226
  5.6.5 Government Priorities .................................................................................................. 228
  5.6.6 Supply Chain Management ......................................................................................... 229

5.7 CONCLUSIONS – CROSS CASE ANALYSIS ROADS ......................................................... 232
  5.7.1 Infrastructure Procurement ......................................................................................... 232
  5.7.2 Defining Value-for-Money ........................................................................................... 235
  5.7.3 Policy Objectives ......................................................................................................... 237
    5.7.3.1 Selection Criteria .................................................................................................... 237
    5.7.3.2 Government Priorities .......................................................................................... 239
  5.7.4 Supply Chain Management ......................................................................................... 240
  5.7.5 Tendering Costs .......................................................................................................... 243
  5.7.6 Conclusions ................................................................................................................ 244

CHAPTER 6 – CROSS CASE ANALYSIS CONSTRUCTION AND ROADS.......................... 246
  6.1 INTRODUCTION ................................................................................................................ 246
  6.2 INFRASTRUCTURE PROCUREMENT ........................................................................... 246
  6.3 DEFINING VALUE-FOR-MONEY .................................................................................... 248
  6.4 POLICY OBJECTIVES ..................................................................................................... 250
    6.4.1 Selection Criteria ....................................................................................................... 250
    6.4.2 Government Priorities ............................................................................................. 250
  6.5 SUPPLY CHAIN MANAGEMENT ..................................................................................... 251
  6.6 TENDERING COSTS ......................................................................................................... 252
  6.7 CONCLUSIONS ................................................................................................................ 253

CHAPTER 7 - FINDINGS .............................................................................................................. 259
  7.1 INTRODUCTION ................................................................................................................ 259
  7.2 RESEARCH QUESTION ONE: HOW DO AUSTRALIAN STATE GOVERNMENTS
      PRODUCE INFRASTRUCTURE PROJECTS? ................................................................. 259
  7.3 RESEARCH QUESTION TWO: WHAT DOES VALUE-FOR-MONEY MEAN TO
      AUSTRALIAN STATE GOVERNMENTS WHEN PROCURING INFRASTRUCTURE PROJECTS? 261
    7.3.1 Research Question Two (a): To what extent is Value-for-Money an objective for
        Australian State Governments when procuring infrastructure projects? ...................... 262
  7.4 RESEARCH QUESTION THREE: WHAT SELECTION CRITERIA ARE USED BY
      AUSTRALIAN STATE GOVERNMENTS WHEN SELECTING BOTH BUILDING CONSULTANTS AND
      CONTRACTORS? ........................................................................................................... 262
    7.4.1 Research Question Three (a): Are non-price criteria used? ..................................... 263
  7.5 RESEARCH QUESTION FOUR: HOW IS INFRASTRUCTURE PROCUREMENT LINKED TO
      AUSTRALIAN STATE GOVERNMENT PRIORITIES? .................................................. 264
  7.6 RESEARCH QUESTION FIVE: HOW IS SUPPLY CHAIN MANAGEMENT UNDERTAKEN
      BY AUSTRALIAN STATE GOVERNMENTS WHEN PROCURING INFRASTRUCTURE PROJECTS? 265
    7.6.1 Research Question Five (a): How are lead contractors and sub-contractors selected? 266
    7.6.2 Research Question Five (b): How is performance feedback given to lead contractors and
        sub-contractors? ............................................................................................................ 267
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS</td>
<td>Australian Bureau of Statistics</td>
</tr>
<tr>
<td>ACT</td>
<td>Australian Capital Territory</td>
</tr>
<tr>
<td>ANAO</td>
<td>Australian National Audit Office</td>
</tr>
<tr>
<td>APCC</td>
<td>Australian Procurement and Construction Council</td>
</tr>
<tr>
<td>BOO</td>
<td>Build Operate Own</td>
</tr>
<tr>
<td>BOOT</td>
<td>Build Operate Own Transfer</td>
</tr>
<tr>
<td>BV</td>
<td>Best Value</td>
</tr>
<tr>
<td>(C)</td>
<td>Construction Case Study</td>
</tr>
<tr>
<td>CAA</td>
<td>Comprehensive Area Assessment</td>
</tr>
<tr>
<td>CTC</td>
<td>Competitive Tendering and Contracting</td>
</tr>
<tr>
<td>CCT</td>
<td>Compulsory Competitive Tendering</td>
</tr>
<tr>
<td>CM</td>
<td>Construction Management</td>
</tr>
<tr>
<td>CPA</td>
<td>Comprehensive Performance Assessment</td>
</tr>
<tr>
<td>D&amp;C</td>
<td>Design &amp; Construct</td>
</tr>
<tr>
<td>D&amp;C+M</td>
<td>Design, Construct and Maintain</td>
</tr>
<tr>
<td>ECI</td>
<td>Early Contractor Involvement</td>
</tr>
<tr>
<td>EOI</td>
<td>Expression of Interest</td>
</tr>
<tr>
<td>GP</td>
<td>Government Priority</td>
</tr>
<tr>
<td>JIT</td>
<td>Just-in-Time</td>
</tr>
<tr>
<td>KPI</td>
<td>Key Performance Indicator</td>
</tr>
<tr>
<td>LAA</td>
<td>Local Area Agreements</td>
</tr>
<tr>
<td>NPM</td>
<td>New Public Management</td>
</tr>
<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>NT</td>
<td>Northern Territory</td>
</tr>
<tr>
<td>OH&amp;S</td>
<td>Occupational Health and Safety</td>
</tr>
<tr>
<td>PFI</td>
<td>Private Finance Initiative</td>
</tr>
<tr>
<td>PM</td>
<td>Project Management</td>
</tr>
<tr>
<td>PPP</td>
<td>Public Private Partnership</td>
</tr>
<tr>
<td>PSC</td>
<td>Princpal Selection Criteria</td>
</tr>
<tr>
<td>PV</td>
<td>Public Value</td>
</tr>
<tr>
<td>PVM</td>
<td>Public Value Management</td>
</tr>
<tr>
<td>QLD</td>
<td>Queensland</td>
</tr>
<tr>
<td>QS</td>
<td>Quantity Surveyor</td>
</tr>
<tr>
<td>(R)</td>
<td>Roads Case Study</td>
</tr>
<tr>
<td>SA</td>
<td>South Australia</td>
</tr>
<tr>
<td>SCM</td>
<td>Supply Chain Management</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>SME</td>
<td>Small and Medium Enterprise</td>
</tr>
<tr>
<td>TAS</td>
<td>Tasmania</td>
</tr>
<tr>
<td>TCE</td>
<td>Transaction Cost Economics</td>
</tr>
<tr>
<td>TPA</td>
<td>Traditional Public Administration</td>
</tr>
<tr>
<td>VFM</td>
<td>Value-for-Money</td>
</tr>
<tr>
<td>VIC</td>
<td>Victoria</td>
</tr>
<tr>
<td>WA</td>
<td>Western Australia</td>
</tr>
</tbody>
</table>
ABSTRACT

Infrastructure projects are an outcome of an organisation’s strategic management process, and as such, require aligning with the corporate and or business unit’s missions and objectives in order to achieve value-for-money (Kelly, Morledge & Wilkinson 2004). There is a growing comprehension of the importance of procurement in realising value for clients of all types. The public sector invests in physical assets to deliver the goods, services and symbols that society values (Winch 2002). The procurement of a construction project in the form of hospitals, schools and courthouses enables government to deliver services in the areas of health, education and justice. Infrastructure investment in roads and buildings accounts for over $59 Billion in 2009-10 Australian State and Territory Government expenditure (ACT 2009; NSW 2009; NT 2009; SA 2009; QLD 2009; TAS 2009; VIC 2009; WA 2009). As a result of this very considerable investment, the procurement process has the potential to deliver very significant public value payoffs to the community.

The objective of this thesis is to examine the practice of infrastructure procurement in Australian State Governments in order to analyse how strategic the procurement function is. In doing so this thesis examines how Australian State Government agencies procure infrastructure projects and the extent to which they view the procurement process as an opportunity to deliver more than just a physical facility. This research contributes to both the body of knowledge focused on maximising the impact of public sector expenditure and the practice of infrastructure procurement.

Moore’s (1995) ‘Theory of Public Value’ articulates a more proactive and strategic role for public sector managers who seek to discover, define and produce public value, instead of just devising means for achieving mandated purposes. An approach to infrastructure procurement based on lowest cost tendering that focuses on the core business of building a physical facility
but not necessarily creating additional value as a by-product fails this test. So, rather than purchasing infrastructure at the lowest price, a public sector client might decide to spend more to achieve better whole-of-government outcomes. This might involve pursuing regional development or local supplier policies by selecting building contractors who are more capable of engaging local small and medium-sized enterprises (SMEs) as subcontractors or suppliers, and or training apprentices or providing employment for at risk long term unemployed youth.

This thesis presents results drawn from ten case studies of State Government organisations that procure infrastructure: Five cases who procured building infrastructure are noted as (C) throughout the thesis; whilst five cases procured roads infrastructure and are noted as (R) throughout the thesis. Thirty-seven highly experienced project managers operationally responsible for the procurement of infrastructure within these organisations interviews were interviewed. A semi-structured interview featuring a mixture of open-ended and closed-ended questions was designed to explore a range of issues including; how procurement is undertaken, value-for-money (VFM), selection criteria, government priorities, public value, and supply chain management.

The transcribed interviews were coded thematically using provisional codes developed from the research questions (Miles & Huberman 1994, p.58). The qualitative software package NVIVO was then used to help enable inductive coding to further develop the provisional coding structures including the identification of sub-themes and the nature of linkages between themes and sub-themes.

The findings showed that the procurement approaches favoured were risk averse and predominantly lump sum traditional featuring separate contracts with designers and contractors. Value-for-money was viewed as a crucial objective of procurement activities by
project managers. However, the perceptions of value-for-money were relatively restricted, and largely defined in financial terms and focused on the creation of value within client department domains. Non-price criteria are used, particularly for the selection of designers, but less so for contractors, with lowest priced conforming bids from pre-qualified tenderers frequently awarded contracts. Precisely how non-price criteria is an area worthy of considerable further investigation.

There are some instances where standardised non-price criteria are included in contracts to build in some additional benefits into the way projects are procured. However, the focus of procurement is delivering what Graycar (2007) calls core-business, optimising procurement for client departments as opposed to outcomes for government as a whole. The evidence suggests that project managers are not relentlessly pursuing value creation opportunities via the procurement process and hence not acting as entrepreneurially or innovatively as Moore (1995) advocates. The data shows that the focus of procurement is often on reducing transaction costs, but not on maximising the strategic contribution or value yielding potential of procurement. The evidence suggests that Australian State Governments are not delivering the type ‘joined-up’ approach to infrastructure procurement that would create public value across a range of policy domains. There is very little active management of the supply chain, or supplier engagement and development related activities undertaken by Government.
CHAPTER 1 – INTRODUCTION

1.1 INTRODUCTION TO THE RESEARCH

In some jurisdictions, the public sector is serviced by internal ‘direct labour’ organisations who undertake construction projects. However, the public sector worldwide is typically a large purchaser of construction projects. An estimated 40% of the Australian construction market is comprised of public sector projects meaning it has a vital role in leading the development of a more sophisticated and demanding customer base for construction (Brown, Hampson & Brandon 2006; Briscoe, Dainty, Millet & Neale 2004).

One advantage of public sector projects for construction industry participants is the security of payment provided by the public sector clients. The importance of the public sector to construction contractors and consultants places the public sector in a powerful position to influence the formation of construction sector strategy through to sector operations. Governments, through both legislation and procurement activity have, for example, sought to improve occupational health and safety standards in all industry sectors, including the construction industry. Reducing the level and cost of workplace accidents and incidents produces a public good. This research seeks to investigate whether the infrastructure procurement activity of governments have expanded their reach to the achievement in other areas of public good.

The State Governments in Australia no longer physically undertake much construction of infrastructure in-house, nor do they have a great deal of internal design capability, and instead rely on outsourcing to private sector firms who provide both design and construction services. Whilst divesting themselves of the internal capability to design and physically construct infrastructure the States have maintained expertise in project management services in order to
help Government clients procure and deliver construction projects. In the building area, project managers work with client agencies to procure on their behalf. However it is generally the client agencies’ responsibility to ensure the project has funding from Treasury’s and to maintain the asset over the course of its life cycle. However, roads agencies both procure roads for State Governments and maintain the road network in their respective States and Territories.

As outlined in the public management literature, Public Value, as espoused by Moore (1995), is an emerging perspective on managing in the public sector (Bozeman 2002; Kelly, Mulgan & Muers 2002; Smith 2004; Smith, Anderson & Teicher 2004; Stoker 2006; O’Flynn 2007; Rhodes & Wanna 2007; Alford & Hughes 2008; Rhodes & Wanna 2008; Alford 2008; Alford & O’Flynn 2009). Moore (1995) describes the mission of those managing within the public sector as being concerned with the creation of public value, believing it is the reason why the sector exists. In economics, public good is a commonly used term to describe the benefits produced by the public sector. Procurement of infrastructure projects (buildings and roads) by public sector clients is a discipline with considerable complexity both in operationally delivering assets, and strategically, in creating value for diverse sets of stakeholders.

Construction projects, and the subsequent built assets, enable Government departments to provide goods and services that create public value for society (Winch 2002). Winch (2002, p.5) cites examples of this in the public sector as government investing in schools to provide education services and bridges to provide transport services.

The purposes and actions of the public sector transcend direct service provision to embrace broader societal aims (Giddens 1998; Donnelly 1999; Anderson 1989; cited in Aulich & Nutley (2001, p.5)). Hence, assessing return on investment in the public sector is frequently
multifaceted and, consequently, more difficult to quantify. Donnelly (1999) contends that it is as a provider of services that the public sector achieves its goals. The New Public Management paradigms pursuit of private sector management practices appears to have led to the transfer of the prevailing private sector perspective on procurement, focused almost solely on cost, to the public sector. The unique, politically strategic and public value laden nature of procurement decisions in the public sector appear to have been somewhat overlooked.

1.2 RESEARCH OBJECTIVES

This thesis adopts a multi-disciplinary theoretical perspective integrating conceptualisations derived from four research streams; public sector management, construction procurement, transaction cost economics and supply management. The primary purpose of this study was to understand the practice of construction project procurement by project managers on behalf of Australian State Government agencies and to explore the link between procurement and the creation of public value. By interviewing procurement officers from both construction and roads construction organisations in Australian State Governments, it is hoped to gain valuable insight into the way value and value creation are considered, and addressed, during the procurement process. The approaches used by the various state government organisations will provide valuable insight into this important area. The research contributes to the body of knowledge focused on maximising the impact of public sector expenditure and informs the practice of infrastructure procurement by public sector clients.

1.3 RATIONALE FOR THE RESEARCH

Currently infrastructure investment in roads and buildings by Australian State and Territory Governments accounts for over $59 Billion in their respective 2009-10 budgets (see Table 1.1).
Table 1.1: Australian State Government Investments in Infrastructure (2009-10)

- the Government remains committed to delivering its significant capital program by investing - $18.2 billion (QLD 2009)
- the Government will spend a record $8.3 billion on public infrastructure. And over the next four years, we will invest $23.8 billion in capital works (WA 2009)
- infrastructure spend of $11.4 billion over four years (SA 2009)
- over the next four years the Government will invest $62.9 billion in job supporting infrastructure. (NSW 2009)
- $11.5 billion next financial year to fast-track job-creating infrastructure across the state. (VIC 2009)
- Putting the $2 billion infrastructure program into action to support Tasmanian jobs and guide the Tasmanian economy through the Global Financial Crisis (TAS 2009)
- In addition to the $1 billion Building the Future program of investment in the Territory’s infrastructure, a further investment of $274 million is being made through the Governments capital works program. (ACT 2009)
- Total infrastructure payments will be $1.299 billion in 2009-10. (NT 2009)

Project managers working for Australian State Governments have an important role to play in creating public value via overseeing Government investment in infrastructure projects. This study examines whether public value approaches are practiced by public sector managers procuring construction projects. Project managers procuring infrastructure have been largely ignored in the academic literature (Thai & Grimm 2000), despite the fact that they have considerable influence over significant State funds.

Given the significant investment by Australian State Governments, coupled with the fact that infrastructure investments are strategic decisions designed to create benefits for society (Winch 2002), it could be argued that research focusing on improving the understanding and practice of procurement is worthwhile.
Problems facing construction procurement decision makers include the propensity to use lowest price tendering, the adversarial nature of relationships between participants, the limited attention given to value generation, linking the procurement to creating community value and the lack of life cycle costing that considers long term economic and environmental factors. Worldwide, there has been an overwhelming recognition that change is needed in the construction industry (Latham 1994; King 1996; Egan 1998). Both Latham (1994) and Egan (1998) bemoaned the dominant procurement approach of using price based competition for awarding tenders and note that it has led to poor outcomes for clients. Egan (2008) has commented that in the ten years since the Rethinking Construction (1998) report recommendations progress towards improving the construction industry has been weaker than had been hoped.

Using multiple or non-price selection criteria for awarding projects to building consultants and contractors is something that has been a focus of research in construction management, but its application has also been something that the industry is still grappling with (CRC Final Report 2004). Previous research (CRC Final Report 2004; Dalrymple, Boxer & Staples 2006) concluded that there were three important areas worthy of consideration in the pursuit of best value public sector procurement of infrastructure:

- Linking procurement to an organisation’s mission
- Tendering costs
- Construction SME Performance Improvement and Optimisation

The research concluded that to procure value there was a need for both flexibility and an appropriate fit between procurement, the reasons for existence of the organisation and the way that the organisation seeks to deliver its mission. It was also unlikely that optimal value would be obtained in an environment where the client is unaware of the costs of tendering and consequently unaware of the additional costs that they as client are carrying as a consequence
of their espoused tendering processes. In the event that the client is imposing excessive and unnecessary costs on the contractor through the tendering process, then they are adding costs without adding value. Further, the extensive use of the SME construction subcontractors means that if that sector is not operating at optimal performance, then waste is inevitable, and it is unlikely that a client is procuring best value.

1.4 THE RESEARCH QUESTIONS

An extensive review of the multi-disciplinary literature areas of public sector management, construction management, transaction cost economics and supply chain management has led to the formation of the following ten research questions and sub-questions (see Table 1.2).

Table 1.2: Research Questions – Public Value in Public Sector Infrastructure Procurement

<table>
<thead>
<tr>
<th>Research Question One:</th>
<th>How do Australian State Governments procure infrastructure projects?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Question Two:</td>
<td>What does value-for-money mean to Australian State Governments when procuring infrastructure projects?</td>
</tr>
<tr>
<td>Research Question Two (a):</td>
<td>To what extent is value-for-money an objective for Australian State Governments when procuring infrastructure projects?</td>
</tr>
<tr>
<td>Research Question Three:</td>
<td>What selection criteria are used by Australian State Governments when selecting both building consultants and contractors?</td>
</tr>
<tr>
<td>Research Question Three (a):</td>
<td>Are non-price criteria used?</td>
</tr>
<tr>
<td>Research Question Four:</td>
<td>How is infrastructure procurement linked to Australian State Government priorities?</td>
</tr>
<tr>
<td>Research Question Five:</td>
<td>How is Supply Chain Management undertaken by Australian State Governments when procuring infrastructure projects?</td>
</tr>
<tr>
<td>Research Question Five (a):</td>
<td>How are lead contractors and sub-contractors selected?</td>
</tr>
<tr>
<td>Research Question Five (b):</td>
<td>How is performance feedback given to lead contractors and sub-contractors?</td>
</tr>
<tr>
<td>Research Question Five (c):</td>
<td>How does performance affect future contract/project opportunities?</td>
</tr>
</tbody>
</table>
1.5 RESEARCH METHODS

Based upon the nature of the research problem and research questions this research adopts the social constructivist paradigm, employs a qualitative design focused upon exploring the perspective of the project managers procuring projects. This research focuses on the procurement of infrastructure (roads and construction) projects by Australian State Governments. The research explores whether procurement is being utilised strategically, how non-price criteria are used in contractor selection, and how value-for-money (best value) assessments are made in light of government strategies. Thirty-seven project managers were interviewed drawn from ten public sector agencies (five construction and five roads) across five Australian states. Participants were involved in the preparation, evaluation and awarding of construction tenders.

1.6 STRUCTURE OF THE THESIS

Chapter two contains the literature review, which grounds the research in the multi-disciplinary fields of Public Sector Management, Construction Management and Procurement, Supply Chain Management and Transaction Cost Economics. The major trends in Public Sector Management are introduced which covers Traditional Public Administration (TPA), New Public Management (NPM) and the emerging area of Public Value Management (PVM). Construction projects are examined as an outcome of organisations’ strategic planning processes and the approaches used to procure projects are also explored. Contemporary thinking from the field of Construction Project Management and Procurement is analysed in the light of the public sector client procuring infrastructure. The Supply Management subset of Supply Chain Management is presented, whilst Transaction Cost Economics literature provides a lens with which to view the costs associated with tendering on both the supply and client side.
Chapter three introduces the research methodology and the reasons for choosing the social constructivist paradigm and the qualitative case study methodology adopted. It also outlines the approach to data collection and demonstrates the fitness for purpose between the interview approach employed, the research questions and the research context.

Chapter four reports the within case results from the data collected from the five construction works case study organisations and concludes with cross-case analysis of the five construction cases. Chapter five reviews the within case results from the data collected from the five roads agencies and concludes with cross-case analysis of the five roads cases. Chapter six presents the cross-case analysis of both the construction and the roads cases highlighting the major trends and discernible differences. Chapter seven outlines the findings of the research by using the research data collected to provide answers to the research questions. Chapter eight focuses on a theoretical discussion of the findings, outlines the contributions of this research in the form of policy implications and provides some overarching conclusions. The findings show that there is considerable scope for improving the infrastructure procurement of Australian State Governments and that broader public value creation approaches in the form of policy by-products are either not considered or inconsistently pursued. The broader policy implications flowing from the research findings provide valuable commentary that inform the practice of infrastructure procurement and point to areas in which improvement efforts may be directed. These areas include the challenge of developing the next generation of infrastructure procurement managers, rigorously using non-price criteria, using prequalification registers to engage in supplier development and delivering policy by-products as part of standard procurement approaches. Further, chapter eight reflects on the research journey and considers the limitations of the research and outlines some potential future directions for further research. The structure of this thesis is laid out in Figure 1.1.
The literature foundation that underpins this thesis will now be presented.
CHAPTER 2 – LITERATURE

2.1 INTRODUCTION

The purpose of this chapter is to critically review the extant literature affecting the procurement of construction projects by public sector clients. Literature in the area of public sector management, construction management, supply chain management and transaction cost economics have been drawn upon as the foundation for this research. This literature has been chosen to situate the research in the context of managing in the public sector tracing the development of public sector management and presenting the emerging perspective of public value theory. This study draws upon public value and transaction cost economics as key conceptual underpinnings, but as these theories do not present the complete picture, the study also draws on aspects of supply chain management. The literature links the procurement of infrastructure by public sector clients to the delivery of broader government policy objectives. The decision was taken to exclude the literature bodies of strategic management and public policy as well as that covering operational issues of construction project management. The strategy literature was excluded because it is primarily focused on the private sector and public sector strategy is covered in the public value literature. The public policy literature was excluded as it is focused on the political level and this research is focuses on operational issues within the public sector. Whilst acknowledging its political context, infrastructure procurement does not take place until after projects have been authorised by politicians. The construction project management literature has been drawn upon but this has focused entirely on the procurement phase and not on the operational construction of assets. The outcome of the literatures selected is the theoretical framework that has guided both the data collection and analysis components of this research.
Section 2.2 to Section 2.4 critically reviews the literature on public management approaches, the emergence of public value and the jurisdictional interpretations of public value as best value. Section 2.5 establishes the strategic link between public value and procurement, whilst Section 2.6 reviews the literature on policy. Section 2.7 deals with procurement in the public sector and Section 2.8 focuses on the procurement of construction by public sector clients. Section 2.9 presents the literature on construction management including procurement approaches, prequalification and selection criteria. Section 2.10 introduces the literature on transaction cost economics whilst section 2.11 focuses on supply management issues. Section 2.12 presents conclusions, in the form of research questions identified from gaps in the literature bodies of; public value, procurement of infrastructure, policy by-products, supply chain management and tendering costs. This review resulted in the formation of five research questions and provided guidance as to an appropriate research methodology for the study.

2.2 PUBLIC SECTOR MANAGEMENT

2.2.1 Purposes of the Public Sector

There is considerable debate in the literature over the rationale for the existence of the public sector, and the most appropriate role and purpose for government (Pollitt 1993; Aulich & Nutley 2001; Giddens 1998, Donnelly 1999). This debate is also a constant throughout the political process with elections providing the opportunity for citizens to select representatives whose view of government is more in keeping with their own. This means that decision making in the public sector is based on a range of beliefs and values determined by a particular government at a particular time (Aulich & Nutley 2001, p.5). As a result, the appropriate role and scope of government will change from place to place and from time to time (Aulich & Nutley 2001, p.5).
Table 2.1: Reasons for existence, functions and purposes of Government

| Provision of basic economic infrastructure: institutions, rules and arrangements | Provide means for the representation of diverse interests | a builder of community pride |
| Provision of various collective (public) goods and services | A forum for reconciling competing claims of these interests | the community governing itself |
| Resolution and adjustment of group conflicts | Create and protect contexts for policy debate | a promoter of choice |
| Maintenance of competition | Provide public goods for collective security and welfare | the builder of diversity |
| Protection of natural resources | Regulate markets in the public interest | a channel for learning |
| Provision for minimum access by individuals to goods and services of the economy | Foster social peace | an arena for voice and focus |
| Stabilisation of the economy | Promote the active development of human capital in citizens | a basis for citizenship |
| | Sustain an effective system of law | an active political process |
| | Have a directly interventionist economic role | an expression of pluralism |
| | Have a civilising aim | the provider of services |
| | Foster regional and trans-national alliances and pursue global goals | |


Table 2.1 highlights three perspectives on the functions and purposes of the public sector. Donnelly (1999) suggests that the purposes and actions of government transcend direct service provision to embrace broader societal aims. This is a view in keeping with Anderson 1989; cited in Aulich and Nutley (2001, p.5) who focuses on seven functions of government and Giddens (1998, pp.47-48) who proposes eleven broad reasons for the existence of government. Donnelly (1999) presents the purpose of local government as defined by Society of Local Authority Chief Executives and Senior Managers UK (SOLACE). These three perspectives highlight the broad reasons for existence of many public sector organisations as well as the complex and multifaceted nature that characterises the public sector.

Moore (1995) describes the mission of public sector organisations as being to create public value. Economists refer to this as public good. Clearly, Government does not exist to return
profits to shareholders. Friedman (1970) espoused the classical or narrow view of Corporate Social Responsibility (CSR) which considers the primary role of business is making money for its owners. This has been tempered more recently by embracing a broader conceptualisation of value, the consideration of stakeholders (Freeman 2008) and the recognition that there may be environmental and social imperatives (Elkington 1998) which must be taken into account in the pursuit of profit. The Australian Corporations Act 2001 (Cth) (Sections 180-181) outlines directors’ duty to exercise their powers and discharge their duties with the degree of care and diligence, in good faith in the best interests of the corporation and for a proper purpose. Whilst there is considerable subjectivity as to what is a proper purpose of a corporation, there is little doubt that the pursuit of profit remains fundamental to the business enterprise’s reason for existence (Dalrymple, Hilmer, Karney, Edgeman & Geroy 1999).

Moore (1995, p.44) cites two reasons for government intervention 1) market imperfections that means there is a technical problem in the organisation of a market to supply the service 2) there is a critical issue of justice or fairness at stake that must be honoured. Aulich and Nutley (2001, p.5) note that one rationale for public sector action is that markets fail to provide certain socially desirable goods and services, and are imperfect in the provision of other goods and services. Aulich and Nutley (2001, p.6) note the welfare role of government and believe it is now apparent that governments have moved beyond the minimalist view that argues the state should only do what cannot be done by the market.

2.2.2 Managing in the public sector and the business enterprise

There is considerable debate in the literature as to how the practice of management differs in public and private sector organisations (Rainey & Chun 2005; Rainey & Bozeman 2000; Boyne 2002; Boyne, Jenkins & Poole 1999; Perry & Rainey 1988). Rainey and Chun (2005)
note the blurring of the sectors and the fact that many hybrid public-private organisations have come into existence since the introduction of New Public Management.

Relying solely on the public versus private and for-profit versus non-profit distinctions does not capture the full dimensionality of the public-private debate and offers little insight into how management is practiced in both (Perry & Rainey 1988; Rainey & Bozeman 2000; Rainey & Chun 2005). Rainey and Bozeman (2000) conducted a meta-analysis of past research to investigate some of the commonly articulated differences between public and private organisations: goal complexity and goal ambiguity; organisational structure; formalisation of personnel and purchasing processes; and work related attitudes and values.

Governments are held accountable by a wider community of stakeholders with a greater variety of interests than business enterprises (Feldman 2005). Moore (1994) describes these stakeholders as ranging from clients, staff, political representatives, advocates, taxpayers and citizens. Rainey and Bozeman (2000) note the prevalence in the literature of the assertion that public agencies have particularly vague, hard-to-measure, multiple, and conflicting goals. Public organisations have multiple goals, either because they are assigned multiple programs or because enabling legislation contains multiple objectives (Boyne, Meier, O’Tooler Jr & Walker 2005). The multi-objective nature of the public sector (Anderson 1989; Giddens 1998; Donnelly 1999) means that return on investment is considerably more complex to establish as no single indicator can capture all the complexities of public organisational performance in the twenty first century (Boyne et al. 2005). Alford and O’Flynn (2009) state that it is an objective fact that much of the value emanating from government activity is difficult to measure, intangible, jointly consumed, or difficult to attribute effect to cause in its production. The boundaries between the organisations and the external environment are more permeable and there are more rules and constraints (Boyne 2002).
In the private sector, revenue generated from selling products and services is used to measure the value of what an organisation produces (Moore 1994). Without this information the private sector would have greater difficulty measuring performance.

Boyne (2002) lists the internal characteristics of public organisations as: more bureaucracy; more red tape; and lower managerial authority. A fundamental difference between the public and private sectors is that the public sector is held to account via the democratic electoral process (the ballot box). Public organisations are controlled by political forces and not market forces (Dahl & Lindblom 1953; cited in Boyne 2002; Rainey & Chun 2005). The public sector, on which public management depends for authorisation and funding, responds to political influences (Rainey & Chun 2005).

Gray and Jenkins (1995) comment that neither the study nor practice of public administration or management can be divorced from politics, and that the public sector is an instrument of politics in which political values dominate (Caiden 1994; cited in Gray & Jenkins 1995). Feldman (2005) concludes that whilst political decisions will be made that determine how much government to have, and what government should do, the important thing to focus on is the management of effective public organisations to achieve effective use of public resources.

2.2.3 Challenges in Public Sector Management

Feldman (2005) comments that whilst managing in the public sector has significant overlap with managing in the private sector it presents challenges that are integral to the political nature of the public sector. Moore (1995, p.9) notes that there is no challenge in ensuring the survival of the public sector, and the challenge is, instead, to make it efficient, to reduce costs and to adapt to changing political demands or new substantive tasks.
Rainey and Bozeman (2000) find that public and private sector organisations are converging on many issues but differ more strongly on formalisation of personnel procedures, purchasing processes and other centralised administrative procedures. Survey responses from both public and private sector managers on the clarity and measurability of their goals have shown little differences in responses (Rainey & Bozeman 2000). Rainey and Bozeman (2000) acknowledge that, perhaps the survey approach is too simple to address this dimension, and that it is possible that public managers respond in socially desirable ways due to the perceived negativity sometimes associated with the public sector.

Meta-analysis research seeking to take stock of what has been empirically found in terms of the differences between private and public sector management has painted a somewhat muddied picture (Perry & Rainey 1988; Boyne 2002). Boyne (2002) presents perhaps the most comprehensive overview of the research on the distinction between public and private sector management. Boyne (2002) cautions against over-reliance on data comparing USA public and private organisations in the literature, given the USA’s distinctive political culture. Further, Boyne (2002) comments on the reliance placed on Barry Bozeman and Hal Rainey when setting the research direction, and the data sets they have generated, much of which was collected in the 1970s and early 1980s before the rise of NPM.

Boyne (2002) suggests that it would be inappropriate to draw definite conclusions from the available literature, but comments that those who view public management as distinct from private have focused on the external issues of: complexity; permeability; instability; and absence of competitive pressures. Boyne (2002) contends that the public and private sector organisations are different in important aspects and this has an impact on the transferability of management techniques from the private sector. However, the evidence that public and private sectors are fundamentally different on all important respects is limited (Boyne 2002).
The fundamental challenge lies in establishing how, and on what grounds, the practice of management differs between the sectors and to work out what approaches can be transferred from the private sector. Rainey and Chun (2005) believe the agenda is to determine when, where, and how public management performs well.

2.3 THE DEVELOPMENT OF PUBLIC SECTOR MANAGEMENT THEORY

The literature articulates three broad Public Sector Management paradigms which trace the three major developments on organising and managing in the public sector (Stoker 2003; cited in Smith 2004).

- Traditional Public Administration - Politically provided inputs; services monitored through bureaucratic oversight.
- New Public Management - Managing inputs and outputs in a way that ensures economy and responsiveness to consumers.
- Public Value Management - The overarching goal is achieving public value that in turn involves greater effectiveness in tackling the problems that the public most care about; stretches from service delivery to system maintenance.

The evolution of the state created conditions that challenged the prevailing Public Administration paradigm and was not matched to the new circumstances (Gow & Dufour 2000). Albury (2005) states that:

‘One size fits all’ services, if they ever existed, are not suited to an ever-more diverse and heterogeneous society with rising expectations of 24-hour/ seven-days-a-week access, tailored provision and service quality.

Gray and Jenkins (1995) comment that the links between theory and practice have been weak and the contribution of academics to practice and reform have been severely limited. The development of theory in the area of public sector management has trailed practice. In other words, theory has been developed when the conditions encountered by the public sector
changed. This is what happened when the stable conditions from which public administration theory emerged was challenged when bureaucrats were suddenly faced with more dynamic conditions that required changes to the service provision mixture.

Albury (2005) notes that it is not clear in the literature whether there is agreement about what paradigm public sector management is currently operating in. Further, it is not clear whether all three approaches remain valid and whether the three paradigms co-exist simultaneously or whether they are mutually exclusive. Stoker (2006) describes the relationships between the paradigms as confusing and complex. Stoker (2006) describes periods of paradigm transition as involving new approaches working alongside features of administration and management. Gray and Jenkins (1995) comment that Public Administration and New Public Management are competing visions that are in many ways separate and distinct. Gow and Dufour (2000) comment on the lack of an integrated theory for both Public Administration and New Public Management and believe that both paradigms have a contribution to make to the field but that the lack of a common thread makes comparing them difficult.

2.3.1 Public Administration

The traditional role of the public sector was that of Public Administration in which elected representatives determine what the public sector should do, and the bureaucrats administered programs in the areas prescribed. There is a clear separation between the development of strategy performed by politicians and the administrative oversight of its operation by bureaucrats. The focus of bureaucrats is to maintain the efficiency of these politically set directions. Public Administration was the dominant paradigm during which the conditions encountered by the public sector were somewhat more stable (Lynn 2005), for example pre World War II and before antibiotics were developed.
PA is based on the acceptance of a political model of parliamentary government and a professional bureaucratic model of the public sector (Gray & Jenkins 1995; Lynn 2001). The public administration paradigm as described by Hood (1995) has two management doctrines: Keep the public sector sharply distinct from the private sector in terms of continuity, ethos, methods of doing business, organisational design, people, rewards and career structure. Maintain buffers against political and managerial discretion by means of an elaborate structure of procedural rules designed to prevent favouritism and corruption and keep arms-length relationships between politicians and entrusted custodians of the public service “trusts”.

Gow and Dufour (2000) criticise PA on the grounds that it is unable to explain the reality of public organisations in a context of downsizing or to provide tools to improve their operations. Moore (1995, p.74) notes that the classic tradition of Public Administration does not focus a manager’s attention on the issues of the public value produced by the organisation and instead assumes that these issues have been addressed in the forming of the organisation through either legislation or policy mandate. The equilibrium required for effective Public Administration was found to be no longer present and a more proactive role for bureaucrats using private sector management approaches was proposed (Gow & Dufour 2000). Management was identified as a missing ingredient in the Public Sector and it was envisaged that bureaucrats would manage rather than just administer.

2.3.2 New Public Management

Gray and Jenkins (1995) comment that NPM was a replacement for PA based on the perceived failures of the traditional approach. Gray and Jenkins (1995) comment that the erosion of PA and practice of NPM has developed at a remarkable pace and by the 1990s had emerged worldwide. The basis of NPM lay in lessening or removing the differences between the public and private sectors and shifting the emphasis from process accounting to
accountability for results. It reflected higher trust in markets and lower trust in public servants who were seen as budget maximising bureaucrats, and whose activities therefore needed to be costed and evaluated by accounting techniques (Hood 1995). Hood (1995) describes the shift from PA to NPM as entailing a shift from: policy making to management skills; a stress on process to a stress on output; orderly hierarchies to an intendedly more competitive basis for providing public services; fixed to variable pay; and a uniform and inclusive public service to a variant structure with more emphasis on contract provision. Scholars describe the paradigmatic shift away from the traditional Public Administration models of organising public sector services to the management models of the private sector (Gray & Jenkins 1994; Hood 1995; Gow & Dufour 2000; Pollitt 2001).

Charih and Rouillard (1997, p.27; cited in Gow & Dufour 2000) note that an underlying idea of NPM is the separation of the policy formulation activities performed by elected representatives from the operations or service delivery activities of the bureaucrats. However, whilst NPM purports to reinstate the distinction between politics and administration, many managerial functions in the public sector are indeed political.

NPM entails more than just private sector management practices and a series of management techniques and instead implies values and cultural change (Gow & Dufour 2000), and a re-conceptualisation of accountability (Gray & Jenkins 1995). It is clear that NPM advocates a changed role for the state/public sector as a facilitator and minimalist regulator for market systems (Gray & Jenkins 1995). Pollitt (1993, p.48) comments that the UK Thatcher and US Reagan Administrations came to power by expounding the idea that government had grown too big, too expensive and too inhibiting of individual enterprise. The Thatcher administration made cuts in government services and sold nationalised industries to the private sector. O’Flynn (2007) describes the way in which government is viewed, constructed
and arranged under NPM as being firmly rooted within an economic frame and that small government is better. Pollitt (1993) comments that the core labour intensive public services (education, health care and the civil service itself) within the remaining state structures has increased, and that to privatise these seems full of practical difficulties. Pollitt (1993, p.48) states that to reduce these services is also difficult because properly financed and run public schools and health services are very popular in electorates.

Gow and Dufour (2000) contend that NPM is a paradigm but that it is not based on superior theory to that of PA. Luke, Kearins and Verreyene (2008) comment that not enough attention has been paid to how far a public sector organisation can, or should, go with respect to pursuing private sector management approaches under the banner of NPM. Luke et al. (2008) feel that limited attention has been paid to identifying and understanding where the outer limits or boundaries lie with respect to roles, responsibilities, and acceptable ‘commercial’ behaviour in a NPM context.

Meier and Hill (2005) note that Westminster (UK, Australia & NZ) approaches to NPM begin with a question as to what should be the proper scope and role of Government. They note that US approaches lacked this rationale and just simply acted to contract out public sector services. Gray and Jenkins (1995) state that NPM is often used to redefine the role of the public sector, which is a highly political issue, rather than simply improve management within current structures.

Criticisms of NPM have focused on the increased transaction costs often associated with contracting out (Entwistle & Martin 2005; cited in O’Flynn 2007), and the erosion of responsibility and accountability due to decentralisation (Minogue 2000; cited in O’Flynn
As a consequence of two decades of experimentation and an appreciation of NPMs shortcomings, a new discourse on public management is emerging (O’Flynn 2007).

2.3.3 Public Value Management

Moore’s (1995) seminal ‘Theory of Public Value’ states that the reason the public sector exists is to create public value and that the successful practice of public management should increase the public value produced by public sector organisations in both the short and long run. However, it is noted that whilst a conceptual definition of public value is clear, the measurement of its realisation is not so clear (Moore 1995, p.10).

Public Value is a philosophy of public management in which public managers should think and act strategically to create public value and success is drawn from initiating and reshaping public sector enterprises in ways that increase their value to the public (Moore 1995, p.1). The concept of strategy applies meaningfully to the public sector when considering that a public sector organisation might have a distinctive competence wider than its current use and that public sector executives should connect their performance to the aspirations of citizens, overseers and clients (Moore 1995, p.70).

Public sector managers are discouraged from acting entrepreneurially in their organisations because citizens suspect civil servants of acting in their own self interest (Moore 1995, pp.18-19). Moore (1995, p.19) contends that society denies its public sector the key ingredient on which its private sector specifically relies to remain responsive, dynamic and value creating: namely, the adaptability and efficiency that come from using the imagination of managers to combine public demand with access to resources and control over operational capacity to create value. Public Value presents a more modern view of the public sector executive, embracing accountability and viewing public managers as explorers commissioned by society
to search for public value, and in doing so are expected to use their initiative and imagination (Moore 1995, p.299). Under the public value paradigm multiple objectives are pursued by public managers including narrower service objectives, broader outcomes, and the creation and maintenance of trust and legitimacy (Kelly Mulgan & Muers 2002). Kelly et al. (2002) believe that public value provides a broader perspective from which to assess public sector performance incorporating outcomes and the means used to deliver those outcomes, as well as issues of trust and legitimacy. In exploring and defining public value, the emphasis given to consultation and participation has increased, which, in turn, has raised expectations and placed bureaucrats under greater pressure (Smith 2004).

O’Flynn (2007) describes public value as moving away from the ideological position of market versus state provision. Stoker (2006) views public value as a framework for post competitive collaborative network forms of governance. Stoker (2006) states that the governance of the public realm involves networks of deliberation and delivery in pursuit of public value. It can be fleshed out by four propositions:

- Public interventions are defined by the search for public value
- There is a need to give more recognition to the legitimacy of a wide range of stakeholders
- An open minded, relationship approach to the procurement of services is framed by a commitment to a public service ethos
- An adaptable and learning-based approach to the challenge of public service delivery is required

In describing public value Alford and O’Flynn (2009) comment that it focuses on: a wider range of value than public goods; more than outputs; and what has meaning for people, rather than what a public sector decision-maker might presume is best for them.
2.3.3.1 Strategic Triangle

Moore (1995, p. 20) postulates that public value involves looking to the value created and to the efficacy and propriety with which it is created. It also encompasses engaging in the politics surrounding their organisation to help define public value as well as engineering how their organisation operates. The Strategic Triangle (Figure 2.1) encourages public sector organisations to: declare the overall mission or purpose of the organisation in terms of public value; offer an account detailing the sources of support and legitimacy that will be utilised to sustain society’s commitment; and explain how the organisation will be organised and operated to achieve declared objectives.

Figure 2.1: Moore’s (1995) strategic triangle

In developing a strategy for the public sector, a manager must be able to satisfy three tests (Moore 1995 pp. 70-71): produce things of value to overseers, clients and beneficiaries at low cost in terms of money and authority; be able to continually attract both authority and money from the political authorising environment; and accomplish these valuable, authorised activities by the existing organisation with help from others who can be induced to contribute to the organisation’s goals. Moore’s (1995) strategic triangle tests whether a strategy is...
substantively valuable, legitimate and politically sustainable, and operationally and administratively achievable. This framework allows public sector managers to examine their political and task environments to see whether there is support for them to change their organisational purposes in the interest of creating additional public value (Moore 1995, p.71). Alford and O'Flynn (2009) note that managers need to maximise the degree of alignment between the three elements when crafting and implementing new strategy. Managers have to review the public value produced by their organisations intermittently as this is the challenge of defining public value somewhat independently of political support for, and legitimacy of, the organisation. Public managers also have to consider that things will change as new political demands emerge.

2.3.3.2 Authorising Environment

Public managers must be able to articulate a vision that has accommodated the aspirations of the authorising environment, as well as their views based on professional or administrative experience (Moore 1995, p.305). They need to be responsive to, and engage in, two way communication with their authorising environment but should not hide their views on what they think is publicly valuable and instead seek to test the value of their operational and administrative theories (Moore 1995, pp.299-300).

Politics is the final arbiter of public value in the same way that private consumption decisions are the final arbiter of private value (Moore 1995, p.37). Moore (1994) comments that the most important people involved in defining public value are citizens and their representatives acting through the collective processes of government. In this light, what public managers must seek to satisfy are the collective aspirations expressed through the political process (Moore 1994). The political system resolves collective citizen preferences by authorising managers to spend public resources (Moore 1995, p.39). Moore (1994) posits that politics
authoritatively defines what is publicly valuable and thus it is in learning to read, respond to, and shape political aspirations that managers can learn to create public value.

2.3.3.3 Strategy

Moore (1995, p.57) argues that, despite the ambiguity surrounding the concept of public value, public managers need an account of the value their organisations produce with both a story and demonstrated accomplishments. If a public manager is unable to provide an account for the value, then the legitimacy of their enterprise and their capacity to lead it is undermined (Moore 1995, p.57). Moore (1995) proposes three dimensions along which feasible strategies might vary:

- **Level of abstraction** – Moore (1995, p.97) believes there is an optimum level at which a Public Value Strategy should be expressed. Moore (1995, p.97) believes that the greater certainty there is about an organisation’s mission the more concrete the public value strategy can be expressed, and conversely the more conflict about the mission the more abstract the strategy should be.

- **The degree of risk and exposure** – articulating an organisation’s strategy involves an element of risk as it establishes the terms the authorising environment will use to assess it (Moore 1995, p.99). How big a gamble a particular strategy is can, in principle, be measured by comparing its political and operational requirements to the existing political and administrative realities.

- **Whose vision and purposes?** – The extent to which the strategy is viewed as a statement of public purpose rather than the goals of a public manager. Working assumptions made by managers that can be explored through consultation with citizens, overseers, clients and beneficiaries.
Rhodes and Wanna (2007) suggest looking at public value along two dimensions, between operational behaviour and normative vision and between high and low levels of risk (as illustrated in Table 2.2 & Table 2.3).

**Table 2.2: Forms of Public Value**

<table>
<thead>
<tr>
<th>High risk</th>
<th>Low Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational</td>
<td>Normative</td>
</tr>
<tr>
<td>Transformative leadership</td>
<td>Adventurism</td>
</tr>
<tr>
<td>Incrementalism</td>
<td>Emergent strategies</td>
</tr>
</tbody>
</table>

Source: Rhodes and Wanna (2007)

**Table 2.3: The Public Value Ladder**

<table>
<thead>
<tr>
<th>Levels of Risk</th>
<th>Examples of Public Value</th>
<th>Key Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk</td>
<td>Ideas-driven management; searching for high degree of stakeholder consensus and engagement; coalition-building by public officials; finding constituencies that value what the manager wants.</td>
<td>Why do we want or need Platonic guardians? Should managers be 'doing politics'? What are the risks of managers becoming brokers and 'explorers' in search for value? Who authorises them to redefine political priorities? Is there a threat to access and equity?</td>
</tr>
<tr>
<td>Driven by normative vision; highest political risk</td>
<td>Substantial engagement and empowerment of managers and clients in policy formulation and implementation; devolving decision-making capacities to clients; more complex innovations in delivery processes.</td>
<td>Does governments risk ceding control of public policy to the community rather than keeping it in the hands of accountable elected officials? Will there be limited oversight from 'authorising actors'? Is there a risk of capture and clientelism?</td>
</tr>
<tr>
<td>Medium to high risk</td>
<td>Ambitious forms of co-production; technical improvements in delivery chains; assistance to comply with obligations, self-administered modes; adoption of new technologies.</td>
<td>How do managers identify improvements in the delivery chain? Can they enhance operations without changing policy settings? Are the risks largely technical? Did it work? Did it produce the intended benefits to production?</td>
</tr>
<tr>
<td>Strong normative orientation; high-level of political risk</td>
<td>Direct consultation with clients over delivery and compliance systems; systematic use of evaluation data; public reporting on targets informed by client preferences.</td>
<td>Will operational initiatives threaten administrative coherence and consistency? Will active managers become disillusioned if prevented from innovating? How do we manage hidden costs and unintended outcomes?</td>
</tr>
<tr>
<td>Medium risk</td>
<td>Principally operational but with increasing elements of political risk</td>
<td>Market survey information of clients; client feedback information, satisfaction ratings; better information on client needs-expectations.</td>
</tr>
</tbody>
</table>

Source: Rhodes and Wanna (2007)
Rhodes and Wanna (2007) conclude that the lower risk innovations pursued under a public value approach can work. They describe this as initiatives at a relatively low level by officials who are best placed to see the possibilities. Rhodes and Wanna (2008) comment that they believe Moore’s (1995) prescriptions can work well when there is a pre-existing measure of social acceptance for a policy and low levels of risk and conflict. Rhodes and Wanna (2008) believe that the more risk encapsulated in an innovation, the more public managers are being asked to take action that represents the public values of the community and the decreased likelihood of effective change or innovation. Rhodes and Wanna (2008) cite Gains and Stoker (2008) who argue that Westminster systems make public value easier to adopt in local settings, for instance at a local government level and for localised decision making.

### 2.3.3.4 Innovation

In Moore’s (1995, p.211) view, managers should seek, find and exploit opportunities to create public value. In principle, greater value can be produced by: 1. Increasing the quantity or quality of public activities per unit of resource expended; 2. Reducing the costs in terms of money and authority used to achieve current levels of production; 3. Making public organisations better able to identify and respond to citizens’ aspirations; 4. Enhancing the fairness with which public sector organisations operate; 5. Increasing their continuing capacity to respond and innovate.

Moore (1995, p.213) comments that innovation requires capital and entails risk to clients, citizens and managers. To raise the capital and reduce the risks, managers have to engage their political environments for authorisation. A manager’s authority to innovate depends on how much political credibility they enjoy. Moore (1995, p.233-4) distinguishes between different types of innovation:
Policy or program innovation – define new ways of using an organisation’s resources to accomplish its overall mission.

Administrative innovations – new methods for organising, accounting for, or controlling the organisation’s operations

Strategic innovations – seek to redefine the basic purposes or core technologies of an organisation

Moore (1995) advocates taking a strategic perspective on these administrative systems and evaluating the contribution they make to the organisation’s overall strategy. Analysis focused on an organisation’s product, production processes and administrative systems in light of its overall strategy will generally identify important gaps in what the organisation produces and the incongruities in the way it is organised (Moore 1995, p.232). These gaps present both opportunities for management led innovation and become a focus of thought, planning and investment (Moore 1995, p.232). Moore (1995, p.233) notes that how much innovation is required to improve performance is dependent on both the political and task environments the organisation operates in. Moore (1995, p.233) states that in many public sector organisations, employees are unaccustomed to innovation and authorisation for innovative initiatives is held by top level managers.

2.3.3.5 Public Value Debate

The Public Value debate has primarily focused on the prominent role espoused for public managers and its applicability under the Westminster political system (Rhodes & Wanna 2007; 2009a; 2009b; Alford 2008; Alford & O’Flynn 2009). The most extensive critique is presented by Rhodes and Wanna (2007) who posit that the primacy of party politics and the public interest lie at the heart of their argument against the public value approach. Rhodes and Wanna (2007) postulate that Moore’s (1995) public value suggests that public managers
can supplant party politics, and is too bound in the USA political context. Their view is that public value is risky in Westminster political environments where political appointment of public officials is not the norm.

However, Alford (2008) states that Moore (1995) is not arguing for managers to usurp the authority of elected politicians and the significance of authorising is that it acts to legitimise a manager’s autonomy to shape public value. It is the arena within which managers’ ideas are tested and modified by their political masters.


Rhodes and Wanna (2007) deem that there needs to be clear demarcation between politicians and managers and that each has distinctive rights, responsibilities and bases of legitimacy and that any theory must cover their separateness. Moore’s (1995) view presupposes an institutional environment in which managers exercise a degree of autonomy and entrepreneurialism atypical of public servants in the Westminster system, and not welcome by political masters (Rhodes & Wanna 2007). However, they note that public value has resonated forcefully in Westminster derived systems such as the UK, Australia and NZ (Rhodes & Wanna 2007). Other scholars have commented that public value could apply in a Westminster system or the USA (Smith 2004). Alford and O’Flynn (2009) view public value as calling for the voices of managers to be heard in the policy process, but not privileging the ideas of managers over others.
Rhodes and Wanna (2007) comment that public value has contributed positively to both the perception of public managers, and public managers’ perceptions of themselves, as well as helping to restore legitimacy to intervention and innovation. However, Rhodes and Wanna (2007) argue against downgrading the ‘primacy of party politics’ and criticise the notion that public managers should play the role of platonic guardians deciding the public interest.

Rhodes and Wanna (2007) criticise public value on the grounds that it does not distinguish whether it is a normative theory describing what managers should do, or an empirically derived theory of what they actually do. Alford and O’Flynn (2009) conclude that public value has focused on trying to provide an account of what managers actually do, but also what they should do.

Rhodes and Wanna (2007) consider the public value view is too positive in its conceptualisation of the public sector, ignoring the dark side of the state (obligations, taxation, fines etc), describing them as benign organisations that exist to create public value. Further, ideas such as hierarchy, strong cabinet government, majority party control of the executive and ministerial control of officials, fit poorly with the public value approach (Rhodes & Wanna 2007). Rhodes and Wanna (2007; 2009) see an inherent danger in public managers serving as platonic guardians and arbiters of public interest. Rhodes and Wanna (2007) note that in Westminster systems the politicians set the direction structures for the politics of a public sector organisation.

Rhodes and Wanna (2007) describe public managers engaging in the political management espoused by Moore (1995) as being in a high risk game that may damage their career. Rhodes and Wanna (1997) comment that, because in Moore’s (1995) conception, the authorising environment and policy process are separated, the description does not represent
what actually happens in political life. Ministers and politicians are not merely end-users of public value that has been designed by line managers, but are themselves initiators of public choices (Rhodes & Wanna 2007). Rhodes and Wanna (2007) deem the second major problem with the public value approach is that public managers should not be given the right to choose between conceptions of public good, and there is little attention paid to how they are to be held accountable for the decisions they take.

Alford (2008) deem Rhodes and Wanna’s (2007) viewpoint as too limiting on the role of the public manager and instead views Moore’s (1995) ideas as compelling for reinvigorating the field of public administration. Rhodes and Wanna (2008) respond to Alford’s (2008) critique, by noting that the role advocated under Moore’s (1995) strategic triangle is the primary task of the prime-minister and ministers, while non-elected public managers advise. Rhodes and Wanna (2008) view prime minister and ministers as the dominant actors in the public manager’s authorising environment and their political views take precedence over managers and management. Alford and O’Flynn (2009) comment that public value can be both used to diagnose the existing situation (e.g. the value currently being produced, where the authorising environment stands and the existing operational capabilities). But it can also help structure thinking about how things should be done, the value the organisation should produce and how far the authorising environment and organisational capabilities allow new missions to be pursued. Alford and O’Flynn (2009) view public value as offering a framework for analysing how public managers behave, and assessing how they incorporate these factors into their management practice.
### Table 2.4: Management Paradigms and the Challenges of Efficiency, Accountability, and Equity

<table>
<thead>
<tr>
<th>Responses to Core Challenges</th>
<th>Efficiency</th>
<th>Accountability</th>
<th>Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional public administration</td>
<td>Break down complex tasks and get staff to follow procedures.</td>
<td>Competitive elections provide leaders who can steer and exercise oversight.</td>
<td>By treating all similar cases the same.</td>
</tr>
<tr>
<td>New public management</td>
<td>Set tough performance tasks that the organization is encouraged to achieve.</td>
<td>Politicians set public goals and set targets and then hold managers to account for their delivery.</td>
<td>Offering a framework of responsiveness to users and setting targets to achieve fair access to services.</td>
</tr>
<tr>
<td>Public value management</td>
<td>Check on a continuous basis that activity fits purpose.</td>
<td>By negotiated goal setting and oversight.</td>
<td>By developing individual capacity so that rights and responsibilities are realized.</td>
</tr>
</tbody>
</table>

Source: Stoker (2006)
### Table 2.5: Approaches to Public Management

<table>
<thead>
<tr>
<th></th>
<th>Traditional public management</th>
<th>‘New public management’</th>
<th>Public value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public interest</strong></td>
<td>Defined by politicians/experts</td>
<td>Aggregation of individual preferences demonstrated by customer choice</td>
<td>Individual and public preferences (resulting from public deliberation)</td>
</tr>
<tr>
<td><strong>Performance objective</strong></td>
<td>Managing inputs</td>
<td>Managing inputs and outputs</td>
<td>Multiple objectives</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– Service outputs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– Satisfaction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– Outcomes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– Maintaining trust/legitimacy</td>
</tr>
<tr>
<td><strong>Dominant model of accountability</strong></td>
<td>Upwards through departments to politicians and through them to parliament</td>
<td>Upwards through performance contracts; sometimes outward to customers through market mechanisms</td>
<td>Multiple</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– Citizens as overseers of government</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– Customers as users</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– Taxpayers as funders</td>
</tr>
<tr>
<td><strong>Preferred</strong></td>
<td>Hierarchical department of self-regulating profession</td>
<td>Private sector or tightly defined arm’s-length public agency</td>
<td>Menu of alternatives selected pragmatically (public sector agencies, private companies, JVCs, community interest companies, community groups as well as increasing role for user choice)</td>
</tr>
<tr>
<td><strong>Approach to public service ethos</strong></td>
<td>Public sector has monopoly on service ethos, and all public bodies have it</td>
<td>Sceptical of public sector ethos (leads to inefficiency and empire building) — favours customer service</td>
<td>No one sector has a monopoly on ethos, and no one ethos always appropriate. As a community resource it needs to be carefully managed</td>
</tr>
<tr>
<td><strong>Role for public participation</strong></td>
<td>Limited to voting in elections and pressure on elected representatives</td>
<td>Limited — apart from use of customer satisfaction surveys</td>
<td>Crucial — multifaceted (customers, citizens, key stakeholders)</td>
</tr>
<tr>
<td><strong>Goal of managers</strong></td>
<td>Respond to political direction</td>
<td>Meet agreed performance targets</td>
<td>Respond to citizen/user preferences, renew mandate and trust through guaranteeing quality services</td>
</tr>
</tbody>
</table>

Table 2.6: Paradigms of Management

<table>
<thead>
<tr>
<th>Key objectives</th>
<th>Traditional Public Administration</th>
<th>New Public Management</th>
<th>Public Value Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Politically provided inputs; services monitored through bureaucratic oversight.</td>
<td>Managing inputs and outputs in a way that ensures economy and responsiveness to consumers.</td>
<td>The overarching goal is achieving public value that in turn involves greater effectiveness in tackling the problems that the public most cares about; stretches from service delivery to system maintenance.</td>
</tr>
<tr>
<td>Role of managers</td>
<td>To ensure that rules and appropriate procedures are followed.</td>
<td>To help define and meet agreed performance targets.</td>
<td>To play an active role in steering networks of deliberation and delivery and maintain the overall capacity of the system.</td>
</tr>
<tr>
<td>Definition of public interest</td>
<td>By politicians or experts; little in the way of public input.</td>
<td>Aggregation of individual preferences, in practice captured by senior politicians or managers supported by evidence about customer choice.</td>
<td>Individual and public preferences produced through a complex process of interaction that involves deliberative reflection over inputs and opportunity costs.</td>
</tr>
<tr>
<td>Approach to public service ethos</td>
<td>Public sector has monopoly on service ethos, and all public bodies have it.</td>
<td>Skeptical of public sector ethos (leads to inefficiency and empire building); favors customer service.</td>
<td>No one sector has a monopoly on public service ethos; maintaining relationships through shared values is seen as essential.</td>
</tr>
<tr>
<td>Preferred system for service delivery</td>
<td>Hierarchical department or self-regulating profession.</td>
<td>Private sector or tightly defined arms-length public agency.</td>
<td>Menu of alternatives selected pragmatically and a reflexive approach to intervention mechanisms to achieve outputs.</td>
</tr>
<tr>
<td>Contribution of the democratic process</td>
<td>Delivers accountability: Competition between elected leaders provides an overarching accountability.</td>
<td>Delivers objectives: Limited to setting objectives and checking performance, leaving managers to determine the means</td>
<td>Delivers dialogue: Integral to all that is undertaken, a rolling and continuous process of democratic exchange is essential.</td>
</tr>
</tbody>
</table>


Table 2.4, Table 2.5 and Table 2.6 describe the key differences between the three paradigms of managing in the public sector. Stoker (2006) concludes that each narrative of management has its own perspective on human motivation and resolves the challenges of efficiency, accountability and equity in its own way. Stoker (2006) also contends that in both TPA and NPM the trade-off between democracy and management is perceived to have the potential to go wrong and create significant problems. Stoker (2006) highlights the limitations of the different approaches in Table 2.7 below.
Table 2.7: Dilemmas Associated With Management Narratives

<table>
<thead>
<tr>
<th>Dilemmas</th>
<th>Traditional Public Administration</th>
<th>New Public Management</th>
<th>Public Value Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usurping democracy</td>
<td>The domination of officialdom, a system that frustrates politics; “Yes, minister” syndrome.</td>
<td>Management chases targets not political demands; the extenuation of contract relationships makes political control even more problematic; citizens reduced to consumer.</td>
<td>Managers doing politics could push citizens and politicians to the margins; there are severe limits to the extent that politics can be managed and remain open and legitimate.</td>
</tr>
<tr>
<td>Undermining management</td>
<td>The politicization of bureaucracy.</td>
<td>The undermining of professional judgment.</td>
<td>Encouraging a talking shop rather than action-oriented management.</td>
</tr>
<tr>
<td>Key safeguards</td>
<td>Conventions and constitutions.</td>
<td>Alertness of political leadership.</td>
<td>Good practice and stakeholder pluralist review to ensure that the system delivers effective stakeholder democracy and management.</td>
</tr>
</tbody>
</table>

Source: Stoker (2006)

Moore (1995, pp.20-21) states that maintaining a rigorous distinction between policy and administration is both theoretically and practically impossible. Smith (2004) comments that policy, politics and public management are deeply intertwined.

In theory, Traditional Public Administration discourages bureaucrats from exercising their managerial imaginations but in practice resourceful public managers with agendas of their own have played a role in shaping the public interest. As a result of this Moore (1995, p.21) advocates an approach in which formal channels are created through which managerial ideas about opportunities to create value are captured.

Rhodes and Wanna (2007) note that for many scholars, public value encouraged a more positive view of government and public service provision and innovation, particularly post-NPM. Moore (1995, pp.30-31) describes the tension between allowing democratic politics to determine what is worth producing in the public sector and the vulnerability of democratic politics to corruption of various kinds. Moore (1995, p.32) notes that allowing the political process to determine the best allocation of public resources will appeal to those who value...
politics as the best way of creating collective will, and see democratic politics as the best way of reconciling individual and collective differences. However, those who have seen too much corruption to trust the integrity or utility of the political process find the idea, that public value should be determined politically, unpalatable. Problems with completely politically defined and driven public value have been that: political mandates come loaded with special interests; at times incoherent mandates that are inconsistent with one another. In other times political mandates shifted, destroying investments already made and momentum gained.

2.3.4.1 Procurement

Under the public administration paradigm the focus of procurement activities is on delivering policy objectives as determined by politicians, however it assumes a relatively stable and non changing mandate for the public sector. Under new public management activities previously undertaken by the public sector were privatised or outsourced. Procurement was pursued via competitive tendering and frequently characterised by lowest cost procurement, sometimes compulsory competitive tendering. The risks of this procurement approach included decreased quality and continuity of service, as well as losing sight of the policy objectives sought. Under the public value paradigm the focus of procurement is broadly on achieving government objectives and recognises the manager’s role in seeking and creating value. The challenges appear to be in designing more complex contracts that require more skill on the supply side to deliver and the evaluation activities associated with delivering more complex contracts.

2.4 JURISDICTIONAL APPROACHES TO PUBLIC VALUE

Public Value approaches in a public sector context have been introduced in a number of jurisdictions throughout the world most recently under the umbrella term ‘Best Value’ to

In the 1980s-90s, the many public sectors experienced marketisation phases (O’Flynn 2007), under which value-for-money expenditure of Government funds was deemed to be achieved through Compulsory Competitive Tendering (CCT). This was based on the logic that market competition would deliver services for the lowest cost, and hence best value was achieved through competition and accepting lowest bids.

Domberger and Rimmer (1994) conclude that the introduction of contracting has yielded significant benefits for public sector organisations in terms of costs, but that quality decreased. However they note some of the methodological difficulties in this area, with variable accounting practices meaning reliable cost data is difficult to obtain and hence, comparisons between jurisdictions are difficult. Domberger and Rimmer (1994) conclude where public services have been tendered, and public providers are required to bid against private providers (see Sheffield & Coleshill 2001) that the process of competitive bidding rather than simply transferring functions from the public to the private sectors is the key source of widespread efficiency gains.

The concept of best value has attracted varying interpretations throughout the world and been primarily employed at a Local Government level. The three jurisdictions presented in this section (UK, Scotland and Victoria, Australia) have been selected because they have experienced all three paradigms of public sector management. Each of these jurisdictions have experienced a period of public administration, the move to new public management and now public value management.
2.4.1 UK

The UK Thatcher government was elected in 1979 and introduced CCT for local government services shortly after in 1980. This was undertaken on the basis that the market would deliver efficiency, effectiveness and value for money. There was recognition that CCT had not delivered the benefits promised (Domberger 1994; McAdam & O’Neill 2002; (Lavery, 1999; Warner & Hebdon, 2001; both cited in Ancarani 2009)): improved quality, lower costs; and continuity of service provision.

Once elected, the Blair New Labour UK Government had a clear manifesto commitment to introduce Best Value practices to Local Government partly to replace the CCT system introduced by earlier conservative governments and also as part of a modernisation agenda (Wisniewski & Stewart 2001). The new initiative of best value in the UK was announced in 1997 with a promise to abolish compulsive competitive tendering (CCT) and to introduce a new concept for local government (McAdam & O’Neill 2002; Bovaird & Halachmi 2001). Bovaird & Halachmi (2001) describe the introduction of best value legislation in the UK as a very high profile initiative.

Bovaird and Halachmi (2001) comment that local authorities, working together with their local communities, must negotiate the meaning of best value. This was reflected in the UK Local Government Best Value legislation which required authorities to undertake community consultation to negotiate the meaning of best value with the local communities they service (Bovaird & Halachmi, 2001).

In England, ‘best value’ is a statutory duty on which councils plan, review and manage their performance in order to meet the needs and expectations of their citizens who use their services (Communities & Local Government 2010). The emphasis of ‘Best value’ was to
introduce robust performance measurement (Comprehensive Performance Assessment – CPA) into Local Authorities with a view to driving continuous improvement and the delivery of high quality services. The CPA framework is similar to an Excellence Model (EFQM 2010; ABEF, 2010; Baldrige 2010). As of 2008 the CPA has been replaced with a comprehensive area assessment (CAA) and encouraging Local Authorities to enter into Local Strategic Partnerships with other parts of the public sector as well as the private, business, community and voluntary sectors and forming Local Area Agreements. Local Area Agreements (LAAs) set out the priorities for a local area agreed between central government and a local area (the local authority and Local Strategic Partnership) and other key partners at the local level (Communities & Local Government 2010).

2.4.2 Scotland

In Scotland, the newly elected Scottish Executive placed a duty of ‘best value’ on local government services with a requirement that their approach to ‘best value’ be amenable to audit by Audit Scotland (Wisniewski & Stewart 2001). Martin (1999) describes the development of best value in Scotland as separate from, but similar to, that implemented in other parts of the UK. Scotland has forged its own path with ‘best value’ in the public sector (Curry 1999; Wisniewski & Stewart 2001, 2004; Jaconelli & Sheffield 2000; Sheffield & Coleshill 2001; Magd & Curry 2003; Donnelly 2004) perhaps because of the newly formed Scottish parliament and the fact that the largest component of its budget is expended in Local Government activity. These circumstances perhaps led to the joint agreement (A Partnership for a Better Scotland 2003) between the leaders of the Scottish Labour Party and the Scottish Liberal Democrats, which were two of the major, and opposing political parties.

In the next four years we are determined, together, to improve public services and tackle the real issues that matter to people in Scotland.
People deserve and expect public services that are of the highest possible quality and offer the greatest choice. We will continue to use the record levels of investment to secure new and better facilities, particularly for our schools and hospitals. We will also match this investment with continued reform so that our public services are designed and delivered around the needs of individuals and the communities within which they live.

In Scotland, all Local Councils began to implement the Best Value performance management framework from 1998 onwards (Scottish Office, 1998; cited in Martin, 1999). Martin (1999) felt that, as the details emerged, it has become increasingly clear that, far from sweeping away CCT, the Best Value regime would seek to build on it. ‘Best value’ was enshrined in legislation in Scotland under the Local Government in Scotland Act (2003) placing a statutory duty on local government. In Scotland Best Value is structured around ten key principles (Best Value Scotland 2009): commitment and leadership; responsiveness and consultation; sound governance arrangements at strategic, financial and operational levels; sound management of resources; use of review and options appraisal; competitiveness, trading and the discharge of authority functions (specific to Best Value in Local Government); accountability; joint working; sustainable development; equal opportunities.

Since 2002, a non-statutory duty of Best Value has been placed upon those public service organisations in the Scottish Administration with Accountable Officers (Scottish Executive departments, Executive Agencies and Non-Departmental Public Bodies' (NDPDs) (Best Value Scotland 2009). This draws other public bodies into the quest for best value although, in late 2005, the decision was made not to legislate Best Value for the Scottish Executive. Best Value is still legislated in Local Government and the Government is assessing the best way to move forward in Central Government (Best Value Scotland 2009). A large part of the Scottish initiatives appear to be aimed at instilling a culture of continuous improvement in the public sector.
2.4.3 Victoria, Australia

The Kennett Liberal Government in Victoria, Australia introduced Compulsory Competitive Tendering (CCT) in a local government context which was pursued aggressively from 1994-1999. CCT under the Kennett regime required local governments to expose 50% of their budget to outsourcing via CCT (Hobam 1995; cited in Van Gramberg & Teicher 2000). The Bracks Victorian State Labor Government, elected in 1999, replaced CCT with a ‘best value’ regime that came into effect at the start of 2000. Similar to the introduction in the UK, best value in Victoria was designed to remove the inflexibility and rigidity of CCT while ensuring that local councils remained accountable for their expenditure with an obligation to ensure that they seek the best value in providing services (Local Government (Best Value Principles Act) 1999). The Bracks Government objectives in introducing legislation for the best value principles were to foster: local accountability; whole-of-organisation response; consultation on performance; best value outcomes; benefits, not costs; and encourage innovation.

Best Value legislation in Victoria required local governments to consult with the communities in developing and planning the services they offer, and reporting upon how services are performing, as well as planned improvement activities (Local Government Victoria 2004). The 2003 Annual Report details meetings between the commission and councils and suggests that most councils were happy with the principles and flexibility of the approach and would prefer there is no change (Best Value Commission 2003). One recommendation of the report calls for the benefits of best value to be more widely promoted across the sector (Best Value Commission 2003).

By the end of 2005 all local government services had been reviewed against the six best value principles, as per the plan (Best Value Commission 2007). The legislation still required local governments to apply the principles and to report annually to their communities on Best
Value performance but councils were to have discretion as to how they report. The overall conclusion from the review was that the work of the Best Value Commission (BVC) can be viewed as complete and that continuous improvement in local governments should continue to be supported through the work of the peak bodies (Local Government Professionals – LGPro; Municipal Association of Victoria – MAV; Victorian Local Governance Association – VLGA) (Best Value Commission 2007).

### 2.4.4 Best Value Conclusions

Best value is flexible and varied but has common characteristics; responsiveness, continuous improvement, accountability etc. The evidence from Best Value approaches used in various jurisdictions is that Value has to be defined and articulated locally on a case by case basis. The evidence from other environments and other jurisdictions is that ‘best value’ regimes are flexible, rather than prescriptive and they require to be matched to the environment in which they are used. They have been sufficiently described and detailed to enable the system to be audited by an external auditor. Implementing Best Value approaches has been viewed as a means of creating a culture of continuous improvement within Government. Community consultation is a crucial component of being able to demonstrate best value in any public sector environment. The various Best Value interpretations embody the ideas of Moore (1995) with public managers being encouraged to engage with communities to define value, and then seeking the authorisation of politicians.

As Best value is not prescriptive, there is a great deal to consider when seeking to address ‘best value’ in construction procurement. This appears sometimes to be absent from elements of the construction literature where they have attempted to create models that can be applied universally. However, the primary focus of these schemes is not on the public sector client decision making. Love et al. (2008, p.773) states that:
a procurement framework needs to be able to guide the decision maker rather than provide a prescriptive solution.

2.5 PUBLIC VALUE AND PROCUREMENT

If the purpose of the public sector is defined in terms of creating public value, and the sector is increasingly outsourcing (Domberger 1998) then procurement should be viewed as having a potential contribution of growing importance. Furthermore, the Government’s overall objective to create public value should be viewed as central when in partnership with the private sector. Hence, procurement provides Government with a lever from which it can create public value.

Porter’s (1985, p.33) value chain is an important lens through which organisations can examine the ways in which they create value (competitive advantage). It analyses sources of value creation by examining the internal activities an organisation performs and the interaction between these activities. The value chain distinguishes between supporting and primary activities and classifies procurement as a supporting activity but recognises the effect it can have on the rest of the organisation (Porter 1985, pp.40-44). Porter’s (1985) value chain acknowledges that the makeup of activities performed by an organisation will differ according to its sector. In the public sector procurement becomes more of a primary activity used to strategically deliver policy objectives. As the public sector has increasingly adopted outsourcing and contracting out approaches, procurement of these goods and services has become a more important component of the public sector’s value chain. In the case of infrastructure project procurement, and partially as a function of the level of expenditure, procurement becomes very much a primary activity as part of the public sectors value chain. This necessitates different skill sets for both managers and operations in the area of designing contracts (Brown, Potoski & Van Slyke 2006).
2.6 POLICY AND DECISION MAKING

There are many different perspectives on how public policy is formulated or develops (see Hill 1997, p.99-123). Hogwood and Gunn (1984, pp.49-61) distinguish between descriptive models of how policies are made, and prescriptive models of how policies should be made. It is clear from the descriptive viewpoints that policy making is a complex process involving a network of actors who may be required to bargain, negotiate and compromise in order to reach consensus. Clearly, politicians are important actors influencing the development of policy, as a product of both their elected powers and their responsibility to be accountable to those that elect them.

In Australia, one prominent manner in which policy develops is via political promises, which are often a prominent feature of an election campaign, and Governments frequently claim mandates for their policies once elected. Political promises are translated into policy and the administration is then charged with delivering or operationalising policy and translating it into action.

One way in which public policy is legitimised is through the budgetary process. When politicians vote in parliament to spend taxpayer funds they legitimise public sector intervention and activity. Thus, there is a well defined set of budgetary processes that authorise and legitimise public sector activity.

2.6.1 Policy by-products

Graycar (2007) comments that what is notable in the area of tackling problems in the public sector are that the things that work best are often by-products of another policy or practice domain. Graycar (2007) believes it is often these unintended consequences of policy making
that make the biggest impact, but notes that policy makers are often not well equipped to recognise or capitalise on these by-products of policy making.

Taking procurement as an example, Government concern with regional development is often focused on sustaining regional centres, providing regional activity, and retaining youth in the regions. Commonwealth and State governments in Australia prioritise both these areas in their policy documents. Furthermore, the Victorian State government’s regional sustainability policy intents are outlined in the Moving Forward: Update The Next Two Years 2008-2010. The report describes the goal of developing and facilitating investment in rural and regional Victoria in selected industry sectors as one of its key strategies to ensure the sustained economic growth and development of regional Victoria. Amongst other items, the Victorian Government’s 2009-10 budget details infrastructure investment in regional Victoria of some $580.5 million ($150.2 million for regional hospital building program; $88.3 million for school developments; $342 million for transport links). All of these initiatives are explicitly linked to employment creation in statements by various Ministers:

the 2009 State Budget will also provide a boost to regional economies and jobs through construction, with this budget alone securing up to 35,000 Victorian jobs - Minister for Health, Mr Daniel Andrews (Victorian Budget 2009)

An approach to procurement based solely on lowest cost will be silent on the equity and community engagement within projects, on the economic development of regions, and on the retention of youth in regional centres. However, employment is clearly a policy by-product being sought by the Minister.
2.7 THE PROCUREMENT OF GOODS AND SERVICES IN THE PUBLIC SECTOR

As Donnelly (1999) notes, it is as a provider of services to citizens that the public sector achieves many of its broader objectives, and is often judged on the provision of these services. Outsourcing of government services has become commonplace in many developed and developing nations around the world (Domberger 1998, p.22). Increasingly as a means of delivering services to the communities they serve, Governments are exploring partnerships with the private sector that may range from outright privatisation, contracting out, or the use of private finance to provide social infrastructure (Hall 1998).

Essentially, the principle underlying any procurement is a ‘make or buy’ decision (Walker, Stark, Arlt & Rowlinson 2008). In the public sector, make or buy decisions are politically charged issues and are often viewed as a means to privatise the provision of public services (Domberger & Rimmer 1994). Domberger (1998, p.3) believes that the success of outsourcing initiatives lies in two key strategic choices made by organizations. These are the location of the organisational boundaries, in terms of deciding what the organisation should produce itself and what it should contract out. The second is the structure (nature) of the organisational relationships.

Domberger and Rimmer (1994) note that basing the decision solely on economic considerations is easy, although frequently not the main or only, consideration in the public sector. Social objectives, accountability, equity considerations and the security of supply are reasons why public production can be preferred to private (Domberger & Rimmer 1994).
2.7.1 Differences between Public and Private Procurement

Many scholars acknowledge the fundamentally different reasons, and factors influencing procurement in the public sector (Domberger & Rimmer 1994; Domberger 1998; Donnelly 1999; Murray 2001; Staples & Dalrymple 2006; 2007; 2008). Murray (2001) addresses this fundamental difference stating that, in the private sector, business criteria are ‘return on investment’ delivered through profit maximisation, sustainable competitive advantage, survival and growth. Murray (2001) states that the goals of local government purchasing are value for money/best value, Local Agenda 21, environment, local economic development, quality of life, quality, customer focus in service delivery and cost reduction. Murray (2001) contends that the strategic goals of local government are fundamentally different from those of private sector organisations.

Murray’s (2001) survey responses from chief executives uncovered a gap between the current and potential contribution of procurement to local government strategy. Murray (2001) views this gap as providing a major strategic opportunity for local government purchasing professionals to add value and should therefore be the focus of purchasing strategies, along with the maintenance of other contributions. Value-for-money was found to be the primary objective of purchasing in local government, although it was not a strategic goal of local government (Murray 2001).

Murray (2001) believes the contingency school of procurement (for example, Rajagopal & Bernard 1993; Watts et al. 1995; Carter & Narasimhan 1996; Carr & Smeltzer 1997; all cited in Murray 2001) holds a view that purchasing’s role should directly flow from the wider goals of the firm and not be limited or restricted by former traditions. Purchasing’s strategic contribution, according to the contingency school, lies in integration with the explicit goals of
other functions (Carter & Narasimhan, 1996; cited in Murray 2001) and developing appropriate synergistic purchasing strategies.

The objectives of local governments are wider ranging and fundamentally different from those of other sectors. As a result, local governments might actually be doing themselves a disservice, and potentially delivering sub-optimal performance in attempting to transfer the private sector procurement rationale to government (Murray 2001). Murray (2001) states that the objectives of private sector purchasing are inappropriate and inadequate for local government. However, the strategies pursued by private sector organisations can be appropriate, but may be inadequate.

2.8 PROCUREMENT OF CONSTRUCTION BY PUBLIC SECTOR CLIENTS

In Australia, competitive tendering and contracting (CTC) has embraced alternative means of procuring public sector facilities to the traditional reliance upon an in-house team delivery approach (Steane & Walker 2000). The direct nomination (negotiation) approach to selecting building contractors and consultants is a prevalent selection approach used in the private sector. However, given the imperative for accountability in the public sector, the selection of building consultants and contractors is primarily undertaken via either restricted tendering involving prequalification, or open tendering of public works (Hinds 1993).

Kelly et al. (2004, p.159) believe construction projects are an outcome from an organisation’s strategic management process, and, as such, require aligning with the corporate and/or business unit’s missions and objectives to achieve value-for-money. The public sector invests in physical assets to deliver the goods, services and symbols that society values (Winch 2002). The procurement of a construction project for example hospitals, schools, and courthouses is an indirect activity that enables government to deliver services in the areas of
health, education and justice. It has been recognised that designing contracts is a very complex task and requires public managers to make many public value laden decisions including a vendor’s obligations and tasks (Brown, Potoski & Van Slyke 2006).

2.8.1 The Nature of Public Sector Construction Projects

Much of the construction in the public sector is undertaken so that public services such as education and health can be provided. In both of these arenas, there are private sector providers of both education and health services. However, in the public sector, there are many projects where there is really no analogue in the private sector e.g. heritage buildings, war memorials, national parks etc. Construction projects within these areas are procured with well defined purposes, are well established as a legitimate use of public funds, and undoubtedly create public value. Winch (2002, p.5) describes the investment in physical assets leading to the provision of goods, services and symbols as broadly creating new value in society, which may then be exploited for both private benefit and public good. Palaneeswaran et al. (2003) consider the prime objectives of public sector construction contractor selections should include proper delivery of good products and services, minimisation of risk and maximisation of value-for-money.

2.8.1.1 The Procurement Process

In addition to the public value created by investing in a new building or road, the procurement process used to attain the asset can also be viewed by public managers as an opportunity to create additional public value. The pursuit of policy by-products via the procurement process has been prominent in many government’s responses to the Global Financial Crisis. For example, the Australian Federal Government’s National Building Economic Stimulus Plan outlined $800 Million of investment in Community Infrastructure designed to stimulate
economic activity in regional and local community infrastructure (Economic Stimulus Plan 2009):

This rapid injection of funds into local communities will support local jobs to specific communities over the short and long term (Economic Stimulus Plan 2009)

O’Flynn (2007) believes that a more pragmatic approach to selecting providers to deliver public services creates more opportunities for the maximisation of public value. In the case of construction projects, instead of procuring on the basis of the lowest price, a public sector client might decide to spend more to achieve a better alignment with government strategy and objectives. For example, this might involve pursuing regional development or local supplier policies by selecting building contractors who are more capable of engaging local small and medium-sized enterprises (SMEs) as subcontractors or suppliers, and or training apprentices or providing employment for ‘at risk’ long term unemployed youth.

The private sector influenced New Public Management (NPM) approach to procuring in the public sector procurement has sought to purchase at lowest cost, focusing on cost efficiencies for particular departments or agencies and less on the basis whole-of-government effectiveness. O’Flynn (2007) suggests that public value requires a more ‘joined-up’, collaborative approach, accepting that government activity is interconnected and interdependent. Palaneeeswaran, Kumaraswamy and Ng (2003) present common principles of public clients as public accountability, value-for-money, transparency, open, equitable and fair competition, confidentiality and propriety, integrity and probity.

2.9 CONSTRUCTION PROJECT PROCUREMENT

Construction project procurement has become an area of increasing research focus. Tookey, Murray, Hardcastle and Langford (2001) comment that one strong presumption in managing a project is that if you have selected the right procurement system, it will contribute to
successful project outcomes. Much research focuses on judicious contractor selection believing that it will lead to successful project outcomes (Holt et al. 1995).

One of the key themes identified in the construction management literature, predicated on this logic of selection decisions leading to successful outcomes, is the types of selection criteria being used. There is a plethora of research proposing potential models to help make decisions about contractors, but somewhat of a shortage of empirical testing of these proposed models and frameworks. There is also commentary on prequalification where a two stage approach is used with the first stage being prequalification and the second stage bidding. Other important strands include discussions of the contractual approaches applied (Kumaraswamy & Dulaimi 2001; Keniger & Walker 2003), transaction costs (Walker, Rowlinson & Stark 2008, pp.7-9) the management of supply chains (Palaneeswaran, Kumaraswamy & Zhang 2001; Dainty, Briscoe & Millet 2001; Dainty, Ison & Briscoe 2005; Cox & Ireland 2002; Love, Irani & Edwards 2004; Fearnie & Thorpe 2007; Vrijhoef & Koskela 2000; Humphreys, Matthews & Kumaraswamy 2003), and client and individual purchaser knowledge (Cousins, Lamming, Lawson and Squire 2008).

There is significant commentary in the literature advocating a move away from procurement decisions based solely on price, beginning with Latham (1994), Egan (1998) etc. In the public sector, low bid based selections have been common (Palaneeswaran, Kumaraswamy & Ng 2003). Wong, Holt and Cooper (2000) note that there is a growing urge for a shift from ‘lowest-price wins’ to ‘multi-criteria selection’ practices in the contractor selection process. Waara (2004) notes that public sector clients increasingly use other criteria than lowest price when awarding construction contracts.
2.9.1 Contract Types

The traditional approach to the procurement of construction projects (Design-Bid-Build) involves separate contracts between the client and the architect/structural/civil engineer and between the client and the lead contractor/builder (Ngowi 2000; Heisse 2002; Walker & Hampson, 2003, pp.13-15). Walker and Hampson (2003, pp.13-15) describe this approach as involving discrete design development, tender, contract award and construction delivery phases.

In recent times, non-traditional procurement approaches have been introduced that seek to re-integrate the segregated design and construction functions into Design & Construct, also referred to as Design & Build, procurement routes (Kumaraswamy & Dulaimi 2001; Walker & Hampson 2003, pp.16-19). Walker and Hampson (2003, p.19) note that non-traditional procurement methods allow for earlier contractor involvement in the design process which enables accumulated building expertise to be available to the design team. Design & Construct approaches provide for an organisation to be contracted by a client to manage both the design and construction phases as a single point of contact. Walker and Hampson (2003, p.16) note that, in many instances, the design and construction contractor subcontracts, or enters a joint venture with a design firm.

There has also been a growing interest and use of relationship based contractual approaches (Alliance, Management Contracting, Construction Management) (Rowlinson, Walker & Cheung 2008, pp.295-297; Walker, Hampson & Peters 2000). Additionally there has been increasing attention given to the use of Public-Private-Partnerships(PPP)/Private-Finance-Initiatives(PFI)/Build-Operate-Own-Transfer (BOOT) schemes where a consortium entity contracts to finance, design and construct, as well as operate an asset for a period of time (Walker & Hampson 2003, p.15; Parker & Hartley 2003).
However, it should be noted that textbook definitions of procurement routes have been found to be too prescriptive to be meaningful to clients (Tookey et al. 2001). Tookey et al. (2001) interviewed major participants (client, contractor, quantity surveyor, architect and engineering consultants) familiar with the initial stages of 12 projects. Tookey et al. (2001) found that the procurement approaches used did not fit comfortably with the textbook definitions and were hybrid approaches featuring amendments to mitigate risk and operational techniques used to ‘get the job done’.

Walker and Hampson (2003, p.13) explore procurement between construction owners and contractors through a cost risk relationship perspective in Figure 2.2.

**Figure 2.2: A Construction Cost Continuum for Project Delivery**

As can be seen from Figure 2.10 the non-traditional approaches have redistributed the cost risks from the contractor to the client. Non-traditional procurement approaches involve a shared risk profile between contractor and client when compared to traditional procurement in which the contractor carries most of the risk.
2.9.1.1 Selection of Procurement Approach

For projects that are deemed to have minimal complexity and a design brief that is unambiguous then a traditional procurement approach is frequently deemed appropriate (Walker & Rowlinson 2008, p.32). When a project has uncertain elements, or a degree of complexity that is not incorporated in the design documents then a procurement approach that integrates design and construction phases is more likely to be considered a viable strategy. If the design documents detail accurately exactly what the client wants built, then it can be felt that there is little to be gained by getting the contractor involved at an early stage to offer advice on constructability. In reality, there is always a grey area in design documentation; however clients select procurement approaches based on a complex array of factors to arrive at what they perceive as the best approach to a particular project (see Walker & Rowlinson 2008, pp.43-54).

2.9.2 Selecting Contractors and Consultants

Wong et al. (2000) found from a survey of UK construction clients, that there was an increasing use of principal selection criteria (PSC) and that ‘lowest-price’ is not now necessarily the client’s principal selection criterion, but rather, the realisation that cost has to be tempered with evaluation of PSC in any attempt to identify value-for-money. Despite this, evaluation criteria themselves largely remain unchanged. This can be seen from the consensus towards contractors’ financial, managerial, technical, health and safety, quality and past performance aspects (Wong et al. 2000). Wong et al. (2000) found nine main PSC categories were identified. These categories are: manpower resources; equipment resources; project management capabilities; geographical location knowledge; location of home office; contractor’s capacity; project execution capabilities; technical-economic analysis; and other relevant PSC (for particular types of work).
Wong, Holt and Cooper (2000) note that public sector clients are more compelled to select the lowest price due to public accountability, although it is not always the only selection criterion. Wong et al. (2000) found that the ‘lowest-price wins’ principle was far from the best-perceived option. Wong, Holt and Cooper (2000) results showed that the UK client side was moving towards a ‘value’ rather than ‘lowest-price’ judgment, consistent with that of Holt et al. (1995); Jennings and Holt (1998). Further Wong et al. (2000) shows that clients want the best possible ‘value’ from contractors and there is a realization that lowest-price does not necessarily achieve this.

In contractor selections, time, cost, and quality parameters are frequently the criteria used to define the desired value (Palaneeswaran et al. 2003). Palaneeswaran, Kumaraswamy and Ng (2003) comment that the client’s focus on best value selection approaches normally relies on the constructor's track record, information such as past performance, past experience, safety records and claims history. Best value depends upon sound “selection” strategies which ensure that the outlined project procurement objectives, including client/user demands are met.

A growing chorus of critics note that the low bid paradigm has not worked (Kashiwagi & Byfield 2002; Gransberg 1997; Gransberg & Ellicott 1996; Scott 1995; Latham 1994; Egan 1998; Wong et al. 2000). It has produced low quality work, adversarial working conditions, a high incidence of contractor-generated change orders, claims, litigation and increased project management costs. Construction cost containment becomes the major focus of effort, and other considerations become secondary (Gransberg & Ellicott 1996).

Palaneeswaran, Kumaraswamy and Ng (2003) identify performance of contractors/consultants, ability to incorporate non-price elements that would add value, as
well as unwelcome claims to compensate for unrealistically low bids as some of the issues involved in low bid approaches that may not lead it to be a good approach economically.

Scholars describe procurement approaches moving away from selecting contractors on the basis of lowest cost towards approaches considering multiple selection criteria (Gransberg 1997; Kashiwagi & Byfield 2002; Palaneeswaran et al. 2003; Wong et al. 2000). Gransberg (1997) describes quantifying non-price criteria (qualitative data) by ranking each category against the other proposals and assigning weighting criteria to each category. Palaneeswaran et al. (2003) describes an approach where non-price criteria are quantified into equivalent dollar values but portray it as a difficult task involving a great deal of subjective assessment.

2.9.3 Purchasing Strategy

Ellram and Carr (1994) propose three distinct types of purchasing strategies ranging from implementing a strategy developed elsewhere in the firm through supporting strategy of other functions within the firm to driving the strategy of the firm (see Table 2.8).

Table 2.8: Comparing Ellram and Carr (1994), Reck and Long (1998) with Cousins et al. (2006)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementing Strategy</td>
<td>Independent</td>
<td>Undeveloped</td>
</tr>
<tr>
<td>Supporting Strategy</td>
<td>Supportive</td>
<td>Capable</td>
</tr>
<tr>
<td>Driving Strategy</td>
<td>Integrative</td>
<td>Strategic</td>
</tr>
</tbody>
</table>

---- indicates where categories between the conceptualisations do not correspond with one another.

Reck and Long (1988) classify purchasing into a four stage typology which evaluates the competitive role of purchasing to any company (see Table 2.8). Cousins, Lawson and Squire (2006) build upon the theoretical typologies developed by Ellram and Carr (1994) and Reck
and Long (1998) by surveying 151 manufacturing firms using a survey that comprised a mixture of pre-existing scales from prior research assessing involvement in strategic planning, internal integration; status and purchasing skills. Cousins et al. (2006) found that purchasing configurations vary along four dimensions; strategic planning, status, internal integration and skills level (see Table 2.8), concluding that three of the four categories match well with three of the categories proposed by Reck and Long (1998). However, Cousins et al. (2006) category of celebrity purchaser does not fit with Reck and Long’s (1998) and refers to purchasers who are likely to have high levels of status in the eyes of top managers but are less skilled and knowledgeable when compared with the other purchasing categories. Cousins et al. (2006) postulate that celebrity purchasers may reflect a purchasing function which concentrates on hard negotiations with many suppliers and is assessed based on the price savings achieved. Thus, through delivering savings, the function is seen as valuable, but they have contributed little to developing the purchasing function within the organisation.

2.9.3.1 Organisational Client Characteristics

Kelly et al. (2004, pp.156-159) distinguish between clients based on their level of knowledge of the industry, how the asset will be used in relation to organisational strategy, the volume of work and the regularity with which they are procuring. However, Kelly et al. (2004, p.150) suggest that the public sector split into knowledgeable and less knowledgeable raises certain issues. For example, a small government science agency that has occupied its buildings, which are now out of date, for 30 years, is likely to be an infrequent procurer. Kelly et al. (2004, p.158) suggests that a fourth dimension of client characteristics is the economic demand place into the industry in terms of volume, frequency and regularity, coupled with the extent to which standardisation may exist from project to project.
2.9.3.2 Individual characteristics

Murray (2002) undertook a case study of a government purchasing unit and presents five roles that purchasing officers have taken as process experts to assist in the achievement of value-for-money.

- Researchers – identify and review best practice, then articulate as guidance notes that others can apply
- Detectives – search for evidence to ensure that best value for money is obtained
- Teachers – provide specific, targeted training aimed at improving understanding and practice
- Doctors – provide a surgery for those who meet with specific problems and require ‘customised’ answers to comparatively unique problems
- Architects – design the bespoke process that others subsequently implement with varying levels of ‘hands on’ support.

Murray (2002) believes that it is clear that delivering value for money is accepted as the primary UK public sector purchasing objective. However, Murray (2002) notes that it is surprising that for a strategic objective of public policy, there have been no clear guidelines developed for operationalising this, somewhat amorphous concept, in a practical sense. National Audit Office (1999, p.6; cited in Murray (2002)) articulated value for money principles for procurement as: have a procurement strategy; plan early and agree requirements; actively manage contracts; think about supply chain; seek continuous improvement; and monitor performance.

Murray (2002) comments that these add little to improving purchasing’s strategic contribution. Telgen and Sitar (2001; cited in Murray 2002) have highlighted the switch of purchasing professionals’ focus from the objectives of cost savings and efficiency to that of the creation of value. Such repositioning creates a need to question how a twenty-first century purchasing unit should seek to contribute to the achievement of best value for money.
Fundamentally their research (Telgen & Sitar, 2001; cited in Murray 2002) indicated that the stage of maturity of the purchasing function is a critical factor affecting the value added potential.

The APCC (2008) report titled Building Government Procurement Capabilities outlines aspirational capability standards for procurement staff working within Government. The report articulates a three tiered taxonomy of people working within Government in procurement (APCC 2008) varying according to their level of procurement responsibilities:

- Buyers – easily secured goods and services at low value and low risk, often purchased by contracts established by others.
- Procurement practitioners - specialising in procurement as a major function of their position. The focus is on compliance with procurement policy and operational aspects of developing and managing contracts efficiently and effectively.
- Procurement professionals - individuals who specialise in strategic procurement, involved in tactical and strategic projects. They exercise responsibilities that focus on delivering best value-for-money outcomes; lead project teams in the development and management of complex procurements.

2.10 TRANSACTION COST ECONOMICS

Williamson’s (1975; 1985) research built upon Coase’s (1937) seminal work on the boundary of the firm and focused on the contract as the key element in transactions involving the transfer of goods or a service between separate parties. The focus is obtaining cost efficiencies through the governance structures employed by firms (Williamson 1975; Williamson 1985; Poppo & Zenger 1998). The extent to which firms prefer to make or buy a product or service and engage in arms length or relational contracting determines the choice between hierarchical governance, market based exchanges or strategic alliances (Walker &
Weber 1984; Williamson 1981; both cited in Memeli, Chrisman, Chua, Chang, & Kellermanns forthcoming). As a result, the key decision is whether to internalise transactions and create hierarchy within an organisation or whether to transact via markets (Williamson 2005).

Walker, Stark, Arlt and Rowlinson (2008) state that at the heart of any procurement is a make-or-buy decision. When deciding to outsource, a firm will contract with another organisation and there will be costs involved in this transaction (Fill & Visser 2002). Williamson (1985) distinguishes between contracting costs incurred both before and after reaching a contractual agreement. Ex ante are contracting costs incurred before reaching a contractual agreement include drafting, negotiation and safeguarding of an agreement, whilst ex post are contracting costs incurred post agreement and include maladaptation, correcting misalignments, set up, operating and bonding costs (Memili et al. forthcoming).

Williamson (1985; 1991) describes concepts influencing governance decisions as bounded rationality, opportunism, asset specificity, and trust and risk preferences. Parker and Harley (2003) describe bounded rationality as buyers and sellers making rational decisions but under conditions of incomplete information (information asymmetry). Williamson (1985) comments that opportunism refers to the incomplete disclosure of information. Williamson (1985) notes that opportunism from agents where contracts may be incomplete may take the form of deception with regard to the ability of an agent to fulfil the terms of a contract or the willingness to expend the required effort (Memili et al. forthcoming).

Chiles and McMackin (1996) note that because of behavioural uncertainty, opportunism can never be ruled out, which means management’s risk preferences also influence make or buy governance decisions. Chiles and McMackin (1996) note that these risk preferences develop
based on personal and organisational factors. Memili et al. (forthcoming) comment that firms with greater risk aversion are more likely to select hierarchical governance than firms with lower risk aversion.

Williamson (1981) contends that asset specificity, in the form of site specificity, physical asset specificity and human asset specificity, is the most important dimension for describing transactions. Once a public sector client has appointed a contractor, the parties will be in an exchange relationship for a considerable period of time, which means that the supplier is locked into the transaction, and the public sector client cannot turn to alternative sources of supply (Williamson 1981). High asset specificity leaves a firm vulnerable to opportunism, as there are few other competitors capable of providing the service and uses for the asset (Williamson 1975; 1985). Memili et al. (forthcoming) state that when asset specificity is high the cost of governing transactions through market mechanisms may exceed the benefits of flexibility and reductions in capital investments and overhead through outsourcing. As a result, where these cases arise it is expected that hierarchy will be the preferred governance structure instead of outsourcing. However, this assumption is not supported by evidence in the public sector that has increasingly outsourced supply of many assets with high specificity, of which construction is a prime example.

2.10.1 TCE and New Public Management

The introduction of NPM was based on the belief in market forms of governance (Hood 1995; Gray & Jenkins 1995) and was also used by politicians to redefine the boundaries of government, thereby reconceptualising what is a legitimate activity for governments to undertake, and what is not (Pollitt 1993, p.48). For Government, the consideration of Williamson’s (1979) transaction costs in the public sector largely became the consideration of whether public agencies produce themselves (make) or contract out (buy) (O’Flynn 2007).
Government was encouraged to match its transactions to its government structures (O’Flynn 2007). O’Flynn (2007) states that:

The most efficient structure is that which best matches specific transaction characteristics (i.e. the levels of frequency and asset specificity) with governance structures allowing for economising on the costs associated with bounded rationality, opportunism, and asset specificity; and an overall reduction in the cost of transacting.

There is evidence to support the view that competitive contracting regimes have resulted in increased transaction costs due to higher costs of contract preparation, monitoring and enforcement (Entwistle & Martin 2005; O’Flynn & Alford 2005; both cited in O’Flynn 2007). Parker and Vaidya (2000; cited in Parker & Hartley 2003) believe that sourcing decisions should not be seen as a function of considering transaction costs and economies of scale, but rather should take account of costs, internal capabilities and strategic goals. Figure 2.3 summarises the make or buy decision integrating the transaction costs perspective with that of the resource-based perspective (Parker & Hartley 2003).

**Figure 2.3: Transaction costs versus internal capabilities in the ‘make or buy’ decision**

<table>
<thead>
<tr>
<th>High Market Transaction Costs</th>
<th>?</th>
<th>Make</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy</td>
<td>?</td>
<td>Low</td>
</tr>
<tr>
<td>Low Internal capability</td>
<td>High</td>
<td></td>
</tr>
</tbody>
</table>

Source: Parker and Hartley (2003)
2.10.2 The Nature of Transaction Costs in Construction

In the construction industry, transaction costs are referred to as the cost of tendering or tendering costs. Where contract variation claims are submitted to cover grey areas in contracts, it has been suggested that contractors submit low bids to win a project and then submit variations as a means of making a profit. The contract variation game has been a staple of the industry for a long time. Walker and Hampson (2003, p.14) note that the main criticism of the traditional lump sum approach has been that it invites a confrontational approach over disputes arising out of contract variations and what might be a fair price for these.

Transaction costs associated with preparing tender documentation and submitting bids for construction projects occur for both the public sector client and for the contractors and consultants bidding for the project. As the successful lead contractor subcontracts components of the project, additional tendering costs are incurred by the lead contractor in preparing tenders and assessing bids from subcontractors, whilst tendering costs are incurred by subcontractors down the supply chain bidding on those projects.

The Giles NSW Royal Commission (1992) into Productivity in the Building Industry in NSW found that there were anti-competitive and collusive tendering practices amongst bidders including the surreptitious receipt and payment of special and unsuccessful tenderers’ fees. Further, the Giles NSW Royal Commission (1992) found that the cost of tendering on the contractor side is significant. Whilst there has been interest in quantifying tendering costs on the supply side, so far little empirical data has been presented. Hughes, Hillebrandt, Lingard and Greenwood (2000) note that costs associated with tendering are frequently quoted as \( \frac{1}{2} \) to 1\%, and 2-3\% on PPP projects, although there is little empirical basis to support this assertion. For a relatively complex $20 million infrastructure project where the design and
schedule of quantities is provided, it has been estimated that the cost of tendering by lead
contractors is in the region of 0.5% value of the contract for each contractor tendering
(Dalrymple, Boxer & Staples 2006). Thus, in a case where there are six lead contractors
bidding the total cost is 3% of the contract’s value, or $600K. This does not include the
transaction costs to the subcontractors and suppliers further down the chain of supply.

In some respects this inability to quantify tendering costs on the supply side stems from the
sensitive commercial in-confidence nature of proposal development from the contractor’s
perspective (Hughes et al. 2002; Dalrymple, Boxer & Staples 2006).

Palaneeswaran et al. (2003) reports that pre-bid contractor selection tasks such as
certification, prequalification, short listing to an optimum number of bidders/proposers are
potentially significant in contributing to the ultimate best value.

There appears to have been little research that seeks to understand either quantitatively or
qualitatively the transaction costs incurred on the client side, within Governments, when
tendering projects. There appears to have been little consideration given to the costs incurred
on the client side incorporating the preparation and assessment of tenders and the
administration of prequalification or supplier registers.

2.11 SUPPLY MANAGEMENT

Supply Management is a subset of the broader Supply Chain Management discipline. It
focuses on the buying, purchasing and procurement activities. Kraljic (1983) argues that
purchasing needs to be become supply management which is presented as making the
function more integrated with the overall business systems.
2.11.1 The Construction Supply Chain

Currently, the public sector in Australia undertakes little of its construction in-house and instead engages with the marketplace to harness the necessary skills and expertise. Dainty et al. (2001) describe the construction supply chain as complex, having a main contractor at the centre of the hub, with links to the client, but then many subcontractors who are generally small and medium-sized enterprises (SMEs).

As at the May quarter of 2007 the Australian construction industry employed some 937,300 people (9.0% of the Australian workforce) and contributed 6.7% to Gross Domestic Product (GDP) (ABS 2008). The ABS (2008) describes the public sector as playing a key role in initiating and undertaking engineering construction activity (roads, bridges, water and sewerage, etc.), and building activity relating to health and education.

The supply chain is fragmented, often featuring a principal designer architect or engineer, a lead contractor and then a huge variety of SMEs that do most of the work on site. ABS (2008) statistics show that the construction industry has the second highest percentage of workers engaged on an 'own account' basis and constituted 22.5% (210,600) of persons employed in construction in May 2007 compared with 8.8% for all industries. It has been estimated that SMEs make up 99% of firms in the industry (ABS 2010).

The importance of the construction supply chain in creating value for public sector clients cannot be overstated (Fernie & Thorpe 2007; Blayse & Manley 2004). Due to the need for transparency, public sector construction projects have traditionally been subject to an open tender process and projects are awarded by clients on the basis of lowest cost, in which the contractor submitting the lowest bid wins the job (Palaneeswaran, Kumaraswamy & Ng 2003). However, rarely does the lowest bid end up being the lowest cost (Gransberg 1997;
Gransberg & Ellicott 1996) with quality issues such as cost and time overruns, and defect issues often occurring (Walker & Hampson 2003). Further, this approach has frequently resulted in an adversarial and fractured working relationship between the client and contractor (Latham 1994; Kumaraswamy & Dulaimi 2001; Dainty, Briscoe & Millet 2001). Both the project-oriented processes of construction and the fragmented nature of the subcontract industry have contributed to these tensions (Dalrymple & Bryar 2006).

The public sector is described as having a vital role to play in leading the development of a more sophisticated and demanding customer base for construction (Egan 1998; Latham 1994; Kenley, London & Watson 2000). However, findings from the UK indicate that the relationship between government clients and building contractors was perceived to be rigid, adversarial, and contained wasteful duplication (Holt & Rowe 2000). Respondents felt leadership was lacking from the public sector client side. The literature in the construction supply chain management area calls for improved relationships between team members in project delivery systems (Walker & Rowlinson 2008).

Holt and Rowe (2000) investigated the supply side experience of working with government to ascertain impressions of the UK government departments as clients and to determine how their role can be improved. Respondents acknowledged that the government was making moves to improve construction procurement but they had yet to be fully realised. All respondents felt the government client could speed up the process of procurement and production and reduce down time (Holt & Rowe 2000). Holt and Graves (2001) conclude that there needs to be greater ownership of projects from public sector clients, greater risk sharing with suppliers, and that value approaches to procurement have a long way to go.
2.11.2 Selecting Subcontractors

Dainty et al. (2001) interviewed members of the construction supply chain (contractors, subcontractors and suppliers) for their perspective on the project delivery process. They found that the primary criterion in subcontractor appointments focused on cost issues rather than identifying the added value that a supplier could offer. Subcontractors were critical of contractors for accepting lowest price even when they knew there had been an error by the subcontractors, and noted the adversarial relationships created through the competitive tendering process resulted in serious problems with regard to payments in the construction phase of projects (Dainty et al. 2001). Other issues were found to be the scheduling of work, lack of IT integration between supply chain parties, the challenge of managing main contractors: payment, involvement at an early stage, expecting quotes on complex work quickly, and lack of knowledge exchange (Dainty et al. 2001). Dainty et al. (2001) conclude that there is general mistrust within the SME companies that make up the construction supply chain and that if significant performance improvements are to be realised the benefits of supply chain management must be extolled to SMEs to engender their trust.

2.11.3 Supplier Development

Krause (1999), Krause, Scannell and Calantone (2000) defines supplier development as:

Any effort by a buying firm with a supplier to improve the supplier’s performance and/or capabilities and to meet the buying firm’s short and/or long term supply needs.

Krause (1999) explores the antecedents to improving suppliers by surveying 1504 purchasing managers. Krause (1999) concludes that cultivating top management support for supplier initiatives can make internal perspectives of supplier relationships more strategic. Further, that effective communication between clients and suppliers, incorporating both formal and informal information, addresses service performance (Krause 1999). Supplier’s commitment
to strategic relationships can be fostered by clients communicating the need for continuous improvement and taking joint-ownership of supply problems with suppliers (Krause 1999).

Fostering this type of attitude within the buying firm may be the first step to dedication of the buying firm’s resources to help the supplier (Krause 1999). Interestingly, relationship continuity was not an important predictor of the buying firm’s involvement in supplier development (Krause 1999). Cousins et al. (2008, pp.75-87) state that supplier development activities may range from limited to extensive. They describe limited efforts as including informal supplier evaluation and performance improvement requests, whilst extensive might include training the supplier’s personnel and even investment in the supplier’s operations. These practices are well established in the auto industry (Cousins et al. 2008, p.76). Cousins et al. (2008) contend that one of the advantages of supplier development is that buyer pressure can act as a catalyst for process change with suppliers. Krause, Scannell and Calantone (2000) present four strategies of supplier development; 1) competitive pressure, 2) evaluation and certification systems, 3) incentives and 4) direct involvement. Cousins et al. (2008) note that the first three of Krause et al.’s (2000) strategies involve using external markets to drive supplier development improvements. Direct involvement is an internalised strategy involving direct investment by the buyer in their supplier’s activities (Cousins et al. 2008). Krause et al. (2000) found that direct involvement was the most effective strategy, although incentives and supplier evaluation and assessment provide a facilitating role in driving the success of this strategy.

2.12 CONCLUSIONS

This section draws together conclusions on the literature reviewed in the areas of public value, infrastructure procurement; value-for-money; policy by-products; supply chain management; and transaction cost economics. These conclusions inform the theoretical framework and research questions outlined in the Chapter 3.
There has been a growing interest in Public Value approaches to managing in the public sector (Moore 1994; Moore 1995; Bozeman 2002; Kelly et al. 2002; Smith 2004; Smith et al. 2004; Stoker 2006; O’Flynn 2007; Alford & Hughes 2007; Rhodes & Wanna 2007; Rhodes & Wanna 2008; Alford 2008; Meynhardt 2009; Bozeman 2008; Jorgensen & Bozeman 2007). Public Value does not require that the public sector merely imitate the private sector but it provides perspective on the public sector which is both post-bureaucratic (Public Administration) and post-competitive (New Public Management) (Smith 2004; O’Flynn 2007; Stoker 2006; Luke et al. 2008). It views both the elected representatives (politicians) and public sector managers as being involved in defining and creating public value. O’Flynn (2007) describes the public value approach as entailing considerable change as it provides a new way to think about government activity, policy-making and service delivery. The focus of public value seems to be on encouraging innovation in the public sector, however politics is risk averse and may impede innovation, impose constraints on managers and may not encourage the quest for public value (Rhodes & Wanna 2007; Potts 2009).

Public value related approaches under the umbrella term of best value have been used in England, Scotland and Victoria, Australia in a local government context. Their use has shown that they require a non-prescriptive, flexible approach. They cannot be prescriptive as this is contrary to the spirit of community consultation and negotiating the meaning of value locally.

With the suggestion that the practice of management in the public sector is, or has, moved into a post-NPM era there has been little empirical evidence that explores this explicitly. There is considerable debate as to whether public value is an appropriate approach in the Australian Westminster based system (Alford & Hughes 2007; Rhodes & Wanna 2007; Rhodes & Wanna 2008; Alford 2008; Alford & O’Flynn 2009) but again little empirical data that explores this issue.
Overall the literature is somewhat devoid of qualitative research that focuses on how public sector clients procure from the perspective of those who procured. From the literature surveyed, the following five themes appeared to be elements influencing the value equation when procuring infrastructure projects in the public sector:

- Procurement of Infrastructure
- Value-for-Money
- Policy by-products
- Supply Chain Management
- Transaction Costs

2.12.1 Procurement of Infrastructure

There is a great deal of evidence in the literature that best value, or value-for-money in Construction Project Procurement is important (Kenley et al. 2000; Jennings & Holt 1998; Tookey et al. 2001; Holt et al. 1995; Palaneeswaran et al. 2003; Wong et al. 2000; Love et al. 2008; Egan 1998; Latham 1994; Walraven & de Vries 2009; Kashiwagi & Byfield 2002; Gransberg; Scott 1995; Kelly et al. 2004; Morledge et al. 2006, pp.51-52). The way in which procurement is undertaken shapes any value that can be created. There is a gap in the literature understanding how infrastructure procurement is undertaken operationally by public sector clients. Hence, the research question that emanates from this literature is:

Research Question One: How do Australian State Governments procure infrastructure projects?

The use of prequalification approaches and the consideration of non-price criteria as part of the selection process has been broadly advocated in the literature (Waara 2004; Jennings & Holt 1998). Similarly, there are theoretical papers advocating value based contractor selection approaches as the way forward for construction procurement and proposing models that will aid the decision making process of selecting contractors (Palaneeswaran et al. 2003;
Wong, Holt & Cooper 2000; Chan, Yung, Lam, Tam & Cheung 2001). However, there is very little empirical evidence based on testing the application of these models. In addition, there has also been a move towards more non-traditional procurement approaches founded more on relationship based principles (Walker & Hamson 2003), however Egan (2008) comments that many parts of the industry have ignored the ‘Rethinking Construction’ recommendations and most public sector clients still run lowest cost tendering. There is a gap in the literature as to what selection criteria public sector clients are using. These issues of selection criteria, relationship based and value based contracting generate the following research question and associated research question:

Research Question Three: What selection criteria are used by Australian State Governments when selecting both building consultants and contractors?

Research Question Three (a): Are non-price criteria used?

2.12.2 Value-for-money

Much of the literature equates a definition of value with either competitive advantage (Porter 1985) or quality (Feigenbaum 1991, p.9; Juran & Gryna 1988, 35 E.6). Juran and Gryna (1988, 35 E.6) acknowledged the financial approach by viewing value as being equal to quality divided by cost (value = quality / cost). Walters and Lancaster (1999) describe value as a utility combination of benefits delivered to the customer less the total costs of acquiring the delivered benefits. Value-for-money has clearly been of growing interest to those in the public sector as lowest cost procurement approaches have been abandoned in favour of value based approaches in the UK and Victoria, Australia. Value-for-money has been found to be a primary driver of procurement activities in the UK public sector (Murray 2001). However, in a public sector infrastructure procurement context there is little in the literature that seeks to understand exactly what value-for-money means to the public sector client side of the
construction supply chain. The review of this literature leads to one main, and one associated research question:

Research Question Two: What does value-for-money mean to Australian State Governments when procuring infrastructure projects?

Research Question Two (a): To what extent is value-for-money an objective for Australian State Governments when procuring infrastructure projects?

It would seem that whatever definition of value-for-money is employed will have a profound impact on the way in which an organisation procures

2.12.3 Policy by-products

Procurement of infrastructure is an activity that presents a significant opportunity for the public sector to create public value as defined by Moore (1995) both via the assets procured and the manner in which it is done. Graycar (2007) postulates that it is policy by-products that often have the biggest impact in the public sector environment. Under this type of logic a public sector procurement approach would seek to create additional public value through identifying policy by-products as part of the procurement process. Further, the alignment of Government wide strategies and policy objectives with public procurement activities seem to be an important part of creating public value and receive little coverage in the literature. The issue of the aligning policy objectives with infrastructure procurement formed the basis of the following research question:

Research Question Four: How is infrastructure procurement linked to Australian State Government priorities?

The recognition and pursuit of policy by-products through the procurement process would influence the manner in which the public sector procures. Cousins et al. (2006) believe that the skills and experience of people procuring are important in terms of integrating the purchasing function with the activities of the firm and making it more strategic. Murray
(2001) believes there is a gap between the contribution procurement is currently making to strategy in the public sector and its potential contribution.

2.12.4 Supply Chain Management

Australian State Governments operate largely on the basis of an outsourced model of construction (Furneaux, Brown & Allan 2008). Consequently, significant value may be created on public projects by the supply chain. The construction supply chain is widely acknowledged as being fragmented, with much of the work performed on site by very small subcontracting businesses, and almost entirely predicated on price based competition, which has led to litigious and adversarial working relationships.

The pursuit of best value requires the elimination of unnecessary waste in the supply chain and recognises that if the construction supply chain is performing sub-optimally then a public sector client cannot be procuring best value. For public sector clients, the need for transparency and accountability underpins the procurement process. The manner in which the public sector interacts with its supply chain via the tender process has caused Dalrymple, Boxer and Staples (2006) to wonder if the procurement process adds costs to both the client and the supply chain without proportionate addition of value.

In recent times D&C, partnering, alliancing and various types of hybrid approaches have sought to integrate the design and construction disciplines by facilitating communication earlier in the process. The aim of these interactions is to investigate what, if any, constructability benefits can be achieved from that dialogue. However, even when non-traditional approaches are used there is still the suggestion that lead contractors act as a barrier for the rest of the supply chain experiencing better working arrangements (Dainty et al. 2001). There is little empirical research that seeks to understand construction project
delivery from the perspective of supply chain management. This leads the research to ask the following major research question and three underlying research questions:

Research Question Five: How is Supply Chain Management undertaken by Australian State Governments when procuring infrastructure projects?

Research Question Five (a): How are lead contractors and sub-contractors selected?

Research Question Five (b): How is performance feedback given to lead contractors and sub-contractors?

Research Question Five (c): How does performance affect future contract/project opportunities?

2.12.5 Tendering Costs

Anecdotal evidence suggests that lead contractors bemoan the costs involved with preparing tenders on large projects. Given the historically adversarial relationships in much of the construction supply chain, opportunism and profiteering from contract variation has been commonplace (Fisher & Morledge 2002, pp.210-213; Bower 2000). There is little in the literature focusing on the transaction costs involved with public sector procurement of infrastructure. If public sector clients are procuring construction projects in a way that unnecessarily wastes supplier resources, then it is unlikely they will be obtaining best value. There is also little evidence in the literature that public sector clients consider the transaction costs for them arising from the tendering and prequalification stages. The transaction cost economics literature has influenced the development of research questions one, three and five.

The five major themes emphasised in this conclusions section have heavily influenced the development of the research questions (see Figure 3.1) and the theoretical model (see Figure 3.2) outlined in Chapter 3. Chapter 3 describes the methodology that is employed to address and answer the research questions.
CHAPTER 3 – THEORETICAL FOUNDATION AND RESEARCH METHODS

3.1 INTRODUCTION

The purpose of this chapter is to provide an overview of the research in terms of theoretical framework, paradigmatic approach, the methodology and the methods of data collection adopted. Section 3.2 describes the theoretical framework. Section 3.3 justifies the paradigmatic approach adopted and Section 3.4 explains the case study methodology employed. Section 3.5 explains the methods of data collection including the semi-structured interview approach and document analysis. Section 3.6 highlights issues of unit of analysis, trustworthiness, triangulation, ethics and the data analysis techniques used. Section 3.7 presents conclusions about the approach adopted and an awareness of the limitations of this approach.

An extensive review of the multi-disciplinary literature in the areas of public sector management, construction management, transaction cost economics and supply management has led to the emergence for this study, of the following five research questions and five sub-questions. Figure 3.1 highlights the literature streams from which specific research questions emerged.
**Theoretical Themes**

- Construction Management
- Public Sector Management
- Transaction Cost Economics
- Supply Chain Management

**Research Questions**

Q1: How do Australian State Governments procure infrastructure projects?

Q2: What does Value-for-Money mean to Australian State Governments when procuring infrastructure projects?
   - a) To what extent is purchasing Value-for-Money an objective for public (project) managers procuring infrastructure projects?

Q3: What selection criteria are used by Australian State Governments when selecting both building consultants and contractors?
   - a) Are non-price criteria used?

Q4: How is infrastructure procurement linked to Australian State Government priorities?

Q5: How is Supply Chain Management undertaken by Australian State Governments when procuring infrastructure projects?
   - a) How are lead contractors and sub-contractors selected?
   - b) How is performance feedback given to lead contractors and sub-contractors?
   - c) Does performance affect future work opportunities?
3.2 THEORETICAL FRAMEWORK

Figure 3.2 presents the Theoretical Framework guiding the research and illustrates that there were a number of elements identified in the literature that appeared to be important when considering the Procurement of Infrastructure Projects in the Public Sector. Figure 3.3 highlights the links between the research questions and the theoretical framework. On the right hand side of the theoretical framework is a continuum which ranges from the lowest cost procurement approach at the bottom to a public value yielding approach at the top. A lowest cost approach to procurement will still create public value as the facility will enable a Government Department to provide goods and services. However, at the top of the continuum the public value approach recognises that the procurement process has the potential to create additional public value as well as just creating a physical facility. It was expected that the approaches used will vary along the continuum somewhat, depending on four factors: value-for-money, policy objectives, tendering costs, and supply chain management.

3.2.1 Definition of value-for-money

A definition of value-for-money focused solely in terms of lowest price predicates a procurement approach based on lowest cost tendering. A procurement approach based on a broader definition of value-for-money might consider factors other than price, and may be focused on creating additional benefits for communities, that are in keeping with Government policy intents. Those employing a broader definition of value-for-money are more likely to consider non-price criteria in the selection process, and might consider linking procurement activities to Government priorities identified in strategic plans; or even thinking across agencies by adopting a whole-of-government approach.
3.2.2 Policy Objectives

Policy objectives refer to the extent to which Government views the procurement process as an opportunity to create additional value. By investing in infrastructure projects, Government is contributing to achieving policy intents within particular Government Department domains. For example, by building a school they are contributing to policy domains within a Department of Education. However, when procuring construction projects Government also has the opportunity to create policy by-products via the procurement process, so additional value can be created via policy by-products in the procurement process, which might for example involve rewarding contractors who train apprentices or have good OH&S track records, or adapting designs so that facilities can be used for community purposes and activities when not required by the school.

Best value in Public Sector construction project procurement is achieved when the outcomes are at worst neutral in their effect on other government policy intents. Clearly the intention of Best Value Public Sector Procurement is to not undermine any other government policy intentions. For example, Government concern with apprentice training is often focused on skills development, and the concern that trades people will be in short supply as a result of demographic change (Schubert 2005; Colebatch 2005). The Victorian State Government outlines ‘Vocational Education and Training’ policy intents in the Maintaining the Advantage: Skilled Victorians (2006) report. The report details $241.47 million investment in the Vocational Education and Training Sector that will employ 5,500 apprentices and trainees. A procurement approach based on lowest cost tendering will be silent on, and not address, apprenticeships and training. It may also have a negative impact on Government policy intents by rewarding contractors who do not train apprentices.
3.2.3 Supply Chain Management

This element of the Framework refers to the approach taken to supply chain management. At the top of the continuum are more relationship based, non-traditional approaches to procurement and managing the supply chain, recognising that the Government will have to be prepared to spend a little more in managing the supply chain in order to achieve outcomes it is satisfied with. At the opposite end of the continuum is an approach in which the supply chain is not actively managed, which is more in keeping with a lowest cost tendering approach, pre-Toyota Just-In-Time (JIT), and the traditional approach to construction procurement.

3.2.4 Tendering Costs - Transaction Cost Economics

At the top of the Framework are the Government agencies that target projects to appropriate contractors rather than merely inviting a large numbers of bids from contractors without consideration of what value, if any, such an approach adds for them as clients. At the bottom are Government agencies that invite bids from large numbers of contractors and both sides waste considerable resources in the tendering process. For industry, these costs are incurred in the preparation of bids, while for Government they occur in evaluating and assessing the bids received. In the construction industry, the cost of tendering is not well understood but both sides agree that efforts should be taken to optimise this cost on both the client and contractor side. Tendering processes that add undue costs without yielding commensurate value are an impediment to procuring best value for Government clients.
Figure 3.2: Theoretical Framework – Public Value in Public Sector Infrastructure Procurement
Figure 3.3: Linking Theoretical Framework to Research Questions
3.3 PARADIGM

The general approach to the research is known as the research paradigm. Kuhn (1962) proposed the concept of the paradigm as the overarching set of beliefs a social scientist takes (Crotty 1998, pp.34-35). A paradigm is the philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria (Crotty, 1998, p.8). There has been ongoing debate in the literature as to the number of paradigms. Two broad overarching research paradigms or philosophies are proposed; positivistic (quantitative) and interpretive (qualitative) (Neuman, 1997; Cavana et al. 2001), which Collis and Hussey (2003) call the phenomenological paradigm. The qualitative paradigm is more subjective in nature and involves seeking to understand the phenomenon being investigated from the perspective of the human participants (Creswell & Plano Clark 2007).

Qualitative researchers have emphasised the need to understand processes at the organisational level and have argued that survey-based methods are unable to probe these processes effectively (Stake 1995 cited in Smith 2000).

Creswell and Plano Clark (2007, pp.19-23) further articulates four paradigms that inform qualitative research; post-positivism, social constructivism, advocacy/participatory and pragmatism.

3.3.1 Justification

From the research questions to which answers are sought, the choice of the social constructivist paradigm has been adopted. This research is seeking to socially construct meaning via semi-structured interviews with project managers. It is seeking to understand Australian State Government infrastructure procurement through the experience of project managers.
This research does not start with a theoretical hypothesis that is to be tested. Creswell and Plano Clark (2007, p.21) comments that constructivist researchers generate or inductively develop a theory or pattern of meaning. Theory building in qualitative research is commonly associated with grounded theory, where theory emerges and is derived from empirical data (Glaser 1992). Layder (1998, p.169) opines that grounded theory privileges data over prior theory, and that adaptive theory simultaneously privileges data and theory. Layder (1998) posits that it is the importance of the relationship between prior theory and data collection and analysis that gives adaptive theory a distinctive stamp. In this study, adaptive theory is being used, where existing theoretical ideas and models in the discipline areas of public sector management, construction management, transaction cost economics and supply chain management have been used to inform and guide the research questions and focus (as outlined in the Theoretical Framework see Figure 3.2).

It was felt that in order to understand the complex process that is public sector infrastructure procurement, the researcher needed to be immersed in the area to enable the research to address valid questions. The researcher also had previous research experience in the area that would have made using a pure emergent approach to grounded theory somewhat unrealistic (Glaser 1992).

3.4 METHODOLOGY

Research methodology refers to the procedural framework within which the research is conducted. There are many factors to be considered when choosing an appropriate research methodology, with the topic to be researched and the specific research questions being the primary drivers.
Yin (2003, p.13) states that a case study is an empirical inquiry that:

Investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly defined.

This research is using a case study methodology. The broad nature of the research, combined with the exploratory focus of the research questions justifies the adoption of a multiple case study approach as the chosen research strategy (Eisenhardt, 1989; Creswell 1998; Smith 2000; Yin, 2003).

Smith (2000) comments that a theoretical model may be developed which directs the data gathering process. However, other concepts may be important within the cases studied that might emerge from studying contextual issues related to the cases. Smith (2000) contends that a strength of the case study approach is its relatively open-ended nature which allows both concepts to be investigated and concepts to emerge from the data. The case study process is inductive, working from data to a theory that can explain the processes observed (Funnell 1996 cited in Smith 2000). Although, as explained with employing adaptive theory, case study does not necessarily start with a blank theoretical slate of the Glaser (1992) grounded theory approach. Yin (2003, p.13-14) comments that case study inquiry benefits from the prior development of theoretical propositions to guide the research.

Jensen and Rodgers (2001) advocate the use of case studies in Public Administration because they satisfy the recognised need for conditional findings and in-depth understanding of cause and effect relationships that other methodologies find difficult to achieve. Woodside and Wilson (2003) comment that the focus of case study research is on developing a deep understanding of the actors, interactions, sentiments and behaviours occurring for specific processes.
3.4.1 Justification - Multiple Case Studies

This research adopted a multiple case study design in order to examine the procurement practices of Australian State Government organisations. Cases in the form of roads and building procurement agencies were selected in order to examine differences that arose out of the differing contextual conditions. It also could have used data collection approaches more frequently associated with quantitative methodologies perhaps employing a survey approach which could have been distributed more widely, but perhaps not probed quite as deeply into the identified issues from the literature. This research focused on the practice of procurement by project managers and it was thought a survey would be more likely to reflect the project manager’s perception of government procurement policy.

Yin (2003, p.53) encourages the use of multiple case studies believing that single case designs are vulnerable by having only one source of data. Given the contexts of each of the multiple cases are likely to differ to some extent, if the conclusions drawn are common then the external generalisability is expanded as a result of using multiple cases (Eisenhardt 1989). Yin (2003) suggests that the results from a multiple case study approach are more robust and compelling.

As Creswell and Plano Clark (2007, p.76) notes, selecting cases requires the researcher to establish a rationale for the purposeful sampling and selecting of cases and gathering information about cases. For case study research, the selection of cases is done using a replication logic for sampling rather than a random approach, as case studies should be treated like multiple experiments and not like multiple respondents to a survey (Yin 2003). Yin’s (2003) replication logic suggests that each case must be selected so that it either: predicts similar results which would result in literal replication; or predicts contrasting results for predictable reasons which would result in theoretical replication.
All ten of the procurement agency cases were selected using literal replication logic as there was no pre-known reason why the results between the cases would be different.

3.5 DATA COLLECTION

When designing research, it is often necessary to consider other factors, such as access to participants, response rates, or ethical issues. These factors often shape the research methods employed and the challenge is to optimise the research design to account for these factors. Crotty (1998, p.6) states that methods are the activities used to gather and analyse research data. Research data can be collected in many different ways and should provide insight into the issue or problem being investigated. It is necessary to choose a data collection method that has synergy with the assumptions of knowledge embedded in the research paradigm selected. It is also crucial to select a data collection method that will shed light on the issue or problem in question.

Stake (1995; 2006) views a case study not as a methodology but as a frame within which many approaches to collecting data can be used. Whilst the data collected are usually qualitative, quantitative approaches can be used, or a mixed method approach can be used (Smith 2000). Smith (2000) comments that, frequently, case study data collection involves interviews with a variety of informants in an organisation as well as the collection of relevant documentary evidence.

This research adopts the constructivism paradigm and a multiple case study methodology. The focus is on exploring and describing phenomena rather than testing hypotheses. It uses interviews, which are among the most widely used approach in qualitative methods.
Richards and Morse (2007, p.107) prefer to describe the process of obtaining qualitative data as making data rather than collecting or gathering. Whilst acknowledging the Richards and Morse (2007, p.107) perspective that static data does not exist waiting to be collected and is instead made or created by the research interacting with participants/informants the researchers own personal preference is somewhat post-positivist to talk in terms of data collection.

Data collection was organised over three main phases: 1) Telephone based semi-structure interviews; 2) Semi-structured face-to-face in depth interviews; 3) Document analysis.

3.5.1 **Telephone based semi-structured interviews**

Cavana et al. (2001) suggest that telephone interviews are best conducted when it is more convenient for both parties, are of shorter duration and the respondents are spread over a wide geographical area. Such was the situation for the first phase of the data gathering. The telephone interviews were in the range of five to twenty minutes and the respondents came from a variety of locations (Five Australian States).

During November and December of 2007 ten construction procurement agencies were identified as potential case study sites and contacted by telephone and short semi-structured interviews were conducted. These interviews focused on operational aspects of procurement within the organisations in terms of the approaches used. This process instilled confidence in the researcher that the methodological approach and research questions, to which answers were being sought, were valid. It also enhanced the researcher’s knowledge and contributed positively towards the researcher’s perceived credibility in the eyes of interview respondents.
3.5.2 Semi-structured interviews

In the second phase, more in-depth face-to-face interviews were conducted in the participant’s workplace. The time period during which this was undertaken was influenced by the various constraints, which necessitated that blocks of interviews be done when visiting each location. All interviews were audiotaped with a portable digital voice recorder and notes were taken during the interview. The average length of time per interview was 66 minutes and the interviews ranged from the shortest at 44 minutes to the longest at 123 minutes. Open-ended questions were used in a stem-plus-query design (Cavana et al. 2001, p.139) which allowed room for other issues to emerge, and for the researcher to prompt and probe, based on the answers provided by participants. The pattern of the interview was designed to be a series of funnel sequences (Cavana et al. 2001, pp.142-143) starting with a broad unstructured open-ended question and then proceeding to more structured less open questions and closed questions directly related to research questions (see Table 3.1).

Table 3.1: Value-for-money Subsection of Interview

<table>
<thead>
<tr>
<th>Open-ended question:</th>
<th>I am very interested in value-for-money. Would you tell me about Value for Money?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed question focused on a research sub-question:</td>
<td>To what extent is purchasing value-for-money an objective?</td>
</tr>
<tr>
<td>Open-ended question focused on a research question:</td>
<td>What does value-for-money mean to your department?</td>
</tr>
</tbody>
</table>

The pattern of the interview was used in order to get the interviewee into the rapport zone (see Figure 3.4) so that they would speak honestly and openly (Delahaye 2005, p.179). Responding was undertaken to demonstrate active listening skills on behalf of the interviewer (Cavana et al. 2001). The interview protocol is presented in Appendix C.
The interview pattern was piloted on a respondent from one of the cases with whom the research had a previous research relationship. The pilot study did not become part of the main study and instead was used to validate the interview format. The pilot respondent indicated that the questions being asked were reasonable and provided the researcher with confidence in the interview approach.

Woodside and Wilson (2003) state that triangulation includes probing by asking participants for explanations and interpretations of operations data. This was done by asking project managers to respond to short scenarios focused on an operational context (see Table 3.2) designed to re-explore information discussed earlier in interview.
Table 3.2: Scenario from Interview Approach

<table>
<thead>
<tr>
<th>A: SCENARIO: The Department of Education wants to build a Primary School in (a regional town). Stage 1 of the project is estimated to cost $9.5 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ How would you procure in this case?</td>
</tr>
<tr>
<td>☐ What would Best Value be in this case?</td>
</tr>
<tr>
<td>☐ What Government priorities that you would seek to advance?</td>
</tr>
<tr>
<td>☐ Who would determine these priorities?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B: The policy changes decreeing that all Schools should all have solar panels which will reduce the running costs for hot water and electricity in conjunction with supporting environmental technologies (holding tanks for hot water etc). By installing the solar panels for this project the budget is exceeded by $600,000.</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Which decision do you take?</td>
</tr>
<tr>
<td>☐ Who would determine the priorities?</td>
</tr>
</tbody>
</table>

3.5.2.1 Respondent Recruitment

Cavana et al. (2001) describe purposive sampling as being confined to specific types of people who can provide the desired information. They further describe judgement sampling as involving subjects who have expert knowledge and are in the best position to provide information. Creswell and Plano Clark (2007, p.125) describes purposeful sampling as selecting individuals and sites for study because they can purposefully inform an understanding of the research problem and central phenomenon of the study. Directors of the procurement agencies were contacted via telephone and the researcher was introduced and the purposes and objectives of the research were explained. A follow up email to these directors contained a plain language statement further explaining the project (see Appendix E) and requested email addresses to enable the researcher to contact project managers.

The interview based method was designed to elicit responses from project managers about how procurement was undertaken rather than policy and procedural documentation that describe how procurement should be undertaken. Data was collected at A(C) and A(R),
before proceeding to case B(C) and B(R), C (C) and C(R), D(C) and D(R), and E(C) and E(R) (see Table 3.3). Data collection was conducted in a focused data collection phase between February and July 2008.

Table 3.3: Data Collection Schedule

<table>
<thead>
<tr>
<th>Order</th>
<th>State</th>
<th>Construction</th>
<th>Roads</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>A(C)</td>
<td>A(R)</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>B(C)</td>
<td>B(R)</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>C(C)</td>
<td>C(R)</td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td>D(C)</td>
<td>D(R)</td>
</tr>
<tr>
<td>5</td>
<td>E</td>
<td>E(C)</td>
<td>E(R)</td>
</tr>
</tbody>
</table>

Thirty-six hours of interview data were generated containing approximately 320,000 words. Data collection and analysis proceeded simultaneously (Glaser and Strauss 1967). Interview tapes were transcribed in full and data was loaded into NVIVO for broad bucket coding (Bazeley 2007; Richards 2005). All of the 37 interviews were transcribed verbatim, 22 interviews were transcribed by a professional transcription service and 15 were transcribed by the researcher. The external transcription service was used to save time. However, the transcription undertaken by the researcher was built into the design in order to immerse the researcher in the data.

3.5.3 Secondary Data

Content analysis of the State Government Documents including State Strategic Plans, State Budgets, and Policy and Procedures documents on construction project procurement was undertaken. This was primarily to get an overview of the various policies. The Strategic Plans were studied to look at the articulated strategies for Governments and to identify
Government Priorities. Budgetary information was studied to gauge the level of spending on infrastructure, and to assess whether this expenditure was linked to regional, training objectives or policies. Policy and process documentation on procurement, for example on prequalification was examined in order to gain some insight in to how construction projects are procured by State Governments.

3.6 UNIT OF ANALYSIS

A multiple case study is a holistic design when there is only a single unit of analysis and an embedded design where there are multiple units of analysis (Yin 2003). Case studies do not always use the organisation as the basic unit of analysis, and may instead use the individual, as is often done in medical research, or a group or number of organisations that share common characteristics (Funnell 1996; cited in Smith 2000). Jensen and Rodgers (2001) comment that in Public Administration the unit of analysis tends not to be an individual person and generally a larger entity (organization, institution, policy etc). In this case the unit of analysis is the procurement agency, because the focus of the research is the way policy is deployed through procurement, as illustrated in Figure 3.5.

Figure 3.5: Case Study Design

<table>
<thead>
<tr>
<th>Design</th>
<th>From an individual</th>
<th>From an organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>About an individual</td>
<td>Individual behaviour</td>
<td>Archival records</td>
</tr>
<tr>
<td></td>
<td>Individual attitudes</td>
<td>Other reported behaviour, attitudes, and perceptions</td>
</tr>
<tr>
<td>About an organisation</td>
<td>How organisation works</td>
<td>Personnel policies</td>
</tr>
<tr>
<td></td>
<td>Why organisation works</td>
<td>Organisation outcomes</td>
</tr>
</tbody>
</table>

Source: Yin (2003, p.76)
Whilst the data has been collected from individual public sector managers responsible for procuring infrastructure, it is assumed that their views are methodologically representative of the organisation.

3.6.1 Trustworthiness and Triangulation

Triangulation in qualitative research can mean drawing on multiple data sources in a multi-method design, but it also refers to ensuring trustworthiness (Lincoln & Guba 1985; Cavana et al. 2001). In qualitative research trustworthiness is crucial and somewhat of a proxy for validity. Lincoln & Guba (1985) highlight four criteria against which the trustworthiness of qualitative research can be assessed; credibility, transferability, dependability and confirmability. These criteria have parallels in positivistic quantitative research as internal validity, external validity, reliability and objectivity.

This research addressed credibility by undertaking a systematic approach to data collection and analysis as well as employing various approaches to triangulation. Collis and Hussey (2003) describe triangulation as the use of different research approaches, methods and techniques in the same study. This research uses theoretical triangulation by employing a multidisciplinary theoretical framework to guide the data collection and explore the phenomenon. Yin (2003, pp.98-98) believes that triangulation of data can be used by engaging multiple sources of evidence. In this research both primary data in the form of interviews and secondary data in the form of document analysis were undertaken. Whilst some documentary analysis was undertaken the primary data being used was interview data, as fundamentally the project was interested in the operational perspective on procurement rather than a policy perspective. To overcome this reliance on the interview data, the research further uses triangulation of data by having multiple respondents from within cases (approximately 3-4 interviewees for each case). Multiple respondents were interviewed from
the chosen case organisations to enable triangulation of responses to confirm and deepen the information gathered (Woodside & Wilson 2003). This enabled the research to confirm the findings, but also showed some inconsistencies that showed the researcher that approaches to procurement were not quite as uniform as sometimes thought.

Some checking of responses was entered into by email and telephone where information was not fully clear in interview transcripts. Patton (2002) comments that inconsistencies in results should not be viewed as lessening the credibility of results and triangulation is actually to test for consistency. Given the indepth nature of qualitative research external validity is not possible or desirable and instead transferrability is important to enable comparison with other studies. Lincoln and Guba (1985) comment that qualitative researchers must couple their findings with a description of the time and context in which they were found. Whether findings can be viewed as transferable depends on the time and context in which they were found and is an assessment made by others.

Dependability in qualitative research refer to the acceptability of the process. Confirmability refers of the research is about the data being internally coherent. In pursuit of dependability and confirmability the senior supervisor engaged in an audit of the data analysis approach and the second supervisor reviewed the accounts of the case studies created.

3.6.2 Ethics

Another element in ensuring academic rigor is adherence to ethical requirements. This research was conducted in accordance with University ethics guidelines. Each participant was emailed a plain language statement (See Appendix E) describing the area of interest, purpose of the research, expected duration of the interview and their rights as participants. An informed consent form was then signed prior to the interview (See Appendix F). All
participants agreed to be taped, and as per University regulations digital files of the interviews will be stored in a secure location for five years and destroyed after this time. The risk to participants was minimal in this research.

3.6.3 Analysis of Data

The purpose of the data analysis is to understand the creation of public value by Australian State Governments when procuring infrastructure. Systematic data analysis was undertaken to increase the likelihood of producing trustworthy account of the research (Pettigrew 1990; Lincoln & Guba 1985). The use of computers to analyse qualitative data has become standard practice and Nvivo 7 was used to manage the data (Richards & Morse 2007, Bazeley 2007).

Data reduction is an important step in the analysis of qualitative data as it can be challenge to make sense of such a large volume of data. Following the guidelines of Yin (2003) on general strategies for analysing case studies the researcher used theoretical propositions which helped focus the analysis and was the first step in reducing the data. Reduction and display was enabled by Nvivo 7 following the steps laid out by Dey (1993) were undertaken including: reading and annotating, creating categories, assigning categories, linking data, making connections and producing an account.

The interview transcripts were read and studied as advocated by Dey (1993), and the researcher was immersed in the data as part of the research design through transcribing 40% of the interview transcripts. Next, annotations were made of elements deemed interesting, needing further classification, or justifying the categories created through the analysis process.
The next step was creating and assigning categories and this is done in Nvivo by creating either free nodes, in which there is no presumed relationship or connection, and tree nodes in which there are hierarchical structures in which parent node serve as connecting points of subcategories or types of concepts (Bazeley 2007). Strauss and Corbin (1998) and Beverland, Kates, Lindgreen and Chung (2009) describe axial coding (tree nodes) as reassembling the data into a set of categories, sub-categories, properties and dimensions. The process of coding the interview transcripts involves highlight chunks of text and assigning the text to a node, and sections of an interview can be assigned to multiple nodes. Microscopic and thematic analysis of the interview transcripts to code the data was undertaken to reveal both open (free nodes) and axial codes (tree nodes) (Richards 2005; Cavana, et al. 2001; Miles & Huberman 1994, pp.90-101; Strauss & Corbin 1998, pp.58-59).

A combination of a priori codes drawn from the research questions were used as a starting point but also inductive codes were drawn from the data. Using the grounded theory approach of open coding can supplement the ideas of theoretical framework.

Interviews were then further reduced adhering to advice from Miles and Huberman (1994) who encourage the qualitative researcher to consider how their data might be further reduced, and graphically presented enabling conclusions to be drawn. Particular emphasis and thought was given to how to display the data and Figures 4.2, 4.3 & 4.4 provide examples of the types of diagrams developed.

Approximately one year was spent refining the analysis and writing the results chapters which Dey (1993) describes as producing an account of the research. The researcher aimed to produce an account that satisfied Dey’s (1993) criteria as interesting, accessible and rigorous. This iterative process of analysis and writing helped to clarify and integrate concepts and
relationships. Participant names and organisations were anonymised in the writing phase in order to protect their identities. Cross case analysis whereby a systematic comparison of cases investigated similarities and differences between cases was undertaken (Yin 2003).

In presenting diagrams for each case assessments were made by the researcher as to the value-for-money knowledge of interviewees based on responses to the questions about value-for-money. These responses were then mapped onto the value-for-money matrix framework derived from the literature as either high, medium or low. This mapping exercise was also informed by the responses on the contractual approaches being used with the higher frequency of traditional procurement undertaken by a project manager corresponding with a lower usage of non-price criteria.

When cross case comparisons were undertaken the individual responses from project managers were aggregated to form an overall case perspective. Similarly for the theoretical framework that is used heavily in the presentation of results and analysis the researcher made assessments based on aggregating individual responses to the research questions to form an overall case perspective against the literature framework.

### 3.7 CONCLUSIONS

Exploring the meaning of value-for-money necessitated the use of the social constructivist paradigm as the research undertaken sought to construct meaning gained from the insights of respondents. The nature of the research was considered too complex to be effectively operationalised in a survey; hence the qualitative interview based approach adopted was considered appropriately matched to the research questions. It was felt that this semi-structured approach was the best way of collecting rich data from public managers that allowed the theoretical elements of the framework to be explored but also allowed concepts to
emerge from the data. The interview approach highlighted in Appendix C was used to ensure some repeatability in procedures to enable cases to be compared.

A multiple case study approach means that the conclusions drawn and theories developed are stronger than they would be with one single case. However, there are limitations as to the conclusions that can be drawn and the

Content analysis of policy and strategy documents has also been undertaken, but because the research focuses on the operational activities of procurement, there is significantly less emphasis placed on these documents than there is on the accounts of project managers.

Chapter 4 presents the results for the construction cases and concludes with cross-case analysis of the themes emerging from the construction cases. The construction cases comprise government agencies who procure construction projects which can range from frequently procured buildings like schools and police stations to larger scale, less frequently procured projects like hospitals and prisons.
CHAPTER 4 - WITHIN CASE RESULTS - CONSTRUCTION

4.1 INTRODUCTION

This chapter presents within-case results for the five construction works cases [A(C), B(C), C(C), D(C), E(C)] drawn from Australian State Governments. Sections 4.2-4.6 present the results and analysis of the individual construction cases, whilst section 4.7 focuses on the conclusions drawn from the cross case analysis of the construction cases.

Chapters 4 and 5 are structured and presented around the five primary research questions. For case A(C) a detailed case analysis containing excerpts from the semi-structured interviews is presented. For cases B(C), C(C), D(C) and E(C) a summary case analysis is presented with a smaller selection of quotes. Detailed case analysis was undertaken for all cases using the same approach outlined in case A(C) from which the summary of results presented here was then developed.

4.2 CASE A (C)

4.2.1 Demographics of Interviewees

As can be seen from Figure 4.1 the project managers interviewed in Case A (C) were highly experienced having have spent their whole careers in the public sector, with an average of 35 years experience. A(C)2 has over 35 years experience procuring construction projects, A(C)3 has 25 years experience, whilst both A(C)1 and A(C)4 have more than 15 years experience. Three of the participants hold Bachelor degrees; A(C)2 (Engineering), A(C)3 (Architecture) and A(C)4 (Building), with A(C)2 also holding a Masters degree in Business Administration. A(C)1 holds an Associateship in Architecture.
4.2.2 Procurement Operations

Case A (C) is an internal government department that provides construction and procurement services to client departments on a fee for service basis.

  We’re one of the main service providers to government for procurement of capital works projects – Interviewee A(C)4.

Departments lodge a request for project funds from Treasury, which is then submitted to Cabinet for approval. Client departments are not tied to using the delivery agency, and have the option of engaging a private sector project management firm to procure construction for them. Many departments opt for internal delivery due to established working relationships.

Within the delivery department there are project managers specialising in procuring construction projects for specific client areas e.g. health, education, corrective services etc. An overarching legislative and policy framework guides the construction procurement process.

  And now everything is fairly tightly prescribed within that as to how agencies procure projects … and it's much more tightly controlled than it used to be. The guidelines are mandatory for these client agencies – Interviewee A(C)2.

As can be seen from Figure 4.2, large projects are procured centrally from the state capital but smaller projects (under $20 million) are often procured by regional offices of the delivery
agency. On projects of value equal to or greater than $20 Million the proposed procurement solution is submitted to an internal committee for approval and advice on how to procure.

So we lean on them to tailor a contract to suit unique circumstances. – Interviewee A(C)4.

Case A (C) has a pre-qualification system that requires building contractors seeking government work of $250,000 or above to be prequalified, whilst consultants must be prequalified if seeking work of greater value than $30,000 or under $30,000 if deemed to be of high risk (see Figure 4.3). Prequalification has four levels relating to the value and complexity of the projects. Prequalification requires parties wishing to bid on Government projects to submit a range of information about their business for assessment. This comprises a mixture of information about financials, insurance, people and track record. When successful in prequalification, this allows firms to bid for work within their prequalification level and below. Tenders are either open bid for projects of low value and complexity (below $30K for consultants and $250K for contractors) or over those thresholds bids are received from suitably pre-qualified consultants and contractors. Select tenders occur on projects of higher value and complexity where a number of pre-qualified consultants and contractors (approximately 4-6) are invited to tender on projects that are deemed to suit their skill set and experience.

So, we would go out - - it could be open tender, anybody who is on our prequalification could tender for that, or select tender. It depends on the circumstances. It could be fully documented, it could be Design & Construct. – Interviewee A(C)4.

4.2.2.1 Procurement Approach

The procurement approach is tailored on a case-by-case basis and influenced by perceived risk, complexity and location

That's a factor (complexity), but I mean it's all about the risk, and the dollar value, I think by definition, a higher dollar value is defined as a higher risk, but it's more about the time. I mean, you don't choose a non-traditional form with, you know fast tracking, with concurrent
design and construction, if time isn't a factor ... But, I mean, that's changing a bit too now.

There's horses for courses. Partnerships are important for more complex projects and you share the risk. - Interviewee A(C)2.

Client department’s preferences can influence the approach adopted. This can range from the client department’s attitude towards risk and innovation, to a desire to fast track, or a desire for cost certainty.

These days (the client department) would have a very strong view about how it is to be procured … They have a very strong preference for Design & Construct. - Interviewee A(C)2.

Small contracts (under $20 million) tend to proceed down the traditional pathway, whilst shows that larger contracts tend to be procured using some variation on D&C or Managing Contractor.

The way the process is depicted by Walker and Hampson is too simplistic and doesn’t match our contracts. Almost all of the large ones I am involved with are Managing Contractor which is a mixture of Design & Construct Management, Novation of consultants and a Guaranteed Construction Sum. – Interviewee A(C)2

4.2.3 Summary

The procurement approaches adopted by Case A(C) are selected to manage risk and the organisation is somewhat risk averse. Figure 4.2 highlights the financial thresholds that trigger different procurement approaches when selecting building contractors, whilst Figure 4.3 describes the selection process for building consultants. Table 4.1 presents the contractual approaches used and their frequency of use by individual project managers. The traditional approach to construction procurement is used when the projects are under $20 million. A form of D&C called Managing Contractor is frequently used when projects are of a value over $20 million and considered more complex. Regional offices handle projects up to $20 million, and projects valued above that are procured centrally from the capital city. Transaction costs have been considered in the way thresholds are used for tendering, at times
mandating prequalification, and through the shortlisting of appropriate contractors or consultants.

**Figure 4.2: Case A(C) Procurement Decision Model – Building Contractor**

- **Building Contractor**
  - **>$250K**
    - **N**
    - **Y**
- **Not prequalified**
  - **N**
  - **Y**
  - **>$20 Mil**
    - **N**
    - **Y**
- **Traditional Procurement?**
  - **Y**
  - **N**
    - **Advice from committee, procured centrally**
    - **Integrated Design and Construction disciplines, VFM selection**
Figure 4.3: Case A(C) Procurement Decision Model – Building Consultant

Table 4.1: Distribution of Construction Contract Type for Case A(C)

<table>
<thead>
<tr>
<th></th>
<th>Traditional</th>
<th>BOOT</th>
<th>D&amp;C</th>
<th>Novation</th>
<th>CM/PM</th>
<th>On-call multi task</th>
<th>GMP</th>
<th>Full cost reimbursable</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(C)1</td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Managing Contractor D&amp;C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A(C)2</td>
<td>80%</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A(C)3</td>
<td>98%</td>
<td></td>
<td></td>
<td>2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A(C)4</td>
<td>50%</td>
<td></td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
<td>10%</td>
<td></td>
</tr>
</tbody>
</table>
4.2.4  Defining value-for-money

Whilst no official definition of VFM emerged from the interviews, all respondents indicated that procuring on the basis of VFM was an important objective of their work.

It is a huge objective. – Interviewee A(C)4

Oh, ultimately to me, it’s the objective, I guess the whole process is geared around value for money. – Interviewee A(C)3

Because the public expect to get value-for-money, they not only expect to get it, they actually want to see we’re getting it too. – Interviewee A(C)1

Value-for-money is a complex construct.

It's a very tricky thing to compare, but I guess we probably can't until the very end of the day, because the arguers would say well it's all about innovation, it's all about whole of life costs, and, you know until 30 years time you will not be able to compare the value-for-money outcomes … So it's very difficult, you know, very tricky. – Interviewee A(C)2.

Because there is no universal definition given of VFM, and it is assessed on a case-by-case basis, it follows logically that the meaning of VFM will differ depending on the procurement approach being used. For a traditional construction contract where there are separated phases of design development and construction, it is frequently the lowest price that is deemed to be VFM. Risk is viewed as having been managed by having the design fully developed before starting the construction phase. The non-traditional approaches to procurement integrate the design and construction phases into a more concurrent process. From the client’s perspective there is a higher component of risk in these non-traditional approaches because the design documents that were tendered need further development before they can be used as the basis for an asset to be built physically. These approaches rely less on price competition, because of this element of uncertainty around precisely what is to be built as the design still requires
further development. These approaches present challenges for the delivery agency in justifying expenses and demonstrating VFM to their client departments.

The big challenge for us at the moment is in these newer forms of procurement, which are threatening the way that - - that's not the right word … there's a major expense upfront to establish relationships with a contractor on an alliance project, which traditionally we have said aren't really required on building projects, because they're not as complex or high-risk as the infrastructure projects. Now, we might have to change that view … Now, in a value-for-money sense, you have to really ask about that because we know the costs associated with that procurement are significantly greater. – Interviewee A(C)2.

In these non-traditional approaches to procurement, the importance of evaluating both price and non-price criteria through the tender process was viewed as a more important factor in achieving, and being able to demonstrate, VFM.

A financial definition of VFM was the dominant perspective expressed by respondents.

That you haven’t paid too much or too little for the product. You paid the right amount. The price is right, yeah. For the product, the product being the end product -Interviewee A(C)4.

Yes, although there was a value-for-money assessment at the end. Having selected a preferred tenderer, there was a value for money assessment and a resource evaluation at the end, but it wasn't taken into account in the comparison … We put the QS (Quantity Surveyor) all over their proposals so that we made sure there weren't anomalies in the people they were proposing, with the rates. And it was more about did the list of guys they were proposing really match our expectations of the role? – Interviewee A(C)2.

An important issue emerging from the financial perspective on VFM was that of justifying expenditure to client departments, and using competitive tendering and estimates to do so.

Effective expenditure of money. I mean, we are always having to justify to our clients that the cost of projects you know, we bench mark it against existing projects, and in some cases will do a very detailed elemental estimate of the project to sort of satisfy the client this is what it's going to cost. – Interviewee A(C)4.
I mean, I don't know how you assess best value, other than call in competitive tenders … I don't know how else you would assess it – Interviewee A(C)2.

Another theme relating to the financial perspective was the consideration of the life cycle costs of the built asset.

It depends on the brief from the client, and based on that brief we’re going to balance capital against whole of life, and once we’ve got that to where that should be we should get the best possible balance of capital. If we go too far this way with reducing capital costs, operational costs will increase, and that relates to value for money. So it's that balance. – Interviewee A(C)1

I suppose we're responsible for making sure that the quality is achieved, that the construction is of a good quality, that there are no sort of lingering defects, that things are not going to break down 12 months after everybody has packed up and left. – Interviewee A(C)4.

The delivery agency is influenced by what a client department values in terms of outcomes for their projects. They therefore adopt a client perspective on what is valuable in terms of quality, time and procurement approach and this informs the selection criteria used.

And from education's perspective, time is equally as important, as you know, the start of school, that classroom has got to be there, it's got to be able to be used. – Interviewee A(C)4.

Figure 4.4 maps respondents VFM knowledge with the manner in which they procure. In Case A(C) the interviewees generally rated highly on both their VFM knowledge and moderate to high on their procurement approaches incorporating non-price criteria. This is perhaps due to the high experience level of these project managers and the fact they are often procuring projects of higher complexity.
Value-for-money is a complex construct requiring assessment on a case-by-case basis. When procuring traditionally it is common for VFM to be considered lowest price with Government viewing the project as low in risk because the design documents have been fully developed. However on non-traditional projects where design documents are less developed a broader definition of VFM emerges. A strong theme to emerge in case A(C) was that of taking a client perspective. The outcomes sought by the client department influence the procurement approach used and what VFM means. Client values might include a combination of timely completion, quality and cost, but may also include aspects of innovation and a consideration of an asset’s life cycle.

4.2.5 Selection Criteria

Project managers go through a risk assessment process and develop recommendations on the procurement approach, selection criteria and weightings. This involves consultation with the client department and translating client values into non-price criteria. The project manager discusses the approach chosen with colleagues in the delivery agency and the
recommendations are then submitted to a committee within the delivery agency for endorsement.

I would discuss it with the client, what they thought about it. I'd discuss it with colleagues, what they thought about that as well … The final approval is the committee to say that's right, you've got the right selection criteria, you've got the right weightings, and it's okay to go. So the process in place is to get it all lined up, so it's ready, get the contracts committee to say they endorse the process, and then go to the client and say can we go to tender and then we go to tender – Interviewee A(C)1.

Generally it is a two staged selection process with the first stage requiring prequalification and the second stage the submission of a competitive tender for assessment. Lead consultants and contractors are required to be pre-qualified and submit a tender for evaluation against key selection criteria which have a combination of price and non-price elements. On traditional projects, building consultants tend to be awarded more on a 50/50 split of price and non-price criteria. However, when selecting contractors on traditional projects the non-price criteria component is set between 5-10%. It is typically set at 5% non-price criteria that relates to government imperative/priority criteria.

Non price criteria are used more extensively on complex and or larger projects, when selecting both building consultants and contractors. Smaller traditional projects are awarded predominantly on the basis of lowest price. Commonly used non-price criteria are: the team being proposed, their level of experience and the construction methodology.

The primary one is the quality of the team proposed and the track record in that sort of work, both the firm and the team. I mean they’re the key things. – Interviewee A(C)2

Typically, we used price and non-price criteria. Typically we've used criteria such as the recently (introduced) resource strategy and methodology. – Interviewee A(C)1.

The non-price criteria used and level of weightings attached can vary significantly and are influenced by the client department. For some client departments non-price criteria will be
between 70-80% on a non-traditional project. However for other departments it is not as large.

On the scoring sheet, there was one that sort of came out in front. I can't exactly remember what the percentage was, but usually we have 75 percent pricing or 70/30. We never go more than 30 percent non-price criteria. At the end of the day, the price actually probably came into it more. – Interviewee A(C)4

Part of the logic behind deeming the lowest price to be the best value in the case of traditional procurements is that consultants and contractors have generally submitted non-price criteria as part of the prequalification process.

If they are invited to tender, you presumably think the three tenderers you have invited, are capable of doing the job. – Interviewee A(C)3.

Arguably, they all could have done it. They all could have completed it. Well, they wouldn't have been on the list if they couldn't have done it. - Interviewee A(C)2

There are a variety of methods for assessing non-price criteria that attempt to justify or demonstrate VFM.

We keep the non price quite separate. We review that. We come up with a rated score and then the tender panel opens the prices and we have what we call a quality adjustment premium that we put on each tenderer to get some parity addressed, and the best one wins, not necessarily the lowest price. It's a combination of pricing and non price. – Interviewee A(C)3.

4.2.5.1 Summary

Selection criteria vary considerably on traditional and non-traditional projects and between consultants and contractors. On traditional projects non-price criteria are used for selecting consultants, but set at a minimal level for contractors. Non-traditional projects tend to have a greater emphasis on non-price criteria in the selection process for both consultants and
contractors. The selection criteria used are informed by risk. In a traditional project, risk is seen to be managed by having completed design documentation and bids from prequalified tenderers. There is recognition of the risk involved in the design process, hence the generally higher non-price weightings used when selecting consultants (architects and engineers). The non-traditional procurement projects have a higher non-price element partly to reflect the inherent risk in design. The fact that design and construction disciplines are being integrated to achieve some benefits means that the design is not fully completed before tendering and therefore there is more uncertainty as to exactly what is going to be built and how, and consequently more room for scope creep.

4.2.6 Government Priorities

All four respondents were aware of their Government’s Priorities but their working knowledge of how they applied to procurement seemed limited.

A lot of the priorities are really, the priorities are set, but the choice of project is really set by agencies outside ours. – Interviewee A(C)3

But I mean, yes, they exist. Yes, they're recognized for what they are as political promises and political initiatives. However, they're still recognized as valuable and desired aspirations, and generally the industry complies as far as it’s able. – Interviewee A(C)2

To some degree I’m not sure whether the priorities are still in place – Interviewee A(C)1.

The delivery agency considers that it is the client department’s responsibility to ensure that their project addresses an area of government priority. This requires a case being made by the client department to Treasury and Cabinet for funding and approval.

The choice of project is really set by agencies outside ours. We're project managers. A client asks us to deliver something. We don't really question to a great extent. Well, the Department probably does in its broader covenant perspective, but as a project manager, I don't question
whether this is a good project. I mean, obviously, if it's an absolutely appalling project, you wouldn't work on it – Interviewee A(C)3.

Clients view getting their project delivered as the priority.

Well, the project itself was the priority. – Interviewee A(C)4

Non-price criteria designed to achieve Government Priorities are meant to be included as standard selection criteria in all tender documents

No. I mean, the priorities have to be incorporated into each contract. I mean, they are a mandatory thing, and the contractors now have quite standard, sophisticated, ways of responding to it. Our clauses are very standard in terms of training, local procurement etc. Some contractors try harder than others to respond. Others will just pay lip service to things like local procurement. – Interviewee A(C)2

The two main Government Priorities to be advanced via the procurement process are local industry participation and training

One is the local industry participation. The second one is the training … They're the two main ones that we get involved with. – Interviewee A(C)1

Look, all our policy says is that contractors will engage apprentices, and I don't know the full details of it. But it's a requirement put on the contractor to comply with the apprentice training policy which obviously requires a certain number of apprentices to be employed. – Interviewee A(C)3

The physical location of a project influences the Government Priorities that are included as selection criteria. For instance, if projects are located in indigenous or regional areas then project managers are likely to incorporate non-price criteria that seeks to advance local industry participation policy in the area. Regionally located projects attract higher Government Priority weightings (10%), than non-regional projects (5%).

The local industry participation plan is something that we think is important and usually still put that into selection criteria for a major project and we usually vary it in its percentage,
depending on where it is. Five percent and ten percent in regional – Interviewee A(C)1 Local industry participation would generally be 5-10% of selection criteria – Interviewee A(C)2.

Other priority areas mentioned were indigenous employment and public art. There is less interest from clients in utilising the procurement process to deliver Government Priorities, particularly in policy domains of other government departments.

They’re not interested in apprentice training. I mean, corrective services are interested in getting prisons built - Interviewee A(C)1.

The delivery agency expressed concern that Government Priorities were most likely not incorporated in to the procurement process when client departments engaged private sector delivery options.

Unfortunately, our clients do sometimes go out and do their own things, and you wonder how they got away with it. – Interviewee A(C)4

Projects are not audited against the government priorities.

But we do report on how projects achieve the priorities of government, particularly the departmental projects of which the _____ is one. So I report how this is meeting the government priorities. – Interviewee A(C)3

4.2.6.1 Summary

At some stage, the government has viewed the procurement process as a means to deliver joined-up government priorities. There is an existing framework for linking Government Priorities to procurement and it was suggested that Government Priority criteria are included as standard on all projects. However, this criterion is not being pursued aggressively and appears far from standard, and seems somewhat at the discretion of the project managers. Projects are not audited as to how they performed against Government Priority criteria. Government Priorities do however get a sharper focus in regional locations as bidders are required to articulate their contribution to local industry. Client departments are so focused on their goals, that it is a challenge for the delivery agency to push Government Priorities on
to their projects. This is perhaps because the delivery agency is reliant on the client
department for the ongoing funding of its activities. When projects are not procured by the
internal delivery agency, Project Managers felt that Government Priorities were not being
pursued or advanced at all.

4.2.7 Supply Chain Management

Case A(C) adopts a very hands-off approach to supply chain management on its projects and
instead engages lead contractors, via a tendering process to manage the supply chain. They
tend to stay out of the relationship between a lead contractor and its subcontractors.

I have noticed the flavour coming through in a lot of tenders is that they are promoting their
relationship with subcontractors and their long relationships with the same subcontractors …

We try to keep out of that relationship. – Interviewee A(C)3

In non traditional contracts they are attempting to overlay some processes that will create
good working relationships between the key project members.

In the contract, there are words like "cooperative contracting". … But there is nothing in the
contract which sets anything up to make it happen … We have been putting in place
partnering agreements, which involves the client, project services, the manager of the contract,
the consultants and the subcontractors. And we've tried to basically kick that off as soon as
we appoint the managing contractor. At that point, the subbies are not on board, but we try to
have partnering workshops to start off with, set up charters for how we want to work together
… It's not a contractual thing, it's just how our relation is going, where the issues are, where
the big issues are … So the subcontractors have an opportunity to get involved in that. Some
take it more seriously than others. Some not seriously at all. They think it's a waste of time,
and that's fine. – Interviewee A(C)1

Subcontractors are not required to be pre-qualified to work on Case A(C) projects and the
selection of subcontractors is left to the head contractor on Government projects, particularly
in the case of traditional projects. Even when the Government client has had bad previous experiences with sub-contractors proposed by a major contractor they are reluctant to get involved in the selection decision.

We don't select them. I mean, it's up to the contractor to select … The contract requires that we sort of have a look at who he's proposing to use and agree. We don't usually knock anybody back, unless we're aware there is some issue. – Interviewee A(C)4

From the point of view of selecting subcontractors for traditional jobs, we have almost no input into it. – Interviewee A(C)1

For non-traditional projects the delivery agency has more input because these contracts often require the lead contractors to prove that they selected subcontractors on the basis of VFM by competitively tendering on price. If a lead contractor wants to select a subcontractor who did not submit the lowest price then the government client’s permission must be sought to do so

The contract says they have to be tendered competitively, and we're looking for at least three subcontractors for each tender … to ensure we're getting the value for money … He's got to actually prove that and demonstrate. … He seeks our approval of the package, the documents. He'll tender that. If it comes in and he reviews the package and it's conforming with the documents and the lowest as the best, he'll accept that and move on and then he'll let us know that he's done that. If it's not okay, and it's not the lowest and he wants to accept it into dollars he has to ask our permission to accept it … In most of these subcontractors it usually is going to be the lowest cost. – Interviewee A(C)1

Lead contractors receive regular feedback formally from the Government client as part of regular reporting cycles on projects.

Yeah, we do a - I think it's monthly - - they tried to introduce monthly. I'm trying to think. It may not be monthly, it might be quarterly. I would have to check on the time… Usually when you are critical you'll get a reaction and they'll want to discuss it … as PM, you don't usually
get a look at a form. Unless you sort of dig your heels in and say I want to have some input into this guy – Interviewee A(C)4

Generally, subcontractors receive no formal feedback from the client, and there is reluctance on the client side to provide feedback to subcontractors because the contract they have is with the lead contractor and not the subcontractor.

There's no formal process for that. There's no real process for reviewing their performance. – Interviewee A(C)4

They may offer some feedback informally and this is more likely to happen in cases where the Government client is unhappy with the standard of the subcontractor’s work.

We don't usually interfere in that. Yes. I mean, occasionally we might raise issues that at site meetings and stuff like that if unhappy with performance, but apart from that we don't buy into it because it’s, the contract is with the subbie.– Interviewee A(C)4

The link between performance on projects and access to future opportunities for work is not strong.

Occasionally you might get a bad mark, as you know. The builders clearly don't like that. Whether it influences things or not? I've never heard that. – Interviewee A(C)4

However, the Government client feels that its purchasing power has an influence on the behaviour of the supply chain.

Feel as though if they don't do as well on this one, they won't get a chance for the next one, and so good relation with us … means they will continue to be on the tender lists … you still get the problem of a bad report that it might go through to someone else, but maybe you'll get away. But we've certainly seen I think ongoing now for some years with builders, probably not claiming and not putting in major claims against us because they don't want to not get a job in the future, and some have been quite blatant about it … Or not at all, because they know that there's a similar job coming up. – Interviewee A(C)1
There is little done on the client side in terms of supplier development activities

What do you mean "supplier development?" Do you mean innovation? It's probably one for (Pilot Interviewee 1) to answer. I don't know. – Interviewee A(C)3

4.2.7.1 Summary

The approach to supply chain management is to pay the lead contractor to manage the supply chain on government’s behalf. There is no formal mechanism for the client to provide performance feedback to subcontractors. However, feedback is given to lead contractors that may or may not relate to the performance of subcontractors. Clients are loathe to get involved because the contractual relationship is between the subcontractor and the lead contractor. Almost nothing meaningful is undertaken in the area of supplier development for either the lead contractor or subcontract sector.

For traditional procurements lead contractors are selected predominantly on the basis of price and a varying mixture of price and non-price on non-traditional approaches. In both traditional and non-tradition procurements, subcontractors are selected almost solely on the basis of lowest price and it is very much the exception for a subcontractor to be selected by other criterion as government requires lead contractors to demonstrate that they have been selected on the basis of lowest tender. As a consequence, lead contractors are discouraged from using non-price criteria in the selection of subcontractors even on projects where they have been selected on that basis.

Figure 4.5 aggregates the responses received from the project managers in case A(C) against the dimensions of the theoretical framework to present an overall case perspective. A cross case analysis of the construction case responses is contained in section 4.7.
Figure 4.5 aggregates the individual responses received from the project managers in case A(C) to form an overall case perspective against the elements of the theoretical framework. As can be seen from Figure 4.5 case A(C) defines value-for-money more broadly than just price and attempts to pursue some policy by-products through the procurement process. Efforts are made to design tendering processes that minimise wasteful non-value adding tendering costs, but there is very little active management of the supply chain.

**Figure 4.5: Case A(C)**
4.3 CASE B (C)

4.3.1 Demographics of Interviewees

Two of the respondents B(C)1 and B(C)4 hold Bachelor degrees; B(C)1 in Architecture and also holds a Graduate Certificate in Management, B(C)4 in Engineering. B(C)3 holds an Associateship in Architecture whilst B(C)2 was a draughtsman. Figure 4.6 presents the interviewees age, public sector and procurement experience. From Figure 4.6 it can be seen that the project managers interviewed were all approximately 50 years old or over, and three have over 28 years experience in procurement, with B(C)4 having eight years experience procuring. Aside from B(C)1 who has 14 years public sector experience, the other three respondents each have over 25 years experience in the public sector.

Figure 4.6: Case B (C) Interviewee Age and Experience Distribution

4.3.2 Procurement Operations

Legislation exists tying departments to procuring through the internal provider. The overwhelming approach is that of lowest cost procurement of construction based on contracts with designers/architects/engineers and separate contracts with a construction contractor. As
can be seen from Table 4.2, which presents the frequency with which contractual approaches are used by individual project managers, the traditional approach is predominantly employed [B(C)2 - 99%, B(C)3 and B(C)4 - 95%, B(C)1 - 90%]. The approach to prequalification incorporates both project value and complexity, and aims to reduce unnecessary tendering costs on both the industry and client side. From Figure 4.7 and Figure 4.8 it can be seen that single select tenders are used for building contractors under $100,000, and are used for consultancies under $20,000 where the fees charged are predetermined by Government, or between $20,000-$100,000 where the fees are deemed within an acceptable range. The approach to procurement is conservative, highly risk averse, and therefore unlikely to produce innovation.

No, it tends to be all traditional because as I said 99.99% recurring. It's very rare in what you would call a normal construction, non construction project, we'll go to a Construction Management type contract, or even Design & Construct and things like that. We tend to stay away from those in terms of government. – Interviewee B(C)2.

**Figure 4.7: Case B(C) Procurement Decision Model – Building Contractor**

![Diagram](image-url)
Figure 4.8: Case B(C) Procurement Decision Model – Building Consultant

Table 4.2: Distribution of Construction Contract Type for Case B(C)

<table>
<thead>
<tr>
<th></th>
<th>Traditional</th>
<th>BOOT</th>
<th>D&amp;C</th>
<th>Novation</th>
<th>CM/PM</th>
<th>On-call multi task</th>
<th>GMP</th>
<th>Full cost reimbursable</th>
</tr>
</thead>
<tbody>
<tr>
<td>B(C)1</td>
<td>90%</td>
<td>5%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B(C)2</td>
<td>99%</td>
<td>0.8%</td>
<td>0.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B(C)3</td>
<td>95%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B(C)4</td>
<td>95%</td>
<td>2.5%</td>
<td>2.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.3.3 Defining value-for-money

Whilst no formal definition of value-for-money was offered by respondents there was consensus that it is an important objective of procurement.
Well it is part of government policy so it is part of everything we do. – Interviewee B(C)3

Value-for-money can not be prescribed, and instead needs to be assessed on a case-by-case basis by an experienced project manager or director. Given the propensity for traditional procurement it might be expected that VFM would be defined financially in terms of lowest cost. However, this was not the case and respondents commented explicitly that VFM and lowest cost is not the same thing.

Look, I think it's a term that is used loosely. Value-for-money rolls off the tip of your tongue quite easily … Just because it's the lowest price it doesn't mean it's value-for-money. When you get a contractor on board who might have been the lowest price but he delivers the project nine months late. Is that value-for-money? – Interviewee B(C)2

The overwhelming dominance of lowest cost tendering highlights that there is a dichotomy between the knowledge of the staff and the way in which it is applied through how they procure. The respondents have a broader understanding of VFM but are locked into the organisation’s approach to procurement, perhaps because of the organisation’s risk aversion and the strong preference of Treasury for cost certainty. VFM is influenced by the procurement approach chosen and has a broader definition, not solely financial, on complex projects. The project managers indicated that VFM in the consulting (design) and contracting (construction) disciplines were different. It was felt that opting not to take the lowest tender in consulting, and instead spending more money, led to more tangible results. Conversely, abandoning lowest cost tendering for building contracting produced a less tangible result. When all of the bids submitted by contractors on a traditional procured project are non-conforming then the project managers have far more discretion and are allowed to select on the basis of best value rather than lowest price.

From Figure 4.9 it can be seen that apart from B(C)3 the interviewees all had a high degree of knowledge about VFM but none of them regularly used non-price criteria in their procurement activities.
4.3.4 Selection Criteria

For building contractors the primary selection criterion is price.

So, to be quite honest with you, with those types of routine projects, by and large it comes down to conformity with the requirements of the tender document, and price, with a little bit of - I wouldn't say that it's a token consideration, but unless there is something in a buy local sense to do with the district factor or some sort of job in the regions, by and large the predominant driver in terms of the selection process is conformity with the tender requirements, and price, the tender price that is submitted. Regrettably, that's the case. – Interviewee B(C)4

For consultants 50% of selection decisions are not made on the basis of lowest price. Non-price criteria in the form of experience, people etc are used when selecting consultancies. Design consultants are selected more frequently on the basis of both non-price and price criteria. There is recognition that it is worth paying for a good designer. In both contractors and consultants the “buy local” policy gives a weighting preference to local firms. The assumption is made for contractors that pre-qualification sorts out the contractors and those that are prequalified are of a suitable standard to work on Government projects. Non-price criteria can be used as a pass/fail criterion to develop a shortlist of bidders (e.g experience
building hospitals) from which tenders will be submitted and awarded based on price. On complex jobs the selection process may entail non-price criteria as part of the tender submission by building contractors.

4.3.5 Government Priorities

Case B(C) does not have articulated government priorities, or an overarching state planning document that addresses government priority areas. Upon contacting the Premier’s department the researcher was advised to refer to the promises made before the last election as a reflection of the government’s priorities. The construction procurement process has been viewed as a vehicle for achieving other government policies due to the presence of some overarching policies in the areas of training, public art and indigenous involvement. However, these joined-up policy initiatives do not appear to have been pursued in a highly coordinated manner. One respondent expressed concern about the randomness with which requests are made of the internal delivery agency on projects. Whilst projects are meant to be audited against policy initiatives, it is clear that the projects are not rigorously audited as to how well initiatives have been advanced. Interviewee B(C)1 commented that you should be ‘place driven’ when thinking about advancing Government Priorities or policy, and that the location of a project is central to shaping any additional value you are trying to create for communities.

In location and it is place driven, right. Now, most agencies don't go and build two buildings in the same place pretty much at the same time to take advantage of it. You know if we are building a school in ____, we won't be able to also build in, you know, something similar, another school in ____ because we're only building one. So the aggregation lies by coming across agencies, all right, a police station and a school and a medical centre, and some houses for that matter, that is an aggregation that you can only get in a non disaggregated model or some mechanism to get it, and government has just walked away from that. – Interviewee B(C)1
4.3.6 Supply Chain Management

Case B(C) adopts a “hands off” approach to supply chain management on its projects. After selecting a lead contractor, primarily on the basis of price, the selection of subcontractors is left almost entirely to the discretion of the lead contractor. There are some instances in which the client requires the lead contractors to nominate the subcontractors they are going to use for approval, but the subcontractors are not required to be formally pre-qualified. Subcontractors tend to be nominated in areas where specialised skills or experience is required, the number of suppliers in that field is small, or where the subcontract package is of a particularly high value. There are instances in which a lead contractor might be asked to demonstrate that their chosen subcontractors have experience in the type of work they are bidding on. Thus, on non-traditional procurements, the lead contractor’s ability to engage and manage suitable subcontractors might be incorporated in non-price criteria into the tender assessment. Feedback is given to the lead contractors formally via routine reporting cycles and informally when issues arise. Feedback is not given either formally or informally by the client to subcontractors, although a subcontractor’s performance may be reported formally or informally to the lead contractor. In theory there is a link between performance and future work opportunities, but the reality is that it has not been an area where the Government has been as vigilant as it might be.

Yes, and it's not as strong as it could be but it does … My understanding is that it feeds into the system. It's stated that it does but I just haven't actually seen a lot of evidence. I know if there's an adverse report -- I understand that it's followed up. There is actually a letter that gets sent to the contractor, so to that extent it may impact on their categorisation but I just haven't been involved at that level to understand exactly how that feedback loop works. – Interviewee B(C)4

In terms of supplier development there is little evidence of any process. The organisation attends industry association meetings and tries to communicate with the lead contractors
about what work is coming up, but apart from that, there is little formalised activity that would be recognised as supplier development with either lead contractors or subcontractors.

Figure 4.10 illustrates the responses received from the project managers in case B(C) against the dimensions of the theoretical framework. Case B(C) recognises both that lowest cost is not equivalent to VFM and the opportunity encapsulated in infrastructure procurement to pursue policy by-products. However, both of these intentions are hampered by the organisations strong preference for traditional tendering based on lowest cost. Whilst tendering processes are designed to minimise wasted tendering costs on the supply side there is limited management of the supply chain.

Figure 4.10: Case B(C)
4.4 CASE C (C)

4.4.1 Demographics of Interviewees

Three of the respondents hold Bachelor degrees, two in architecture C(C)3 and C(C)4, and one in Human Resources C(C)1. Figure 4.11 illustrates the interviewees’ age, public sector and procurement experience. From Figure 4.12 it can be seen that three of the interviewees were over 50 years old whilst C(C)4 was 42 years old. Three of the participants had approximately 30 years experience in both procurement and the public sector whilst C(C)4 had 18 years procurement experience and 15 years public sector experience.

Figure 4.11: Case C (C) Interviewee Age and Experience Distribution

![Case C (C) Interviewees Age and Experience Distribution](image)

4.4.2 Procurement Operations

In Case C(C) there is legislation tying departments to using the internal delivery agency to procure their construction projects. From Figure 4.12 it can be seen that projects up to $4 million are generally procured using a traditional approach whereas those over $4 million go to a specialised committee for further consideration. From Table 4.3 it can be seen that even after consideration, approximately 80% are procured using a traditional approach. A
Managing Contractor approach tends to be used on fast track or high risk (brownfield site) projects. Project managers within the delivery agency work on projects for a mixture of client departments matching the experience of project managers to the complexity of projects. Projects tend to range from $150,000 to $150 million and procurement is undertaken centrally from offices in the capital city. For projects over $150 million, which are often Health projects, there appears to be a trend to have them undertaken as Public Private Partnerships (PPPs), and these are procured by Treasury and not the delivery agency. Whilst projects are internally tied, the delivery agency does have some discretion as to the projects they manage. On projects estimated to cost between $150,000 and $1 Million, where the internal delivery agency does not wish to manage the project, it can be procured by another internal agency devoted to facilities management activities. Alternatively, it can be procured by the client department where it is deemed appropriate (e.g. boardwalks in national parks).
Figure 4.12: Case C(C) Procurement Decision Model – Building Contractor

Figure 4.13: Case C(C) Procurement Decision Model – Building Consultant
Table 4.3: Distribution of Construction Contract Type for Case C(C)

<table>
<thead>
<tr>
<th></th>
<th>Traditional</th>
<th>BOOT</th>
<th>D&amp;C</th>
<th>Novation</th>
<th>CM/PM</th>
<th>On-call multitask</th>
<th>GMP</th>
<th>Full cost reimbursable</th>
</tr>
</thead>
<tbody>
<tr>
<td>C(C)1</td>
<td>75%</td>
<td>*handled by different department</td>
<td>3%</td>
<td>20%</td>
<td></td>
<td></td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>C(C)2</td>
<td>80%</td>
<td></td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C(C)3</td>
<td>70%</td>
<td></td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>C(C)4</td>
<td>80%</td>
<td>1%</td>
<td>4%</td>
<td></td>
<td></td>
<td></td>
<td>15%</td>
<td></td>
</tr>
</tbody>
</table>

4.4.3 Defining Value-for-Money

Respondents agreed on the critical importance of VFM in construction project procurement. The respondents commented that VFM was the effective and efficient expenditure of taxpayer funds, and noted that lowest cost has rarely proven to be Value-for-Money. A strong client focus was evident from Project Managers and the view that VFM on a particular project depends on what the client values.

Well it depends on the client agency, at the end of the day what do the client agency want? Is their primary driver time? Is their primary driver cost? Is it just that they want a great asset at the end of the day? And depending on what their driver is, it would depend upon how we would structure the value-for-money component we were seeking. – Interviewee C(C)4

VFM is therefore partly defined outside of the delivery agency by clients, which then influences the procurement approaches and selection criteria used. A crucial component of VFM was ensuring that there was a match between the scope of a project and the budget. Project budgets are set external to the delivery agency by Treasury and the Client departments. Project Managers are then charged with delivering a project within the predetermined budget and scope to satisfy the client department.
The perspective of VFM is broad and in some instances focused on adding value for client departments in terms of improving the service outcomes achieved from the physical facility being procured. There was a focus on identifying opportunities to innovate and add real value, and linking this creation of value to the use of the facility by the client department.

As can be seen from Figure 4.14 the respondents have a moderate to high level of knowledge about VFM and a varying degree of use of non-price criteria in their work depending on the types of projects they were procuring. At best, there is only a moderate level of procurement on the basis of VFM, because approximately 80% is undertaken using a traditional approach selecting predominantly on price (see Figure 4.14).

**Figure 4.14: Case C(C) Interviewees’ Value-for-Money Matrix**

<table>
<thead>
<tr>
<th>Extent and use of non-price criteria by interviewee</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>C(C)1</td>
<td>C(C)4</td>
<td>C(C)3</td>
</tr>
<tr>
<td>Medium</td>
<td>C(C)2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**4.4.4 Selection Criteria**

Selection criteria are developed by Project Managers, but there may be some collaboration with members of the project team representing the disciplines of design, finance, client and delivery. There are two pathways for selecting building contractors; the low bid approach and the value select approach. The low bid approach does not mean that the lowest tenderer will
be awarded the project, but rather those tenderers whose bid is within the closest range to the estimate attracts the maximum score against the price criteria. The low bid approach generally has a 90% weighting on price and a performance score based on previous work which is given a 5-10% weighting. The value select approach is used if there are other criteria that the Government wants the building contractor to demonstrate in terms of capability. The value select approach has a component of non-price criteria (50-70%), price criteria (30-45%) and a performance score (5-10%) (for example construction of a TAFE college).

The traditional approach to construction procurement is undertaken 80% of the time and utilises a low bid approach. On non-traditional projects they are far more likely to go down a value select pathway, particularly when using Managing Contractor approaches. Choosing building consultants is done differently and tends not to involve formalised selection criteria the way that building contractor selection does. It tends to be a process of assessing the service being offered (non-price) and then looking at the price, and determining if that price is within what is deemed to be an appropriate range. So the choice is based on non-price (service) then check to make sure fees are within an acceptable range.

The use of non-price selection criteria seemed focused on getting the best team for the project and creating good working relationships. The thinking being that to create value and deliver outcomes for clients, they need a team approach and the crucial thing is the relationships between the parties.

4.4.5 Government Priorities

The internal delivery agency views it as a client’s responsibility to ensure their projects are aligned with the state plan. The link between construction project procurement and the
strategic plan is made by the client department and is a crucial step in ensuring a project is funded by Cabinet. It is up to the client department to demonstrate that a building will enable services to be delivered creating an appropriate level of public value that warrants investment by Cabinet.

Projects are not strictly audited against Government Priorities identified in the state plan but it was suggested they do monitor their performance against this criterion. The internal delivery agency believes that client departments would report on how their yearly activities contributed towards the delivery of the state plan, but not on a building project basis. There was some recognition that the procurement process can deliver additional benefits but it did not appear to be a high priority. Location determines how much indigenous and regional policies are sought to be advanced. GPs seemed to get more attention on regional projects and it was then that there was some opportunity for Project Managers to incorporate GPs as non-price criteria. Training is something that has standard clauses on all Government projects but again was not being rigorously pursued or audited. Ecologically Sustainable Development (ESD) issues seemed to be an area that the state wanted to be a major focus of the cross government initiatives in works.

Well the non price stuff is about their experience, their practice’s experience, who they are putting on the project, their methodology for delivery, their ESD management that’s becoming more of an issue now, what else is there? – Interviewee C(C)1

4.4.6 Supply Chain Management

Subcontractors are selected by lead contractors. However, for packages of work valued at over $150K subcontractors have to be prequalified. This may be relaxed on regional projects to enable the engagement of local subcontractors where there are none that are already suitably prequalified. There is a move towards approaches based on partnering principles and
some of the project managers were insistent that is how project team members have to behave on their projects. Case C(C)’s approach to supply chain management is an arms length approach where they allow lead contractors to manage subcontractors but overlay some partnering principles and seek to engage subcontractors in value adding processes. The project team often contains subcommittees of which one would be the subcontractor relationship working group that focuses on trying to get subcontractors involved in the relationship and the collaborative approach.

Regular meetings are conducted to provide feedback on how project teams are performing whilst the project is running but this is largely focused on lead contractors. The performance of lead contractors is reviewed on projects and a performance score is entered into the prequalification system which then becomes part of the selection weighting on the next project a contractor bids on. When trades or subcontractors need to be prequalified, they would get feedback directly, but there is no prequalification performance score used as part of the selection process for subcontractors. There is little formal feedback given directly to subcontractors and this tends to be done via the lead contractor. The interviewees note that there is room for improvement in their feedback to subcontractors.

We are not as good at that as what we should be (giving feedback to subcontractors) - I think we need to build on that particularly in our relationship contracts. – Interviewee C(C)2

Whilst there are no activities undertaken that the delivery agency recognises as being focused on supplier development there did appear to be one interesting initiative utilising Government staff. The Government has employed a group of experienced ex-tradesmen who visit sites and spend time with contractors, subcontractors and consultants liaising with them about the approaches they are taking, and providing advice on the constructability of designs.
Figure 4.15 highlights the responses received from the project managers in case C(C) against the dimensions of the theoretical framework. Case C(C) views VFM as entailing elements of value adding for clients but predominantly procures traditionally on the basis of lowest cost. There was mild recognition of policy by-product opportunities represented by infrastructure procurement. Awareness was shown of the tendering costs imposed on the supply side and approaches to tendering reflected this. Active management of the supply chain was recognised as important element in creating value.

**Figure 4.15: Case C(C)**
4.5 CASE D (C)

4.5.1 Demographics of Interviewees

All five respondents hold Bachelor degrees; two in architecture D(C)1 and D(C)5, two in building D(C)2 and D(C)3 who held a trade qualifications, and also one in engineering D(C)4. From Figure 4.16 it can be seen that all five interviewees were over 40 years of age, with 3 of them approximately 50 or over. Four interviewees have over 20 years experience in the public sector with D(C)3 having 8 years experience. All interviewees have over 10 years experience in procuring construction projects with D(C)4 and D(C)5 having over 25 years experience.

Figure 4.16: Case D (C) Interviewee Age and Experience Distribution

4.5.2 Procurement Operations

Case D(C) administers an accreditation system that enables accredited departments to procure their own construction (see Figure 4.17). If a department is not accredited they have to use a service provider that is accredited, this can be either the internal delivery agency or a private
sector firm. The accreditation system aims to ensure that the groups purchasing construction have the necessary expertise to do so.

Case D(C) has a prequalification system that incorporates both building consultants and contractors and classifies projects based on value. Prequalification is used to limit the number of suitable contractors bidding and minimise waste in the industry. From Figure 4.17 it can be seen that the size of projects being worked on in the internal delivery agency is on average about $10-12 million, but can range from $50,000 to $150 million. There is an initial funding approval process by Cabinet and Treasury, and then a later gateway process where projects have to go to Treasury, if they are over $10 million, for approval of the procurement approach proposed.

Case D(C) procures using a mixture of contractual approaches including approximately 60% traditional, D&C, novation and construction management (see Table 4.4). D(C)2 and D(C)3 procure, act as project managers for client departments and subcontract packages totally on the basis of lowest price.
Figure 4.17: Case D(C) Procurement Decision Model – Building Contractor
Figure 4.18: Case D(C) Procurement Decision Model – Building Consultant

Table 4.4: Distribution of Construction Contract Type for Case D(C)

<table>
<thead>
<tr>
<th></th>
<th>Traditional</th>
<th>BOOT</th>
<th>D&amp;C</th>
<th>Novation</th>
<th>CM/PM</th>
<th>On-call multi task</th>
<th>GMP</th>
<th>Full cost reimbursable</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(C)1</td>
<td>40%</td>
<td>59%</td>
<td>1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D(C)2&amp;3</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D(C)4</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>* no-response</td>
</tr>
<tr>
<td>D(C)5</td>
<td>10%</td>
<td>30%</td>
<td>40%</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.5.3 Defining Value-for-Money

All respondents commented that value-for-money is an important aspect of their procurement activities. When trying to define VFM the project managers were client focused and attempted to make sure they kept in mind what the facility will be used for by clients.
However being able to demonstrate or justify costs to other government stakeholders over the life cycle of the built asset was also seen as vitally important. The impact of Treasury on defining VFM was evident at the concept stage and through the gateway process scrutinising the approach selected.

And, we would in many ways have to respond to what our clients have rather than push our clients. The pushing policeman role is no longer if it ever was with … It's with Treasury. Treasury is the one that would drive the sort of initiative. – Interviewee D(C)1

It was felt that the opportunity to really shape value-for-money is tied to the scope of a project and its design. Hence, it was felt that there was more opportunity to influence it during the planning phase rather than once it gets to the tendering stage. Design was seen as being very important in considering both the asset's life cycle and the service outcomes delivered for clients. An overwhelming theme defining VFM was that of paying the lowest price for a specified asset. The idea is that an exact specification is built within the boundaries of estimates and a budget. VFM in practice is still largely defined as the lowest price.

If you are down a fully documented job and you have made so many decisions about what you're going to do, the opportunities for the best value-for-money almost boil down to who put the best tender in, in terms of dollars. The only other value-for-money criteria, if there are design aspects in the tender. – Interviewee D(C)1

From Figure 4.19 it can be seen that respondents generally have a low to medium level of understanding of VFM and a low to medium approach to incorporating non-price criteria in their procurement activities. D(C)2 and D(C)3 both procure solely on the basis of lowest price tender and have a limited perspective of VFM. D(C)1, D(C)5 and D(C)4 all have a moderate understanding of VFM and a moderate approach to incorporating non-price criteria on their projects.
4.5.4 Selection Criteria

The selection of building contractors is predominantly undertaken on the basis of price. The project managers feel that because contractors have already submitted some non-price information, as part of both the prequalification process, and the shortlisting process, then there was no need to ask for it again. There is reluctance by project managers to include non-price criteria. However, in instances where they are not using prequalified contractors, there might be a higher weighting given to non-price criteria. Building consultants tend to be selected on the basis of a two envelope system, non-price and then price. Non-price criteria are used as gateway criteria (pass/fail) and then selection is made predominantly on the basis of price. The split between price and non-price criteria can get up to as high as 60% price and 40% non-price, but this is reported to be rare. Design is seen as the area where it is worth introducing some non-price criteria post prequalification where it can add value to a project’s delivery. The underlying assumption is that prequalification has addressed the non-price issues and unless there is a design element involved in the project e.g. the design needs further development, or elements of constructing that design, then there is no need to look at non-price criteria again.
4.5.5 Government Priorities

All of the respondents were aware of the existence of the state’s strategic plan and broadly of its content. The alignment between the activities of a department and the strategic plan is articulated in a business unit (government department’s) plan that describes how they will contribute to the achievement of the state plan. At the level of a project manager it is not explicit as to exactly how that link works.

So in a way, there is a roundabout link to the State plan and the senior executive service level of the department, those higher level executives, need to be able to demonstrate how their work fits into the State plan. Not so much at our level. – Interviewee D(C)2

As part of getting a project funded, a case needs to be made about how a particular project aligns with the state plan. The project managers commented that the focus of procurement activities is no longer on delivering social objectives. Some Government Priorities are, on occasions, included as extra conditions on a contract, for example: regional involvement, aboriginal participation and apprentice training. Government Priorities become more of a focus on non-traditional procurements.

We do, you know, try and encourage and keep some records of apprentices and that sort of thing and we are - and the push is coming through now for aboriginal participation. A number of projects within the department are being nominated within the contracts to be aboriginal participation projects, not just every project across the board. … All those things that you referred to are in your general conditions of contract. We have environmental and safety requirements and that sort of thing they need to achieve that we keep statistics on and waste management reports and all that sort of thing that we do at our own level. – Interviewee D(C)2

Projects are not audited against the state plan government priorities, although it was suggested there are key performance indicators (KPIs) developed for projects, and project managers felt they probably align with state plan goals.
4.5.6 Supply Chain Management

The approach to supply chain management is a mixed approach containing elements of hands off and arms length. Subcontractors are selected by the lead contractors and are not required to be prequalified. There are some special circumstances where a subcontractor may be the preferred subcontractor in particular areas, but this is reported to be rare. The government does not like to get too involved with the contractor’s business of running its supply chain. However, lead contractors are encouraged to focus on the outcomes delivered by subcontractors for the Government client. There is an attempt to align the expectations of all parties on the outcomes to be delivered. Performance feedback is given as part of the processes laid out in the contract. The project and contract method dictate the sort of feedback mechanism. For traditional contracts, feedback is generally provided to lead contractors but not to subcontractors, unless there is an issue, and the lead contractor might be asked to bring a subcontractor along to a site meeting. Under the relationship/cooperation contracts the project team is given a rating and consensus is sought from the group. Under this form of contract, the head contractor is supposed to go through a similar performance feedback regime with its subcontractors. The cooperative approach to contracting contains subcontracting conditions that try to ensure that lead contractors include subcontractors as part of the relationships in terms of payment, dispute resolution, variations and claims.

In terms of access to future work, the suggestion is that there is a strong link between performance and future work, particularly when performance is considered poor.

There is a strong link between the contractor performance report and prequalification. And that totally governs their performance here, governs the number of opportunities that a contractor will be given to tender on projects. It will also, if they were to get unsatisfactory ratings here, they would be interviewed as to why their performance is unsatisfactory and with a view to removing it from the prequalification list. – Interviewee D(C)5
Figure 4.20 summarises the responses received from the project managers in case D(C) against the dimensions of the theoretical framework. In case D(C) the perspective taken to VFM was largely about defining it in financial terms and procurement was in the main based on lowest cost. There was very little recognition of the policy by-product opportunities procurement presented and little active involvement in managing the supply chain. Efforts were made to minimise tendering costs on the supply side.

Figure 4.20: Case D(C)
4.6 CASE E (C)

4.6.1 Demographics of Interviewees

Both respondents hold Bachelor degrees, one in architecture E(C)2 who also holds a Masters degree in Business whilst E(C)1 has qualifications in engineering and a Graduate Diploma in management. As can be seen from Figure 4.21 E(C)1 is 38 years old, has 12 years experience procuring construction projects and 10 years experience in the public sector. E(C)2 is 57 years old with 35 years procurement experience and 4 years public sector experience.

Figure 4.21: Case E (C) Interviewee Age and Experience Distribution

4.6.2 Procurement Operations

The approach utilised in Case E(C) is distributed and decentralised; government departments are empowered to procure their own construction projects. Since April 1996 the Departments have employed officers with specialist knowledge to facilitate this function. The agency formerly responsible for delivery, whilst no longer procuring, maintains a centralised building policy role and administers the prequalification system.
As a result, the practices between departments vary and there is little commonality in their procurement activities. Figure 4.24 shows that one department has outsourced the bulk of these procurement activities to a private sector provider who employs a predominantly traditional approach to procure construction with separate contracts for designers and builders.

Once we’ve got the tender documents finished, and we have the program manager for all of this is (private sector firm) … And they manage the whole thing in a sort of, they have very good overview system; they’re involved all the way along … They will then get a list of builders who are interested in tendering on say a job like this. And they may get twelve or fifteen; they can get quite a lot. – Interviewee E(C)2

A small section (6) within the department is responsible for rolling out $1.7 billion in facility upgrades across the state, in conjunction with regionally based offices and project managers. They are examining the potential of PPPs as a method of delivering facilities where a maintenance period is built into the construction contract.

For Department 1, consultants are obtained from the prequalification register administered by the centralised building policy department.

For Department 2, consultants are required to write to the department they seek work with, and then are interviewed by the department. They are then required to become prequalified with the central building policy department of government.

And we have interviews every six months or so and we discuss the projects that we do, the typical projects, and see whether they’re interested, what service we expect from them, and an indication of the fees that we pay and that sort of thing, and ask if they would like to go on the list. They have to then go through a process of being approved by the (centralised building policy) department as having the adequate insurances and all that sort of thing. So then they get onto our list and they sit on the list. – Interviewee E(C)2
In Department 1 the smallest project would start at $4 million and the upper limit is not set, for example a PPP just undertaken was worth $400 million. For Department 2 the projects tend to be in the $2-10 Million range, and there are about 7 projects underway using a PPP approach.

The Department is now doing some PPP projects. And one of the benefits of course is that’s a lease arrangement. So you don’t actually pay for the building. – Interviewee E(C)2

Figure 4.22: Case E(C) Procurement Decision Making Model – Building Contractor (1)
Figure 4.23: Case E(C) Procurement Decision Making Model – Building Consultant (1)

- **Building Consultant**
- **$25 K**
  - **N**
  - **Y**
- **$150 K**
  - **N**
  - **Y**

  - **One written quote**
  - **Three written quotes**
  - **Three written tenders by public tender or prequalified suppliers**

Figure 4.24: Case E(C) Procurement Decision Making Model – Building Contractor (2)

- **Building Contractor**
- **> $???</2>
  - **N**
  - **Y**

  - **Facilities Group**
  - **Finalised Tender documents go to Private Sector firm who largely manage the tender process on the Govs behalf recommending 5-6 to tender and then preferred tenderer**

  - **$2 – 10 Million**
    - **N**
    - **Y**

    - **PPP – 7 projects on the go – 1% of projects, 5% of value**
    - **Traditional 99%**
4.6.3 Defining Value-for-Money

Both respondents indicated the importance of procuring VFM. Their aim as procurement professionals is to define clearly and up front what they are looking for because VFM is not a fixed concept and needs to be specified on a project-by-project basis. Generally this means financially constraining construction within the boundaries of a cost plan and making sure the internal quantity surveyor concurs with the rates proposed. Price is an important factor
shaping VFM but not the only aspect. VFM must also consider any innovation that has been proposed either by architects or by builders.

The cost is one aspect of it, but definitely not the only aspect. As I said, innovation, value adding, whoever tenders, do they come up with an innovative way of delivering the same thing at a lesser cost? It can be previous experience, it can be a particular technology that they propose to apply. It’s quite a number of things that are considered. Our objective is to actually be up front and specify, help them to work out what we’re looking for, and that’s an ongoing sort of task. I don’t think anyone nailed it one hundred per cent as yet. – Interviewee E(C)1

VFM may also incorporate companies that work locally and source materials locally, but it is also an ability to deliver those components within the constraints of a cost plan. Whilst VFM is viewed as being about value adding and innovation it is clearly intended from the Government’s perspective, that the innovation helps save money or means they get more for the same money. Another theme to emerge was that VFM is about building facilities that create outcomes for client department within their policy domains.

It’s simply getting the best educational outcome possible for the funds allocated; it’s as easy as that. Yes, it’s very simple. – Interviewee E(C)2

As can be seen from Figure 4.26 the VFM knowledge of the interviewees in Case E(C) was relatively low and the procurement approaches were largely using the traditional method and little or no non-price criteria. It can also be seen that E(C)2 had a low level of understanding of VFM and no procurement activities using non-price criteria. On the other hand E(C)1 had a slightly broader understanding of VFM and a moderate use of non-price criteria.
4.6.4 Selection Criteria

In Department 1 non-price criteria such as value adding, innovation, experience, financial capacity and OH&S practices are included when selecting building contractors and it was noted by the interviewee that these are difficult selection criteria. Non-price criteria are weighted at approximately 40% and price at approximately 60%. Price criterion is awarded on how a bid compares to a pre-tender estimate. If it’s lower than the benchmark then that bid gets the full score, if it’s within a range of 10% above it gets 80% of the score, if it’s more than 20% above it gets a score of zero.

Generally an expression of interest would be circulated to what were deemed to be an appropriate pool of contractors and then a shortlist of contractors would be drawn up with a minimum of three tenderers.

In the case of Department 2 a committee of local stakeholders who represent those inhabiting and using the facility are involved in interviewing consultants from a list of architects provided by the Department. They then advise the Department which one they wish to work with.

Now what we do is we then give the (client) say, three architects names from the list, and we say to the (client) go and interview these three architects and see which one you would like to
work with. So that’s how they get appointed, and then they enter into an agreement – the (client) and the architect into a client-architect agreement. – Interviewee E(C)2

The criteria did not appear to be formalised, and seems informally to be focused on their proposed approach to a project and their rapport with clients.

For Department 2 that outsources procurement to a private sector firm selecting building contractors is conducted differently. The private sector firm receives a list of approved building contractors from the centralised building policy department, along with the architect(s) it assesses the list and recommends a shortlist of 5-6 contractors to prepare tenders. The private sector provider suggests the selection criteria and then an agreement is negotiated between the department and the firm about the weightings to be allocated to each criterion. It was suggested that criteria could include whether building contractors were registered with government, the volume of work they do, the traditional size of projects, their insurance and the past experience with the builders. The private sector firm evaluates the tenders and makes a recommendation to the department as to the preferred building contractor.

So then with the architects they assess all of these, and again they have criteria on which to assess them – whether they’re registered with the Department, the volume of work they do, the traditional size of projects, their insurance, and all that sort of thing. And also our past experience with those particular builders too is important. (The private firm) will then write to us and recommend five or six tenderers. And then when tenders close again there is an assessment done by (the private firm), they get a report from the consultant then go through it. And they’re extremely good they do a magnificent job in really sort of checking that everything lines up and conforming tenders and all that sort of thing. And then out of all that, sometimes there are negotiations, out of all that they write to us and make a recommendation and they say we recommend you accept this tenderer. – Interviewee E(C)2
4.6.5 Government Priorities

Department 1 did its own procurement. They acknowledged the opportunities that procurement contributed to the delivery of government priorities but asserted that earlier in the process, in the planning phase was where the most significant impact could and should be made.

It goes actually a step back, procurement it’s possibly even too late or you’ve got a much better opportunity to implement those policies during the planning stage … I mean we went locally to build the (facility). And in fact we opted to go for a public tender to give opportunity to local builders as well because they’re not actually registered … so we’re trying to take that into account. The point I’m trying to make is I think you’ve got more opportunity to make an impact earlier in the process. – Interviewee E(C)1

An important aspect when applying for funding is demonstrating how well a project’s procurement fits into the overall objectives of Government. In Department 1 of case E(C) the planning phase was viewed as being the appropriate time for considering the overall policy objectives of Government. Consideration at this stage allows these policy objectives to be addressed and costed. Their subsequent inclusion during the procurement phase can lead to budget creep and sometimes creates the perception for Treasury that a project is not delivering VFM.

Where a project is located in a regional area, and costs over $1 million it must comply with a regional/local content policy, in the capital city the threshold is $3 million. Firms are required to articulate how they will contribute to the state’s development by using local materials, labour etc. Apart from this regional/local content policy there are no other standard clauses in contracts relating to GPs. An overriding imperative is the need to be financially responsible; in government this creates a price pressure and a department is much more likely to consider
an initiative that has a direct benefit to its portfolio as opposed to trying to include objectives of other jurisdictions.

Officers in Department 2 did not appear to be overly aware of the Government Priorities as identified in the state plan. It was assumed there was an alignment between their procurement activities and the plan, but that it was the responsibility of a higher manager to ensure compliance.

   Look I’m not really familiar with the goals to be perfectly honest. (Document containing priorities shown to interviewee). Well I think all of those points are in fact definitely shared goals that are within what we do. They all really occur in our work in everyday occurrence …

   So I think they really are all being achieved very well. – Interviewee E(C)2

Projects are not audited against the GPs, however they feel they are being achieved well.

   Yes, they’re embodied in our thinking … I don’t suppose they really are - I suppose the definition of audit I suppose. I’m not quite sure how to reply to that one. – Interviewee E(C)2

4.6.6 Supply Chain Management

In both departments they adopt a “hands off” approach to supply chain management. They want projects done well and for people to work together but don’t get involved in the relationships between lead contractors and subcontractors. Subcontractors are largely selected by lead contractors and are not required to be prequalified. In some instances contracts state that lead contractors will obtain prices from particular subcontractors or shall use one of a group of firms in a particular classification of work. There are also times where they feel there is a package of work that needs to be controlled and then they might step in and carry out certain classifications of works directly or under direct control.

Supplier development was not seen as an issue for the department outsourcing procurement. They did not view subcontractors as wanting to be engaged. They viewed a good building
contractor as managing subcontractors whose work is largely a compartmentalised section to be completed before moving to another project.

Because when you get a good builder the good builder manages all that so well. I can’t think of any problem ever on any of my jobs, hundreds of them, where there’s been a poor working relationship between subcontractors that have affected one another that it’s been to the detriment of the job. I just don’t think it ever happens. With a lot of the subcontractors they all have little sort of walls around what they do; they just do one thing and buzz off. They don’t actually rely on a lot of cooperation from other subcontractors, if you see what I mean. – Interviewee E(C)2

The other department felt they did undertake supplier development activities but could not think of an example of it.

I’m sure we do, I can’t think of a particular example. – Interviewee E(C)1

Where there are issues between the lead contractors and subcontractors it is up to the parties to sort them out.

The approach to performance feedback seems informal and focused on getting the project completed on time, and having regular dialogue about progress towards timely completion. Regular feedback occurs through site meetings so there is a regular dialogue between the client and the contractor, but the feedback is focused on budget, time and quality.

Well yes obviously they do get regular feedback through you’ve got contractors; you’ve got site meetings and stuff. So there is a dialog between the client and the contractor on a regular basis. We tend to do lessons learned, but that would be more for consultancies or for the planning, yes … For the construction not really, I mean once you move into a construction it’s the budget, time, and the quality that’s gets recorded and monitored. And if they all are up to scratch, if not then we deal with it through standard project management tools that are set in contracts. – Interviewee E(C)1

However, subcontractors do not get direct feedback and rely on the lead contractor for feedback. It is suggested that firms will get reduced access to future work if an organisation
performs poorly but it does not seem a strong link. There is some conjecture about whether having a strong link between performance and future work opportunities is in fact the right thing for government to do in terms of having a transparent selection process. They also comment that the description of what is a good performance and bad performance is somewhat vague.

I’m not sure how you define strong, there is a link … I mean also whether it should be or shouldn’t it is another issue. Again we’re dealing with a subjective matter and we’re trying to have a transparent selection process, you know there would have to be a mechanism to establish the sort of criteria for what is a good performance, what isn’t. – Interviewee E(C)1

Figure 4.27 demonstrates the responses received from the project managers in case E(C) against the dimensions of the theoretical framework. The perspective taken to VFM in case E(C) was narrow and largely based on price. The procurement approach was heavily focused on lowest cost and there seemed to be little thought given to minimising tendering costs on the supply side. Policy by-products were not a regular part of the equation and the supply chain was not viewed as a supply chain nor needing to be actively managed.
Figure 4.27: Case E(C)

- Broad Definition Outcomes
- Recognising Opportunities for Policy By-products
- Active Supply Chain Management
- Optimised Tendering to minimise waste

Infrastructure Procurement

- Definition of Value-for-Money
- Policy Objectives
- Supply Chain Management
- Tendering Costs

Narrow Definition solely in terms of $’s
Focused solely on Direct Policy Activities
Passive Supply Chain Management
Adding Cost without commensurate value

Lowest Cost Tender

Public Value
4.7 CONCLUSIONS – CROSS CASE ANALYSIS CONSTRUCTION

The cross case analysis of the construction cases is structured around the theoretical model and addresses the five areas identified in the literature review: Infrastructure Procurement, Value-for-Money, Policy Objectives, Supply Chain Management and Tendering Costs.

4.7.1 Infrastructure Procurement

There are many similarities in the way the States procure building construction projects (as illustrated by Table 4.6).

Table 4.6: Cross Case Comparison Construction

<table>
<thead>
<tr>
<th>Case</th>
<th>Centralised Works Dept</th>
<th>Tied Prequalification for consultants</th>
<th>Prequalification for contractors</th>
<th>Gateway processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (C)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>B (C)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>C (C)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>D (C)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>E (C)</td>
<td>❌</td>
<td>❌</td>
<td>✔</td>
<td>❌</td>
</tr>
</tbody>
</table>

* - can use either internal government delivery agency or a private firm

As can be seen from Table 4.6 in four of the five States [A(C), B(C), C(C) & D(C)] construction projects are procured for client departments by a delivery agency. In cases B(C) and C(C) client departments are tied by legislation to procuring through an internal project delivery agency, whilst in cases A(C) and D(C) client departments are able to choose between the internal delivery agency and private sector firms. In case D(C) client departments must use an accredited provider; this can be a private firm or public sector agency. In case A(C) there is no accreditation requirement and it was suggested that client departments use the centralised government agency due to established working relationships. Case E(C) has a centralised building policy agency, but no centralised delivery capacity, so government
departments have been empowered to procure their own construction projects using their own staff for the last 14 years.

In nearly all cases they rely on a two-stage procurement process where both consultants and lead contractors are required to be prequalified before they are eligible to tender for projects. Case C(C) also requires subcontractors working on their projects to be prequalified for packages of work valued at over $150,000.

Gateway processes are used in every case. In cases A(C), B(C) and C(C) they are undertaken within the delivery agency that focus on scrutinising the contractual approaches, selection criteria, weightings and evaluation approaches proposed by project managers. In cases A(C), D(C) and E(C) there are also treasury gateway processes that scrutinise a range of details including project justification, budget and contractual approaches.

**Table 4.7: Frequency of Traditional Procurement Approach**

<table>
<thead>
<tr>
<th>Case</th>
<th>Traditional</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (C)</td>
<td>55-60%</td>
</tr>
<tr>
<td>B (C)</td>
<td>90-99%</td>
</tr>
<tr>
<td>C (C)</td>
<td>70-80%</td>
</tr>
<tr>
<td>D (C)</td>
<td>60-65%</td>
</tr>
<tr>
<td>E (C)</td>
<td>EC1.70%</td>
</tr>
<tr>
<td></td>
<td>EC2.98%</td>
</tr>
</tbody>
</table>

As can be seen from Table 4.7 Cases B(C) and E(C)2 undertake procurement via an almost entirely traditional approach. The rest of the cases undertake more than half of procurement in a traditional manner but engage in more non-traditional procurement systems. Case A(C) uses some D&C and managing contractors. C(C) also uses managing contractors on complex projects and brown-field sites. D(C) undertakes D&C, Novation and direct management of some of their own works on brownfield sites, whilst E(C)1 does some D&C and BOOT on large projects. Managing contractor approaches are popular in the sector when trying to gain
benefits from integrating the design and construct disciplines on projects with a degree of complexity.

Table 4.8: Project Managers Public Sector Experience, Procurement Experience, and Mean Age

<table>
<thead>
<tr>
<th>Case</th>
<th>Mean Public Sector Experience</th>
<th>Mean Procurement Experience</th>
<th>Mean Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(C)</td>
<td>35</td>
<td>22.75</td>
<td>53.5</td>
</tr>
<tr>
<td>B(C)</td>
<td>25.66</td>
<td>22.33</td>
<td>52.33</td>
</tr>
<tr>
<td>C(C)</td>
<td>27.75</td>
<td>27.75</td>
<td>49.75</td>
</tr>
<tr>
<td>D(C)</td>
<td>23.4</td>
<td>19</td>
<td>48.4</td>
</tr>
<tr>
<td>E(C)</td>
<td>7</td>
<td>23.5</td>
<td>47.5</td>
</tr>
<tr>
<td>Overall</td>
<td>25.63</td>
<td>23.68</td>
<td>50.52</td>
</tr>
</tbody>
</table>

Figure 4.28: Public Sector Experience by Project Managers

Figure 4.29: Age of Project Managers procuring Buildings
Table 4.8, Figure 4.28 and Figure 4.29 show that the staff project managers procuring projects on behalf of Government are mature and experienced, approximately 50 years old, with 20+ years work experience in both procurement and the public sector. The exception to this was case E(C) where the two project managers interviewed had significantly less experienced in the public sector environment and in case A(C) where the cohort of project managers were extremely experienced with an average 35 years experience in the public sector.

4.7.2 Value-for-Money

None of the project managers from the five construction cases offered a formal definition and there was no discernible difference between the cases as to how much of an objective value-for-money was. Instead a consensus of its highly important nature and universal agreement about the importance of value-for-money to their work emerged. Project managers described it variously as a huge objective, an important aspect of procurement, a responsibility they had to the public, of critical importance, and part of everything they do.

The definitions of Value-for-money that emerged were focused variously on financial aspects of projects. The definition of Value-for-money adopted on a project is influenced by a range of factors including the procurement approach being selected, client department preferences and the level of project complexity.

Figure 4.30 illustrates that a large amount of procurement is undertaken on the basis of lowest cost and in all five cases the use of non-price criteria is at most only moderate. In two cases E(C) and B(C) the procurement approaches appeared to be strongly influenced by the preferences of the Government overall. In cases where non-traditional procurement approaches are used, the perspective of Value-for-money is increasingly not linked solely to a financial conceptualisation.
4.7.3 Policy Objectives

The selection criteria employed when procuring projects provide insight into the policy objectives that Government is seeking to address.

4.7.3.1 Selection Criteria

Given the frequency of traditional procurement in cases B(C) and E(C), the procurement of building contractors is predominantly made on the basis of price criteria. In many of the cases, when procuring traditionally, project managers believe that prequalification requirements have addressed non-price criteria [B(C), D(C)] and therefore project managers are reluctant to include additional non-price criteria.

In E(C) where procurement is decentralised and undertaken in departments the criteria vary between departments. E(C)1 uses a mixture of price and non-price criteria, whereas in E(C)2 the development of selection criteria is outsourced to a private firm that, in consultation with the department, develops criteria and provides a recommendation of which building
contractor to use. The preference in E(C)2 is for traditional procurement based on the primary selection criterion of price.

B(C) and D(C) claim that they use non-price criteria less formally at an early stage, as pass or fail criteria when determining the shortlist of whom they want to tender on a project. A(C) has standard non-price criteria related to Government Priorities on its traditionally procured projects set at 5-10%, and C(C) has 5-10% non-price criteria related to performance on previous projects.

Selection criteria are influenced by client departments, but can also be influenced by internal experts within the delivery department or treasury officials who administer gateway processes.

Where procurement is not tied to the central delivery agencies as in cases A(C) and D(C) client departments potentially have more influence over the selection criteria employed, as the delivery agency relies upon continued business for its existence. Alternatively in case E(C) because the agencies procure for themselves they are free to use whatever criteria they deem to be appropriate to successfully deliver the project.

In all cases non-price criteria are a stronger feature of non-traditional procurement and can vary significantly e.g C(C) described it as potentially entailing 50-70% non-price; 30-45% price; 5-10% performance score.

Overall, the use of non-price criteria is less prominent in the selection of building contractors, whereas in a higher percentage of cases they are used as part of the overall criteria when selecting building consultants. However the non-price criteria are not always used as
formalised selection criteria, and can be informal qualitative assessments of a building contractor’s expertise, experience and price proposed as was the case in C(C), D(C) and E(C). A(C) commented that a 50/50 split between price and non-price criteria was used for selecting consultants, whereas B(C) believes 50% of the time decisions are not made on the basis of price. This view of non-price criteria being more frequently part of the building consultant selection reflects the view that design plays a predominant part in shaping the global/overall value achieved from a project.

4.7.3.2 Government Priorities

Table 4.9: Cross Case Analysis of Government Priorities/Strategic Plan Existence and Awareness

<table>
<thead>
<tr>
<th>Case</th>
<th>Government Priorities</th>
<th>Strategic Plan</th>
<th>All Project Manager aware of Government priorities and/or Strategic Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(C)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>B(C)</td>
<td>✓*</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>C(C)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>D(C)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>E(C)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

* - researcher encouraged to refer to election promises as Government Priorities

As Table 4.9 shows, all States had identified Government Priorities. However, in the case of B(C) the researcher was directed to the election promises as the best representation of Government Priorities. In case A(C) Government Priorities existed but there was no overarching state strategic plan, whilst case B(C) also has no overarching state strategic plan.

Standardised Government Priority related non-price criteria in the area of training and local industry participation were set at 5-10% in case A(C); regional projects attract 10% weighting rather than 5%. Other Government Priorities mentioned were indigenous employment and public art. In case C(C) project managers seemed to think that training was a standardised
requirement on projects although were unsure as to how that happened. Whilst not incorporated as standard non-price criteria on projects, the project managers felt that Government was broadly trying to achieve Environmental goals via projects, but they provided little evidence or examples to support this view. In cases B(C) and D(C) respondents commented that there were some policies in the areas of training, public art and indigenous involvement, whilst E(C) commented that if a project is valued at over $1 million in a regional area, or $3 million in the capital city, they have to comply with local content policy.

Location again determines GPs, and regional projects seemed to provide project managers with more scope to influence GPs criteria. D(C) commented that the emphasis of procurement has moved away from delivering social objectives.

A consistent assumption made by the project managers across the cases was that in order that a project gain funding approval, it needed to be able to demonstrate that it aligned with Government priorities. This demonstration of the link between a project and Government Priorities often happened within a client department before a project with a budget attached was forwarded to the delivery agency for procurement. The project managers also explained that this alignment generally took place at a level higher within the organisation than those responsible for procuring projects.

For the cases where projects are not tied to the internal delivery agency, it seemed somewhat unlikely that a private sector firm will recommend the department procures in a manner that advances Government Priorities. However, when procurement is tied to the internal delivery agency the project managers feel that the focus of the departments they are procuring for is not in creating policy by-products in these Government Priority areas.
In none of the five cases were projects audited against Government Priority criteria and when policies were pursued it was in a somewhat ad-hoc manner and seemed to be influenced by the project manager skill set and experience.

4.7.4 Supply Chain Management

Table 4.10: Comparative Supply Chain Approaches

<table>
<thead>
<tr>
<th>Case</th>
<th>Lead Contractors Select Subcontractors</th>
<th>Prequalified Subcontractors</th>
<th>Feedback given to Lead Contractors</th>
<th>Feedback to subcontractors</th>
<th>Supplier Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(C)</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>B(C)</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>C(C)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>D(C)</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>E(C)</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>

Overwhelmingly, the approach to SCM is consistent across the cases (see Table 4.10). Lead contractors select subcontractors, who they propose for approval by government, and who are rarely not approved. There is some talk of partnering on non-traditional projects, but this is largely between government and lead contractors. In A(C) government mandates that subcontractor selection by lead contractors is made on the basis of value for money, which they define in this situation as lowest price. Lead contractors are required to show cause if they did not select the cheapest conforming bid. B(C) comments that on non-traditional projects, a lead contractors ability to engage suitable subcontractors might be incorporated as non-price as part of the selection process. However, B(C) rarely undertook anything other than traditional projects.

C(C) requires subcontractors to be prequalified for packages of work worth over $150,000K. However, this can be relaxed on regional projects to engage local subcontractors. In case C(C) there was a strong desire from project managers to pursue partnering principles on their projects.
Feedback is provided both formally and informally to lead contractors but government is reluctant to provide feedback to subcontractors because that is not a contractual relationship and they do not want to insert themselves into their lead contractor’s role. When subcontractors are prequalified, as in C(C), or written into a non-traditional contract, they will receive formal feedback. In other cases they may receive informal feedback, but this would generally occur when they were not performing at a satisfactory level.

In almost all cases the relationship between performance and future work is not strong. D(C) claims that there is a strong link between performance and opportunities for future work and that a contractor’s or consultant’s performance governs their future opportunities. In all cases unsatisfactory ratings can see suppliers removed from prequalification lists, but this rarely happens. In case C(C) performance on previous projects is used as a non-price selection criterion, but they do not use prequalification scores for the subcontractor selection process.

There is limited supplier development activity by government as a client apart from attending association meetings and communicating with contractors about future projects. However, C(C) had an interesting supplier development approach in which experienced tradesman employed in surveillance roles by government spend time with consultants on projects and pass on their knowledge on constructability etc. One of the respondents in E(C) did not view the supply chain as wanting to be engaged which in some respects explains the somewhat relaxed approach to managing the supply chain.

4.7.5 Tendering Costs

In most cases there was an awareness of the impact that their tendering processes had on the tendering costs imposed on the supply side. In cases A(C), B(C) and E(C)1 there were contract value thresholds in place for both building consultants and contractors that mandated
the procurement process to be used. In cases C(C) and D(C) thresholds existed for the selection of building contractors. In E(C2) there were no thresholds used and the approach of the private firm undertaking the department’s procurement was to encourage price based competition from a large pool of contractors. It is likely that this type of approach imposes unnecessary tendering costs on the supply side. The existence of thresholds acts to reduce the tendering costs imposed on the supply side. As projects get more complex, and larger in dollar value, the thresholds restrict the numbers submitting full bids. Threshold based approaches recognise that bidding on larger and more complex projects involves higher tendering costs for contractors and consultants.

Generally where thresholds existed, efforts were made to shortlist in order to limit the number of bidders on projects. Shortlisting on the basis of non-price criteria was a significant part of the selection process on non-traditional projects, so as not to waste supply side resources tendering on projects where the tendering costs are likely to be high. There was little awareness demonstrated, in any of the cases, of the tendering costs involved with the different procurement approaches used by Government and the cost of maintaining prequalification registers.

4.8 CONCLUSIONS

Tables 4.6-4.10 and Figures 4.28-4.30 demonstrate the many similarities within the cases. Case E(C) varies the most in that it procures infrastructure in a decentralised manner, whilst Case C(C) seems more engaged with attempting to manage its supply chain.

The propensity for traditional procurement approaches in all cases is high, and, as a result, value-for-money is largely defined financially and operationalised as selecting the lowest
cost. The risk aversion of Governments perhaps mandates that prequalification be used to provide confidence when government procures on the lowest cost basis.

The impact of procurement in terms of the tendering costs inflicted on the supply side is generally considered. However, there was little evidence to suggest that Government is conscious of the tendering costs involved with its tendering approaches and prequalification registers.

Only case A(C) contained an active approach to procuring Government Priority policy objectives via the procurement process. Other cases suggested that this was the way things were done, but did not appear to have consistent methods of achieving it.

Chapter 5 presents the results from the roads cases and concludes with cross-case analysis of the themes emerging from the roads cases.
CHAPTER 5 : WITHIN CASE RESULTS - ROADS

5.1 INTRODUCTION

Chapter 5 presents the within case results for the five cases drawn from five Australian State Government Roads Agencies. The results are presented in themes related to the five primary research questions. Similar to Chapter 4, detailed case analysis containing excerpts from the interviews is presented for the first case C(R). For cases A(R), B(R), D(R) and E(R) similarly in-depth and detailed analysis was undertaken from which the summary results are presented here. Sections 5.2-5.6 highlight the results and analysis of the individual construction cases, whilst section 5.7 focuses on the conclusions drawn from the cross case analysis of the construction cases.

5.2 CASE C (R)

5.2.1 Demographics of Interviewees

From Figure 5.1 it can be seen that three of the project managers [C(R)1, C(R)3 & C(R)4] have over 25 years public sector experience, whilst C(R)2 has 12 years experience. Apart from C(R)3, who spent 3 years in the private sector, the other respondents are career civil servants. Three of the project managers were moderately experienced at procuring roads projects with 10 years or less experience [C(R)1, C(R)2 & C(R)4], whilst C(R)3 has 20 years experience procuring projects. All four respondents hold Bachelor Degrees in Civil Engineering, with C(R)1 also holding a Masters Degree in Business.
5.2.2 Procurement Operations

Case C(R) has a regional office structure whose responsibilities are largely to oversee and operate the road network in their region, and administer maintenance contractors. Regional offices do not procure significant works, and instead become clients of the centralised major projects office. Projects tend to range between $2 million and $50 million, although occasionally there are larger projects. A recommendation is made by the Department as to how a project should be procured, and then this is passed to the Minister who has a cabinet delegation to award projects up to about $11 million.

A prequalification system exists that requires contractors to submit a range of information for assessment about company resources; financial, human resources, track record, and certifications in the areas of quality, safety and environment. The prequalification system contains various classifications of works including road building, bridge building, signage, asphalt, pavement marking and quarry materials. The system also contains levels that range from works of low value and low complexity up to works of high value and high complexity. To become pre-qualified for road building a contractor needs to have undertaken small
projects, perhaps substantial council subdivisions or the equivalent. Prequalification enables the Government to target and invite bids from the appropriate band (classification of works and value) of tenderers within the prequalification system. However, the Government’s preference is to publicly advertise, particularly major projects, to show the market the opportunities available.

As detailed in Figure 5.2 a range of dollar value thresholds impact on the tendering process. Historically all procurement has been undertaken using a traditional approach, which is often referred to as ‘construct-only’ in the roads sector and only in the last 5-6 years has non-traditional procurement been undertaken.

Projects below $10 million tend to be procured using a traditional approach. The organisation is aware of, and attempts to minimise, the tendering costs on Government projects and uses a prequalification system to target appropriate contractors.

D&C is very expensive for tenderers … so you don’t do a D&C lightly, and it’s only when there is a significant opportunity for innovation from the contractor’s side of things that outweighs the cost of having three tenderers. – Interviewee C(R)1

It is a challenge to get Treasury to buy-in on non-traditional, relationship based procurement approaches.

It is meeting a lot of treasury resistance at the moment, because they can’t work out how they can demonstrate Value-for-money. From treasury’s point of view they think construct only or maybe D&C gives us, or government the best bang for the buck. – Interviewee C(R)2.

A prequalification panel exists for consultants; it assesses a range of criteria including: management, track record, human resources, and quality systems. The approval process for consultant expenditure is slightly more relaxed because the contracts awarded are generally not as high in value. As can be seen from Figure 5.4 contracts up to $10-20,000 in value can
be quickly awarded to consultants, without an open competitive tendering process, to expedite projects.

5.2.2.1 Summary

Case C(R) uses a highly centralised approach to procuring construction projects. As can be seen from Figure 5.2 projects valued at under $2 million are procured by a regional office. If a project’s value is estimated to be worth $2 million or more, it will be procured centrally by the major projects area. Projects under $10 million are generally procured on a construct-only basis. From Figure 5.2 and Table 5.1 it can be seen that over 80% of roads projects procured by the interviewees were procured traditionally (construct-only). The authorising environment (Treasury) has a preference for traditional procurement as they view it as the best way of guaranteeing VFM. The Government is aware of the expenses incurred by contractors in submitting tenders, particularly on the larger non-traditional jobs, and tries to match projects to appropriately prequalified contractors and limit the numbers bidding by shortlisting before inviting full tenders. Further, they do not enter into non-traditional projects without considering whether a project has a scope that fits with a more innovation seeking approach.
Figure 5.2: Case C(R) Procurement Decision Model – Building Contractor
5.2.3 Defining Value-for-Money

All respondents viewed value-for-money as a major objective of their procurement activities.

I think value-for-money envelops or encompasses the whole thing … it underpins the whole process what we are achieving is value-for-money. – Interview C(R)3

Historically, the approach to VFM has been that of lowest price, but the culture is gradually shifting to embrace a broader definition of value.
We've definitely moved away from lowest price … and I guess it’s been the Government’s thinking, or the Government’s acceptance of looking at non-price criteria, where now we spend a lot of time looking at non-price criteria really to get value-for-money. – Interview C(R)2

Overarching Government procurement rules mandate that project managers must consider whole-of-life costs when purchasing. One respondent cited an official definition of value-for-money that focused on achieving objectives.

I can give you the official definition … the fulfilment of objectives for the lowest whole-of-life cost, maximisation of the objectives – Interview C(R)1

A strong theme to emerge from the data was that of VFM being the best outcome for the lowest cost.

We try and ensure that we do not overpay for something but we try to get the best possible outcome for the lowest possible cost, that’s the simplistic definition of value-for-money. – Interview C(R)3

The scope of a project, and hence the design discipline was viewed as a major opportunity for value creation because it shapes VFM on any particular project.

When somebody says we need a road to go from point A to point B then they will make a decision about probably design standards and the scope of the project, and that’s where cost cutting tends to happen. And that is fair enough, but once you say it will be two lanes with a sealed shoulder kind of thing then that’s what gets built. But you might, should have actually had four lanes might have been the answer because in 20 years you will have to come back and widen it so that’s where those things tend to get considered a bit or you continue maintaining a road that has passed its use by date instead of building a new one. – Interview C(R)1

As can be seen from Figure 5.4 the project managers interviewed in case C(R) had a moderate to high level understanding of VFM. Approximately 80% of procurement undertaken by C(R) is done in a traditional manner focusing predominantly on price which explains their low to medium use of non-price criteria (see Figure 5.4 and Table 5.1).
5.2.3.1 *Summary*

Project managers view VFM as an all encompassing objective of their procurement activities. When procuring they are aware that taking a life-cycle perspective is mandated and that ultimately VFM is about how well an asset helps Government achieve its’ objectives. The official definition focused on exactly that; achieving objectives. It was recognised that the scope of a project has an enormous impact on how well a Government meets its’ objectives. It is at the planning stage when the scope is being developed through the design process that VFM is largely shaped on a project. Once a decision is made on scope the objectives that can be achieved from any asset have been somewhat predetermined and constrained. Increasingly, non-price criteria are being used in procurement and there is widespread recognition that late completion, variations and claims do not represent VFM. Respondents believed that politicians have an important role in defining VFM so that they, as project managers, are empowered to procure on a basis that is acceptable to their political authorisers.

5.2.4 *Selection Criteria*

Building contractors are selected on a combination of price and non-price criteria.

> Generally speaking, the more difficult it is to define something in your contract, the more likely you are to look at the non-price assessment. – Interviewee C(R)1
Using non-price criteria is often related to the complexity of a project, and used less on projects of low value and low complexity. On traditional projects non-price criteria can be set at low levels (5-10%). For example, if a project involves adding another lane along side an existing piece of road then the weighting is probably 90% price and 10% non-price criteria.

When you are on a construct-only (project) then the non-price you don’t value very high because that doesn’t matter. – Interviewee C(R)4

On a construct-only project of moderate complexity and moderate value, the breakdown would be 75% price and 25% non-price criteria. The types of non-price criteria considered include; track record, methodology, the proposed team, appreciation of the principal’s and client’s requirements, and how they will introduce and optimise innovation.

If a contractor, who has been difficult to work with previously, submits a bid then that bid can be risk adjusted based on the extra resourced needed to manage them or their claims history. On non-traditional projects, where non-price criteria might be weighted more heavily than price, there is still a process of comparing financials to independent and historical estimates.

So that probably ensured … that we had made the best efforts to achieve a non-competitive price that was acceptable. – Interviewee C(R)3

A two-stage process is used on high value projects where at the first stage non-price criteria are assessed separately and then at the second stage price criteria are assessed to select a single contractor or to shortlist preferred contractor(s).

We will go through and get them to submit non-price in one envelope and then price in another envelope and then we have the prices locked away, still sealed until we finish the non-price evaluation. So we go through everyone’s non-price criteria and score all of them and then we go to the stage two which is a price assessment … we end up with a preferred contractor. – Interviewee C(R)2
When selecting consultants non-price criteria attract a higher weighting and can be set around 75% or higher. The main three non-price criteria used are past experience, approach to the task, and the staff nominated.

I am doing a couple for consultant designers and that is basically 100% non-price, or the other; best team, track record, availability, history, and price is a minimal amount. – Interviewee C(R)2

The organisation predominantly uses three evaluation approaches when procuring building contractors and consultants. When the purchase is a straightforward element, for example, quarry materials, a comparative price approach is used, which is essentially the tendered price plus any adjustments. When selecting consultants, a matrix method is used which converts price to points and then compares the various bidders on points. For construction works, an adjusted comparative price approach is used where price is adjusted based on performance against non-price criteria.

We basically pick the best one for the job after a bit of careful thought. Having said that, each of the methods lends itself to different types of jobs. So a lot of the time you will get a choice between one and two methods and then it’s a bit judgment and experience with what the best one is. Then we also go through and work out what the non-price criteria are and, how we are going to weight them and how we are going to score them. – Interviewee C(R)2

5.2.4.1 Summary

On traditional projects, non-price criteria are weighted at about 5-10% for contractors unless there is something complex about the nature of the work that warrants a higher level of non-price criteria. When selecting contractors on non-traditional projects non-price criteria will have a higher weighting. A two-envelope system is frequently used for selecting contractors on non-traditional projects, where non-price is assessed first independently, and then price is assessed. Consultants are selected on a mixture of both price and non-price criteria and it is common for non-price to be a larger component in their selection. Differing evaluation
methods are used to evaluate bids depending on the nature of the purchase. The experience and judgement of a project manager is important when selecting which evaluation approach to use on a particular project. After having determined selection criteria, weightings and an evaluation approach, a project manager is forced to accept the outcome of the process and cannot use judgement at the final stage.

5.2.5 **Government Priorities**

All interviewees were aware of the State’s strategic plan, although their knowledge of its content was somewhat limited.

> Mmmm, broadly, not my area of strength I must admit. – Interviewee C(R)3

Project managers commented that the budgetary cycle funding projects was linked to the strategic plan, and that for a project to be funded it needed to be outlined within the strategic plan. However, project managers also commented that the linkage between an individual project and the strategic plan was not something they were exposed to.

> Ah, there is a link … and I think in the background all of the investing and all of the money that’s been delivered to the budget cycles has been linked to the strategic plan. So unless there is clear links and this is something that I don’t really see in my role, but unless there is clear links for each project to the strategic plan then its not going to get up and get funded and budget. – Interviewee C(R)3

When requesting funding, appropriate linkages must be demonstrated and established between a project and the strategic plan.

> Unless there are clear links with the strategic plan you are not going to get money … I think the strategic plan is helping in that it is a bit of a strategic focus which wasn't there previously. – Interviewee C(R)2

When it comes to selecting projects to be undertaken the strategic plan influences the projects that are procured, but does not influence how projects are procured.
No. That (strategic plan) might talk about which projects are preferred … but when it comes to procuring the projects no, it doesn't have any influence at all or it shouldn't. – Interviewee C(R)1

The link between procurement and government priorities is tenuous and appeared both to be inconsistently applied and dependent on the project managers’ skills and experience.

There is a link undoubtedly … and also I suppose and I am guessing here a bit to recognise and utilise the local resources as much as possible. … If you do engage interstate parties then there is some knowledge transfer that they still utilise local, I mean that’s something we are very strong on and I think that is part of the strategic plan in a sense that we need to build up our knowledge base in local companies. – Interviewee C(R)3

Training is one Government Priority that is incorporated on all Government projects as a standard clause in contracts.

Um, not a lot, some of it, certainly training from a roads bridgeworks background, certainly there is a requirement for training of both graduate engineers, or graduate people from TAFEs, there is a requirement for training whether its labourers, operators whatever it is … and that’s basically something on each contract we let, – Interviewee C(R)2

However, project manager knowledge of how Government Priorities for training applies to their project procurement was so limited that it did not seem as if training was indeed incorporated as a standard element.

Another Government Priority discussed was the Environment. Whilst not incorporated as a standard non-price criterion on projects, it was felt the Government was broadly trying to achieve Environmental goals via projects.

We are very strong on environmental issues, but some of it is a bit superficial. What I mean by that is ultimately if push comes to shove the environment gets second fiddle. – Interviewee C(R)1
A project’s location has an influence on the types of Government Priorities that are incorporated into contracts, but this also seemed to be inconsistently applied. If a project is particularly large or in a remote area then it might have indigenous involvement policies included as non-price criteria

Occasionally we’ve had some special requirements for youth training and indigenous employment, but only on major projects or remote programs. – Interviewee C(R)1

The inclusion of Government priority criteria is driven by project managers and does not appear to be consistently applied on all projects.

Well, just getting some training packages, it’s really driven by the project manager but the Government would say that they want to get some of those outcomes, but I’m not clear in my mind just exactly who on the ____ (project) is driving it, but it is not being driven in a very strong way across all our projects. – Interviewee C(R)4

Projects are not formally audited against the government priorities articulated in the strategic plan.

5.2.5.1 Summary

Incorporating Government Priorities into the procurement process appears to be inconsistently applied in Case C(R). Whilst recognising Governments interest in the Government Priority areas of training and environment, the project managers did not have consistent viewpoints on what was happening and how it operated. It was suggested that there is a separate section of government whose responsibility is to oversee training approaches on projects, and another section that oversees the local industry involvement scheme. There was some reticence expressed by project managers about whether achieving these types of Government Priorities was indeed an appropriate role for procurement.

There was also concern expressed about whether using procurement approaches that preference local suppliers contradicted Competition Policy and Free Trade Agreements.
Project managers did not appear to be engaged in trying to deliver Government Priorities on their projects. The link between the Government Priorities articulated in the strategic plan and the procurement of a project is made at a budget approval phase. Project managers appeared to have a limited insight into this process and hence appeared somewhat disconnected from the delivery of Government Priorities. Projects are not audited against the strategic plan but Government departments are periodically required to outline how their activities contribute to the achievement of the strategic plan.

5.2.6 Supply Chain Management

Subcontractors are selected by lead contractors but Government are required to approve the subcontractors proposed. Should a lead contractor wish to change subcontractors post tender submission, then Government approval is required. Generally, the process involves lead contractors advising Government of the subcontractors they are planning to use. For a number of classifications of work, where a prequalification scheme exists, lead contractors are required to select prequalified subcontractors. The prequalification scheme has expanded into classifications of works which are most frequently undertaken by subcontractors.

We have got a prequalification scheme for say road works and bridge works which gets a head contractor on board. Below that there is a number of prequalification schemes that subcontractors have to be approved under, so things like asphalt, spray seals, raw materials, signs they all have to be pre-qualified subcontractors. – Interviewee C(R)2

Whilst subcontractors are informed of their rights with respect to surety of payment by the Government, there is little active Supply Chain Management (SCM) practiced by the Government.

We need to know who they are to inform them of their rights in terms of payments and everything as we have had incidents where they haven't received their dues, so we write to them making sure they understand what their rights are. – Interviewee C(R)3
Lead contractors and major subcontractors get direct feedback from Government on their performance.

It tends to be, it’s really only the major subcontractors. So if you had a major asphalt, or a job involving major asphalt works or major bridge works they'd be in on it too. We'd be giving them the feedback … We would be letting the head contractor know, I guess with the subcontractors the small ones as long as they are delivering what we want, and doing it safely, it doesn't really bother us too much, they're there, they are engaged by the head contractor, so the head contractor would manage them. – Interviewee C(R)2

A major theme to emerge was that of partnering approaches. On projects where partnering principles are being used, meetings and exchanges of information become less formal and monitoring performance is done less formally, but more regularly.

We do have a partnering process we have included in almost all our contracts … it’s not contractual but it does measure performance in a sense in the way that the contractor undertakes certain aspects, and in a way we measure subjective aspects of how he is attending to such as safety, site, the way he runs his site, how people perceive that issues are being resolved, in communications happening, in job satisfaction, all those sort of things are in a sense a measure of how the contractor is performing albeit not a hard nosed sort of way. – Interviewee C(R)3

There was conjecture as to whether project managers felt that performance should influence future work opportunities. Because the Government does not consistently conduct post project reviews it would be seen as unfair in some instances. It was noted that reporting attracts more attention on major projects.

And the link of that to performance isn't as effective or well instituted as it should be, but we have on occasion de-listed where it’s been necessary, but its probably not. It could be improved I guess, I'd like to see it improved. – Interviewee C(R)3
There is very little activity by the Government that would be recognised as supplier development aside from briefing subcontractors on new prequalification schemes and seeking to engage contractors on contracts with partnering principles.

We might have a prequalification scheme come out for something and we might go out and tell sub contractors or potential subcontractors what it’s all about, but it’s not to a large extent.
– Interviewee C(R)2

We try to invite them into partnering on construct-only things. – Interviewee C(R)4

### 5.2.6.1 Summary

The supply chain is largely left to the lead contractor to manage. However, Government is increasingly prequalifying classes of work undertaken by subcontractors and pursuing partnering principles with lead contractors. Performance feedback on projects is provided directly to lead contractors, and subcontractors delivering important packages of work on a particular project. The link between performance and future work opportunities is tenuous. If lead contractors perform poorly then they are likely to be excluded from the prequalification register and denied access to future Government projects. However, there is little reward for good performance, and project managers felt that performance feedback was inconsistently provided to contractors by Government. They also felt that the feedback provided was sometimes of poor quality, and hence did not enable contractors to focus their improvement efforts. There is very little activity undertaken in the area of supplier development apart from some communication with potential contractors and the broad pursuit of partnering principles on projects.
Figure 5.5 shows the responses received from the project managers in case C(R) against the dimensions of the theoretical framework. In case C(R) value-for-money was clearly defined in terms of the fulfilment of objectives and whilst there was some interest in procuring policy by-products this was inconsistently undertaken. Case C(R)’s approach to managing the supply chain is attempting to create good working relationships based on partnering principles. Tendering activities are undertaken in a manner to minimise the tendering costs borne by the supply side. A cross case analysis of the roads case responses is contained in section 5.7

Figure 5.5: Case C(R)
5.3 CASE A (R)

5.3.1 Demographics of Interviewees

Three of the respondents have Bachelor Degrees in Civil Engineering; A(R)1, A(R)2 and A(R)4 who also holds a Masters Degree in Business, with A(R)3 holding a certificate in Civil Engineering. As can be seen from Figure 5.6 three interviewees [A(R)2, A(R)3 & A(R)4] have over 15 years experience procuring projects in the public sector environment whilst A(R)1 has over 10 years. The respondents are procurement professionals who have worked predominantly in public service roles.

Figure 5.6: Case A (R) Interviewee Age and Experience Distribution

5.3.2 Procurement Operations

The road network is divided into regions with regional offices undertaking procurement activities within those areas. Regional offices can be involved in either minor works, for example, a purchase order for $20,000 of materials or major works up to $300-$400 million. A centralised major projects unit focuses on projects of over $50 million and either procures projects outright or in partnership with a regional office. Figure 5.7 shows the tendering thresholds and the approval processes for projects. There were no set guidelines detailing when a project was procured regionally or centrally. However, the more remote a region, the
increased likelihood that the centralised major projects unit will be involved with procuring a large project in its region, and the regional office then becomes the client. The major projects section is responsible for over $1 Billion of infrastructure projects a year and most are procured using non-traditional approaches.

Table 5.2 highlights the different contractual approaches used and shows that regional procurements tend to be more traditional [A(R)1 & A(R)2] whereas the major projects area tends to procure non-traditionally [A(R)3 & A(R)4]. The Government organisation A(R) has an aversion to D&C procurement and also believes contractors prefer not to undertake D&C’s. The Government views D&C contracts as producing outcomes of low quality and believes contractors view them as having a large upfront tender cost. Instead A(R) prefers to try to do some design in-house and then do construct-only projects. For larger projects the Government favours ECI or Alliance approaches in which contractors do not incur prohibitive upfront tendering cost to develop bids. These larger projects have an Expression of Interest (EOI) process and then contractors are shortlisted on the basis of non-price criteria and then asked to develop a design, for which they are paid. They are then invited to tender a price. A lot of the work in remote regional areas is contracted solely by invitation because it is government policy to provide work to local governments, local contractors, and the organisation’s internal maintenance unit.

A prequalification system exists to assess contractor’s technical capacity for constructing roads and bridges, and the financial health of the company. There are seven classifications of work that cover bridge design, highway engineering and transport planning etc for which there are three levels of complexity ranging from low to high complexity. A prequalification process also exists for consultants requiring them to submit information about their technical skills, resources and management capability.
Figure 5.7: Case A(R) Procurement Decision Model – Building Contractor

Building Contractor

-> $1 M

N

-> $3 M

N

Signed off by
district director

Y

Signed off by
director general

Y

Signed off by
Minister or cabinet

65% Traditional
20% Alliance
10% ECI
5% D&C

Figure 5.8: Case A(R) Procurement Decision Model – Building Consultant

Building Consultant

Traditional Project

N

Contractors are required to submit consultants as part of their bid who are then assessed on both price and non-price criteria

Y

Prequalified consultant selected on the basis of both price and non-price criteria

On an alliance project two consultants might develop designs in parallel that are then assessed on both price and non-price criteria
Table 5.2: Distribution of Construction Contract Type for Case A(R)

<table>
<thead>
<tr>
<th></th>
<th>Traditional</th>
<th>BOOT</th>
<th>D&amp;C</th>
<th>Novation</th>
<th>CM/PM</th>
<th>On-call multi task</th>
<th>GMP</th>
<th>Full cost reimbursable</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(R)1</td>
<td>90%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5% Alliances</td>
<td>5%</td>
<td>(ECIs)</td>
</tr>
<tr>
<td>A(R)2</td>
<td>90%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5% Alliances</td>
<td>5%</td>
<td>(ECIs)</td>
</tr>
<tr>
<td>A(R)3</td>
<td>42%</td>
<td>5%</td>
<td></td>
<td>37%</td>
<td></td>
<td>37% Alliances</td>
<td>16%</td>
<td>(ECIs)</td>
</tr>
<tr>
<td>A(R)4</td>
<td>42%</td>
<td>5%</td>
<td></td>
<td>37%</td>
<td></td>
<td>37% Alliances</td>
<td>16%</td>
<td>(ECIs)</td>
</tr>
</tbody>
</table>

5.3.3 Defining Value-for-Money

All respondents indicated that VFM is an important objective of their procurement activities given their role overseeing taxpayer’s funds.

We take our responsibility for the taxpayers' funds very seriously. – Interviewee A (R)1

The respondents noted that VFM is a subjective concept and that the traditional way of assessing VFM has been seen as the lowest price.

I think the easy way of assessing value-for-money is cheapest price, but everybody realises that is not really value-for-money, that there are a lot of other objectives that need to be obtained and you know, performance criteria that needs to be assessed. – Interviewee A (R)3

An important theme influencing the project managers’ thinking about VFM was the financial life cycle implications of the asset. Investing upfront by paying for good design was viewed as very important in reducing future maintenance costs. Project managers do not want to deal, over an asset’s life cycle, with the financial and other implications of poor design. Design is considered crucial in traditional contracts because contractors are building what is in the documentation. Project managers are looking for the best design as far as life-cycle and quality are concerned, and that means the right price for the right quality of work.

For traditional/construct-only contracts, the assumption is that the Government’s knowledge of local conditions, through its’ network of regional offices, helps it to specify the design and
then bids from appropriately prequalified contractors represent VFM. In theory, if the design is good, traditional contracts represent VFM because all the contractor has to do is construct what is in the documents. VFM becomes more difficult on large projects where the scope is not as clear and it is in these instances where alliance approaches are often used. The funding environment (Treasury) views alliance projects less favourably because VFM is not assessed in terms of lowest cost. Treasury view VFM as delivering a project under budget. As a result, the delivery agency is almost encouraged to inflate budgets so that they deliver under budget.

Unfortunately, our Treasury officials, to them demonstrating value-for-money is that you brought it in under budget, and I said to one of them well that's easy, I'll just bump the budget up and they said that's fine, as long as you bring it under budget, we don't care, we're all anal, we're accountants for Christ's sake. – Interviewee A (R)3

The authorising environment (politicians) view VFM in terms of what was delivered to the State for the funds allocated. One project manager commented that a politically imposed fast tracked timeline does not enable them to procure value-for-money.

From Figure 5.9 it can be seen that all participants had a moderate to high level understanding of VFM. A(R)3 and A(R)4 regularly incorporated more non-price criteria in to their procurement activities and are procuring major non-traditional projects. A(R)1 and A(R)2 incorporate less non-price criteria in their procurement activities and are more frequently procuring traditionally.
5.3.4 Selection Criteria

On traditional projects the predominant selection criterion used is the tendered price from prequalified bidders. However, the risk assessments that are undertaken focus largely on financial details, although may involve some analysis of non-price elements like traffic management.

The attitude entrenched within the department has been that non-price criteria are not needed because contractors are prequalified. This has been the view of senior management and so it has been a challenge to introduce non-price criteria as part of the tender process. The greater the perceived risk factors of a project the increased likelihood of the use of non-price criteria. Generally, if non-price criteria are included they are project specific as project managers do not want non-price criteria to duplicate prequalification, but they believe that including non-price criteria is beneficial to the selection process.

We see non-price criteria in two ways: one is that it actually tells us who's serious about actually bidding on the work, and it also tells the contractors what we view as the high risk items … We've had a lot of problems with contractors in the past that just drop in low bids. – Interviewee A(R)2
Non-traditional projects have a higher non-price component and are procured far more often on the basis of non-price criteria, although price is still an important criterion. The weighting of price and non-price criteria is generally at the judgement of the project managers and might be developed in consultation with the regional client.

One non-traditional project was awarded on the basis of 60% price criteria and 40% non-price criteria. On larger projects procured by the major projects area there is often an expression of interest, which involves submitting only non-price criteria. After the EOI, contractors are shortlisted and asked to submit a price, and then selected on a combination of both price and non-price.

On some non-traditional projects non-price criteria are used to shortlist prequalified contractors but the selection decision is made largely on price. So price is the primary criterion but it is moderated by the non-price criteria used to shortlist. However, there are some non-traditional projects where non-price criteria are the main decision making criteria and the process is focused largely around getting the right team for the project. Alliance projects shortlist on the basis of non-price criteria, then both contractors teams develop a design and a price estimate, for which they are paid. The selection decision is then made by assessing the design (non-price) and the estimate (price), and might be something like a 60% price – 40% non-price split.

The types of non-price criteria used on many of the larger projects are focused on the contractors understanding of the project, and propensity for teamwork. They tend not to be focused on technical capacity as the Government has confidence in the prequalification system to address technical issues. Instead, non-price criteria focus on whether contractors are going to be able to handle the traffic management and public interface issues. There
might be non-price criteria focused on past performance (claims history, latent condition claims or time extension claims), subcontractor relationships or human resources. When assessing tenders, non-price criteria are often quantified into dollars to determine how much better performance in terms of outcomes is going to cost the Government.

5.3.5 Government Priorities

All the interviewees were aware of the Government Priority areas and commented that they influenced their selection policies, and that their procurement activities fed into the state infrastructure plan. When the funding case for a project is developed a justification is made of the strategies (Government Priorities) it is fulfilling. However, the link between procurement and Government Priorities was considerably less explicit. From the Department’s perspective, the overarching policy or Government Priority that roads projects address is ‘connecting the state’.

The interviewees believe the focus of the political authorising environment is demonstrating that the community benefits from government expenditure on projects.

A cynical person might also say that the government priority is to be re-elected, but we're not cynical. – Interviewee A(R)1

The procurement process, or how you deliver a road, was viewed by Government as a means to drive indirect benefits to communities in the forms of training, local content etc.

There's a direct benefit by building the project, and an indirect benefit sometimes by the way you do it. – Interviewee A(R)4

Standard non-price criteria designed to advance Government Priorities should be incorporated for all projects. However, Government Priorities were more of a focus when procuring
projects in regional areas, and it was clear that the location of a road was an important factor influencing the types of priorities that the agency incorporates into projects.

Training is a Government Priority that was consistently addressed via procurement, with projects having standard requirements.

Within our contracts too, we have requirements, for training levels, numbers of apprentices and training hours and so on. – Interviewee A(R)3

Training and employing local communities is viewed as relating to the Government Priority of ‘widening the skills base’. This, at times, focuses on local indigenous populations, but the project managers comment that this was difficult to achieve with conventional contractors. However, it was suggested that non-price criteria in the form of a local supply strategy addressing both people and resources might be used depending on the project and the location. Projects are not strictly audited against the Government Priorities, although they are required to report on their contribution to policy areas like the training initiatives.

Overall, whilst Government Priorities are, in theory, considered upfront when initiating a project, how much they actually influence projects seems somewhat variable, non-standardised and influenced by the road’s location, and the skills, vision and drive of the project manager.

5.3.6 Supply Chain Management

Lead contractors are responsible for selecting subcontractors. However, approval is required and Government can refuse or withhold permission to use a particular subcontractor on the basis of previous poor performance.

Many of the materials used in road construction are sourced from certified suppliers in the areas of; quarry material, gravel mixes and pre-stressed steel and Government requires
subcontractors and suppliers contributing packages of work worth over $50,000 to be prequalified or certified. Where there is no existing prequalification scheme for a classification of work, a project manager will make a judgment on previous experience with a subcontractor. The Government recognises that this has an effect on the market by limiting the suppliers.

On non-traditional projects, supply chain management, including supplier and subcontractor selection, might be non-price criteria included as part of selection processes.

Are they going to use three prices, are they going to have preferred suppliers? So they document all that and we assess that as part of the selection process. – Interviewee A(R)3

Government acknowledges that on non-traditional projects there is a risk transfer from the lead contractor to the subcontractors that current contracts allow them little opportunity to influence.

Previously the emphasis on performance feedback had been on reporting at the end of projects which would be submitted to the contracts section which administers a database detailing how contractors have performed on various projects. The emphasis on performance reporting has shifted to more regular reporting during the project. Contractor reports are used to provide regular feedback, and end of project reporting is used to assess contractors’ performance and reward good performance by giving them first opportunity to tender for projects with short selection processes. Subcontractors will get feedback and loss of access to future work if they are on the prequalification supplier register and do not perform well. Their prequalification status may be affected and they might be downgraded to provisional status.

Definitely. The thing is more slanted towards what one might call the negative feedback or a recognition of problems. So the standard is, you know, meeting the specification which is the minimum standard, so if you fall below that, you will certainly get a lot of feedback. – Interviewee A(C)3
There is little supplier development activity undertaken by the Government. However, they have identified capacity in the second tier of contractors and are currently trying to engage them on non-traditional (relationship-based ECI) projects.

Figure 5.10 exemplifies the responses received from the project managers in case A(R) against the dimensions of the theoretical framework. Case A(R) defines value-for-money broadly and this is enabled by their preparedness to procure non-traditionally. The organisation seeks policy by-products when procuring roads projects, and training is incorporated as a standard.

**Figure 5.10: Case A(R)**
5.4 CASE B (R)

5.4.1 Demographics of Interviewees

All three respondents hold Bachelor degrees in Civil Engineering, with B(R)2 also holding a Masters in Business Administration and B(R)1 holding a Graduate Diploma in Business. From Figure 5.11 it can be seen that all interviewees were over 50 years of age, and all had over 25 years experience in the public sector. The procurement experience varies somewhat with 12 years experience for B(R)2, 26 years for B(R)1 and 35 years for B(R)3. All of the project managers are career public servants having spent their entire careers in the roads organisation.

Figure 5.11: Case B (R) Interviewee Age and Experience Distribution

5.4.2 Procurement Operations

Until the mid 1990s all road construction was done in-house or via construct-only contracts. The state road network is divided into districts that regional offices are responsible for managing. For regional projects, project managers are required to develop a scope, and an initial cost estimate before an assessment is made on whether the project will be solely delivered by the region or in conjunction with the central office. As projects increase in
value, regional project managers communicate with the centralised major projects branch and the project is either procured completely by the centralised branch or in partnership with the region. As indicated by Figure 5.12 the regions are responsible for projects up to about $10 million, which are almost all construct-only contracts. Procurement tends to be awarded to prequalified contractors submitting lowest price tenders. If a regional office is delivering a project, they undertake all the assessments of tenders, and they would get some support from central office when preparing contracts. However, if it is a large project, the assessment might be done from the capital city or could be done in partnership with staff from both the central office and the region.

Prequalification exists; it covers five classifications of work and incorporates various levels of project value and complexity. Prequalification assesses a contractor’s technical capability and capacity, their track record, financial capacity, and approach to quality and occupational health and safety (OH&S). There is no prequalification requirement for consultants (see Figure 5.13) and the department aims to do 25% of design in-house. However, the Department has three long term contracts with consultants in the roads engineering area. Project managers engage these consultants, but are required to demonstrate the value of the various consultant proposals, by addressing issues of the details of the brief, price and staff being proposed.

Currently, they project manage a mixture of contracts; construct-only, D&C, alliances and some directly managed works, which are not quite fully in-house delivered. On non-traditional projects there is an EOI stage and then shortlisting to approximately three contractors who then compete on price. For alliance projects, there is shortlisting and there are workshops and interview processes that address non-price criteria.
Figure 5.12: Case B(R) Procurement Decision Model – Building Contractor

Building Contractor

N

$10 M

Y

Regionally Procured?

Complex elements with Non-price criteria

Centrally Procured?

Non-traditional procurement
20% Traditional

Traditional Prequalified Lowest Bid

Traditional Project

Contractors are required to submit consultants as part of their bid who are then assessed on both price and non-price criteria

Project Managers engage one of three consultants who are on the Departments existing panel and are required to demonstrate that it represents VFM

Figure 5.13: Case B(R) Procurement Decision Model – Building Consultant
Table 5.3: Distribution of Construction Contract Type for Case B(R)

<table>
<thead>
<tr>
<th></th>
<th>Traditional</th>
<th>BOOT</th>
<th>D&amp;C</th>
<th>Novation</th>
<th>CM/PM</th>
<th>On-call multi task</th>
<th>GMP</th>
<th>Full cost reimbursable</th>
</tr>
</thead>
<tbody>
<tr>
<td>B(R)1</td>
<td>80%</td>
<td>15%</td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B(R)2</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B(R)3</td>
<td>*-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*no response

5.4.3 Defining Value-for-Money

The project managers believe that VFM is a major objective of their procurement activities. Being able to demonstrate VFM and the impact of Government expenditure is an important component of the objective and this is easier if the design scope of a project is well developed. VFM is a complex construct and is not a concept that is ever fixed as it varies according to what Government is trying to achieve.

We haven't yet got it cast in concrete as an organisation … I think it is very much a case-by-case basis. – Interviewee B(R)3

However, from the Department’s perspective it is impossible to arrive at a universal definition of VFM, because VFM will vary on the sections of road, the environment, the funds available, and the future planning strategy.

I think Value-for-Money can change on a network depending on the section of the road you're talking about, the environment you're in, how much money is available, what your forward plans might be and so on, which makes it very difficult to come down and argue or demonstrate Value-for-Money. – Interviewee B(R)3

A strong theme prevalent in Case B(R) was that VFM is an assessment of the level of service being received against the funds spent on that service.

Proposal A might give you a level of service which you think is probably at the top or upper end of what you'd like it to be, but the cost that goes with it is just too high … At the other end, you might have a very low level of service, again for a very low price, and there will be
circumstances where for a number of reasons, that lowest price and lowest level of service, is the right Value-for-Money because it might mean, you've got plans in four or five years time to retire that bit of infrastructure, and therefore there is no value in spending a lot more money and having a high level of service.  – Interviewee B(R)3

Project managers recognise Government’s desire to make a contribution to society in addition to building infrastructure. The project managers note that the easiest definition of VFM is solely in financial terms and this is also the simplest political view of VFM. Because of this they realise the importance of being able to communicate why a project is VFM to a community and politicians and believe that the Department must sell its vision of VFM to the authorisers. However, communicating VFM information on infrastructure projects is difficult and challenging.

Value-for-Money is just seen as simply the dollars, the bottom line … So I suppose you need to be able to sell what’s value. And to be fair, that's it’s not just the politicians, I suppose it's the whole community because that's what they need to respond to. So, how do we package that information I always find it challenging. So there's one about procuring and the second one is actually selling it, that it does represent value for money.  – Interviewee B(R)2

In traditional procurements, VFM is pursued through a competitive tender process from prequalified contractors. In non-traditional projects, VFM takes on a broader meaning and non-price criteria are far more likely to be considered during the tender process. In both instances VFM is about sourcing the market for the supplier they think can deliver the best outcome.

From Figure 5.14 it can be seen that the VFM knowledge in Case B(R) ranged from moderate to extremely high. The use of non-price criteria in procurement was used at a moderate level by B(R)1 and B(R)2 and at a high level by B(R)3.
5.4.4 Selection Criteria

On traditional projects, building contractors are selected on the basis of price, in addition to being prequalified. However, for non-traditional projects the selection process is more likely to consider non-price criteria such as the project team, experience, competencies, skills and the proposed approach. Further examples of the types of non-price criteria used on projects might include: commitment to innovation, social and environmental factors, and demonstration of working relationships. Tenderers are often shortlisted solely on the basis of non-price criteria, before inviting bids and then selecting on the basis of price.

The use of non-price criteria can vary from being given a 70% weighting on a non-traditional project to not being considered, where price is the only selection criterion. Where non-price criteria are not used, the project managers feel that prequalification addresses non-price issues, and believe the shortlisting process also address non-price criteria. There is debate internally over the weightings attributed to non-price and price criteria, and how to justify and rationalise whether those weightings have been set at an appropriate level.
So there's a large spectrum and it all depends upon the appetite of the organisation about whether they want to give weighting to non-price criteria as opposed to the price criteria. – Interviewee B(R)3

On alliance projects there tends to be a two envelope system where proposals are firstly assessed against non-price criteria. The non-price criteria are quantified into dollars to enable the bids to be ranked and compared. The price criterion is then considered and added to the scores on the non-price criteria to enable a final ranking of the proposals.

Whilst consultants are not prequalified there is an existing panel which contains three consultants in the roads engineering areas who have already been through a rigorous selection process assessing both price and non-price criteria examining their people, experience, skills, cost and availability. Project managers call consultants from the panel to do work for the Department and are required to demonstrate against price and non-price criteria that the proposals received represent value. Project managers procuring construct-only projects generally use consultants from the panel. On non-traditional projects the parties tendering are required to propose their own consultants whom are assessed against a mixture of price and non-price criteria (people, track record etc). For a complex and or large specialist consultant contract the Department would have a stand alone contract where they again assess price, people and experience of various bidding consultants.

5.4.5 Government Priorities

Government Priorities in the areas of skills training and regional development are included as standard clauses in contracts. Local content clauses are weighted as non-price criteria as part of the selection process. Tenderers are required to nominate where they are sourcing their materials from, which might attract a regional preference.
Yeah, well, I guess our state like most states, have got policies of regional development and skills training and those sorts of things, so they are all included as a blank issue. – Interviewee B(R)3

On some projects, project managers add additional criteria based upon Government Priorities. These additional criteria can involve thinking about a project’s physical location and the benefits created for a local community through, for example, trainees and apprentices, public art, environment, indigenous training or involvement etc.

So the Government Priorities pursued on projects can be tailored depending on a project’s location and size but are not as consistently pursued as they might be.

Trying to find ways to sort of build those into our procurement strategies and procurement processes. So things like the public art, I suppose we’ve learnt that we put a budget in there, rather than you know, got a budget of half a million dollars, and give us proposals which are likely to get say in submissions, get an indication of what you're likely to get for that sort of money. – Interviewee B(R)2

Engaging contractors and creating teams that can deliver these types of benefits to communities is a challenge. These benefits are considered more achievable on non-traditional contracts, and in particular, alliance projects where Government staff are part of the team and it is easier to develop shared values and goals to which there is real commitment amongst team members.

I am very much of the view we need to spend a lot more time identifying what is the list of things that we want out of these contracts … Obviously, you want to spend as little money as you possibly can. I'm not sure whether that's a good driver or not. You want to get a level of service that you’ve described. You want to be able to respond to a number of social drivers in particular areas, and then you want to sort of cascade down a bit lower if you like and start saying well how would the arrangement or the way you do that business address these issues.
And, that is really where we need to I suppose get a bit more clear on identifying what are the things you actually measure when you assess a proposal to be able to answer those high level drivers. – Interviewee B(R)3

Government Priorities are audited on projects as they are running, and payment is withheld if a contractor is not delivering.

Oh, we would do that during the project. We wouldn't be paying a contractor if he's claiming - and there's actually clauses in the contract which makes that clear if he is not meeting those requirements, he's going, he’s gonna get pulled up, we won't be paying him. – Interviewee B(R)1

It was also suggested that it is perhaps not as useful to do audit post project as there is little recourse available to the Government at that stage.

5.4.6 Supply Chain Management

Subcontractor’s are selected by lead contractors but are required to be approved by Government. Government takes note of the subcontractors proposed but prefers not to get involved in the lead contractor’s management of its’ supply chain. Government does not want to be seen as interfering and hence subjected to claims of lost earnings by the lead contractor. However, if there is a critical subcontractor who has been nominated by the lead contractor as part of their bid then the Government will write that subcontractor into the contract to ensure substitution does not occur. A prequalification system used to exist for both consultants and some subcontract elements but the Government found it was labour intensive and the focus now is solely on lead contractor prequalification.

It was just a very complex, labour intensive process to manage the thing and it was rarely up-to-date so we only prequalify principal contractors now. – Interviewee B(R)1

Feedback is provided to lead contractors during, but primarily at the end of projects and this feedback flows back in to the prequalification system. Lead contractors might be surveyed
over the course of a project and there will be regular exchanges of feedback at formal meetings. However, subcontractors do not necessarily get direct feedback from the client organisation but they may receive a copy of the client’s feedback form and they do have the opportunity to express their opinion. On some projects it was suggested that they do try to engage the subcontractors in partnering relationships. In theory, performance has an effect on a contractor’s prequalification level and hence their opportunities for future work. Evidence suggested it was infrequently applied and that performance did not have a strong impact on opportunities for future work, other than perhaps disastrously poor performance.

Supplier development is not a term the organisation was familiar with and the respondents were not sure whether they were addressing it as an issue.

Supplier development activities? Nothing comes readily to mind, not in my area, anyway.

No, we don't do that. There might be areas that do it. – Interviewee B(R)2

The organisation was aware of their role in training the smaller players to raise their skills and competencies and acknowledge they cannot just rely on lead contractors to raise the standards in the industry.

We accept this is an industry issue, that we've got to start training the smaller players to raise their skills and competencies … All that sort of stuff has to be driven by the client. And it will only happen if there is a real will by the client to do it, demonstrate that the real will is there and follow it through. – Interviewee B(R)3

The return to some direct management of works has provided an increased opportunity to influence skill development.

We now have an internal policy that we're going to deliver up to 10% of our budget by direct management, so that hopefully will also give us an opportunity of influencing the skill development. – Interviewee B(R)3
Figure 5.15 displays the responses received from the project managers in case B(R) against the dimensions of the theoretical framework. As can be seen from Figure 5.15 case B(R) defines value-for-money broadly and pursues policy by-products through its procurement approaches. However, they acknowledge there is still more thinking to be done about the value they are hoping to derive from projects. On some projects case B(R) actively get involved in supply chain management by espousing partnering principles with suppliers. Tendering processes are undertaken in a manner designed to limit the waste by the supply side.

Figure 5.15: Case B(R)
5.5 CASE D (R)

5.5.1 Demographics of Interviewees

All four respondents hold Bachelor degrees in Civil Engineering, with D(R)2 also holding a Graduate Diploma in Management. From Figure 5.16 it can be seen that three of the four participants [D(R)2, D(R)3 & D(R)4] have over 20 years in the public sector environment procuring projects and are career public servants, whilst D(R)1 has 10 years experience in public sector procurement.

Figure 5.16: Case D (R) Interviewee Age and Experience Distribution

5.5.2 Procurement Operations

As illustrated by Figure 5.17, Case D(R) has a regional office structure that administers maintenance contracts as well as procuring construct-only projects of a small to medium scale. The Department also has a centralised procurement area that deals with larger projects, and a dedicated group who are largely responsible for procuring PPP/BOOT projects. The Department has some internal capacity for road construction works and single invitation
maintenance work is undertaken either with internal capacity or by partnering with local councils.

We've got an in-house construction capacity because there are some jobs that don't suit going out to private tender, can't scope them and they've got to be done quickly, all those sorts of reasons. – Interviewee D(R)2

A prequalification system exists for building contractors that has various classifications of work and levels within it relating to project value and complexity. Prequalification assesses a contractor’s financial capacity, technical capability and experience, track record, experience of staff and management. Some classifications of works, for example concrete paving, have specialised requirements as well, so a contractor has to be prequalified at the overarching class of the work (e.g. Roads Construction Level 3) and also are required to be prequalified for the packages of work within the contract. If the lead contractor is not prequalified for the package underneath then they have to engage a subcontractor who is. Consultants are not required to be prequalified and are instead selected on the basis of their capability, track record and human resources (see Figure 5.18).

As reflected in Table 5.4, there is a strong organisational preference for the traditional approach to procurement. Alliance approaches tend to be used when the project is in the $100-150 million range. The major projects group procures large scale highway redevelopments using a PPP/BOOT approach and has approximately 6-10 projects running at any one time. To encourage contractors to pursue higher standards of design there is some use of the D&C+M approach. This additional component adds specified periods to D&C contracts during which building contractors are responsible for maintaining the road they have built.
We do some D&C stuff, plus Maintain. We believe that by adding the Maintenance component you drive better performance in the Design & Construction part of it – Interviewee D(R)3

Project managers acknowledge that Alliance projects have a lower upfront tendering cost than do D&C+M and BOOT projects, and hence are well received by building contractors.

Figure 5.17: Case D(R) Procurement Decision Model – Building Contractor
5.5.3 Defining Value-for-Money

All respondents indicated that purchasing VFM was an important objective of their work and recognise the important role VFM has in shaping their procurement activities.

I think its a very, very, very strong objective, its probably the biggest factor in anything that we do. – Interviewee D(R)2

The dominant theme expressed by project managers was a financial perspective to defining VFM. VFM was considered to be best demonstrated via open tender competition from prequalified tenderers. On projects, financial data in the form of tender quantities, proposed rates, and unit rates on plant and labour are examined to analyse bids submitted by contractors.
in light of both independent and historical estimates. Non-price criteria are considered when selecting contractors, but it is rare that the lowest prequalified tender would not be selected.

We close the tenders and then it’s pretty much on price although we go through quite an extensive analysis of it, and we do look at non-price issues when we are evaluating the construction tenders, but its very, very, very unusual not to take the lowest prequalified tender for a particular job. – Interviewee D(R)3

On traditional projects, VFM is viewed as documenting the standard of work desired (design documentation) and then delivering the contract at the specified quality standard at an acceptable price determined by competition, without excessive variations.

Another prominent theme emerging was life-cycle costing and ensuring that Government was not procuring low quality assets that required excessive maintenance over the duration of their life cycle. There was an awareness of the interdependent relationship between design and maintenance acknowledging the importance of design in creating outcomes that will result in life-cycle costs appropriate to the period an asset is expected to be used. Design is viewed as a value creating process, as design determines the scope of a project. Once design is set then decisions are made by the Department as to what components go into delivering the design at an appropriate level of maintenance costs, for example the types of pavement that are appropriate in a particular geographic area. The specifications outlined in Government tender documents have incorporated life-cycle considerations for the asset being procured. Maintenance diaries and knowledge of local conditions from the regional offices inform these specifications.

So we have a number of ways of trying to assess VFM apart from straight up initial cost, and we certainly look at you know, we do maintenance diaries so we are looking at the maintenance cost of various solutions. – Interviewee D(R)3
There is also some impetus to incorporate maintenance periods into their D&C contracts (D&C+M) to motivate contractors to build quality into their design, rather than undertake maintenance afterwards.

When you get into the BOOT and DCM type projects, we do look at whole of life concepts, because they are proposing designs rather than us. – Interviewee D(R)1

5.5.4 Selection Criteria

The assumption made on construct-only (traditional) jobs is that prequalification has taken care of all the non-price criteria so selection decisions can be made solely on the basis of price. Non-price elements are considered as ‘pass’ or ‘fail’ criteria at the shortlisting stage. Whilst they are used on the selection process they are not formalised as weighted selection criterion. The main selection criteria are focused on price, which investigates the rates proposed, including a comparison with estimates and risk within the tender in terms of quantities. Prequalification is viewed as a scrutiny process and on that basis the lowest priced tender should be accepted unless there are good reasons otherwise, which might be the proposed methodology, or the assumptions being made on rates for risky or unknown elements. Generally the lowest tender wins unless it is deemed not to be the best VFM because the risk is considered too great.

But its very, very, very unusual not to take the lowest prequalified tender for a particular job, but we prepare quite an extensive report and it does consider the make up of their rates to see if there are any risks with their tender quantities – Interviewee D(R)3

On construct-only projects non-price criteria are considered covered by the prequalification hurdle and it is a very rare case in which additional non-price criteria are used as part of the formal tender submission process. For construct-only projects the selection criterion is predominantly price, however, performance reports are looked at to see if there are issues of concern. On non-traditional projects the selection criteria are far more likely to incorporate
non-price elements like the proposed methodology or solution, traffic management, project team, construction program, construction strategy, human resources, track record etc. The selection process often evolves as the scope of the project evolves.

On that contract it wasn't a formula based assessment, more a qualitative sort of approach to looking at it. I mean some companies offered things that we were totally uninterested in, and also on further discussion with them on some of the methodologies we weren't happy to accept like the way they would deal with like the keeping traffic flowing during the course of the work. – Interviewee D(R)2

Non-price criteria are used on projects where maintenance periods are incorporated into contracts, and a risk adjustment is made on proposals. D&C and D&C+M contracts often have a whole suite of non-price criteria that are given weightings. Proposals are ranked against the non-price criteria and the price criterion is adjusted according to the performance on the non-price criteria, enabling a comparison to be made between proposals.

On BOOT and D&C+M projects, non-price criterion assessing the capability of the proposed team is often used at an EOI stage as ‘pass’ or ‘fail’ criterion. Non-price criteria are often focused at the shortlisting stage on whether it is thought that the bidding company can actually do the work.

The whole process of selecting or going through the EOI process for starters, that’s really about capability and whether these particular consortia have got the right team that could deliver the project, so that’s the first stage and there is separate assessment criteria for that, um yeah, in the EOI stage. – Interviewee D(R)4

After shortlisting, formalised non-price criteria in the form of capabilities and previous performance are often used, and typically the weighting attached is something like 85% price criteria and 15% non-price criteria. On non-traditional projects the building contractor, in
conjunction with their consultants, are proposing the design so the Government makes assessments on the approaches and materials proposed with respect to whole-of-life issues.

Consultants are not required to be prequalified and contracts are awarded using a combination of both price and non-price criteria. The type of non-price criteria frequently employed for consultant contracts are their capability, track record and human resources. Price can be as little as 30% of the consideration and it really depends on the scope of the work being undertaken on a project. Projects like option selection, route selection or concept design development might entail 20-30% price criteria and 70-80% non-price criteria. Whereas preparing contract documents might feature 70% price criteria and 30% non-price criteria. Typically price might be a component of say 30-50%.

As can be seen from Figure 5.19 the VFM knowledge of the interviewees ranged from moderate to high. The use of non-price criteria in procurement was used at a moderate level by D(R)4, D(R)3 and D(R)2, and at a high level by D(R)1.

**Figure 5.19: Case D(R) Interviewees’ Value-for-Money Matrix**
5.5.5 Government Priorities

All of the project managers were aware of the strategic plan outlining the Governments Priorities. However, the alignment between procurement activities and the strategic plan was not explicit to them. Project managers assume there is an alignment between projects and Government priorities and that this strategic alignment needs to be demonstrated to Treasury otherwise funding would not be approved.

So obviously because the government is trying to deliver things in the state plan then that has an influence on our business planning process and the sorts of directions that the organization as a whole might take, but I can’t say it has really done a lot in terms of our procurement strategy at this stage – Interviewee D(R)1

There were not many Government Priorities for which roads were the lead agency, apart from reducing the road toll. Where a project directly impacts on aboriginal communities or indigenous populations they attempt to incorporate aboriginal participation policies. Other Government Priorities that are incorporated on all projects are environmental assessment and urban design. In some cases public art is explored. The training and use of apprentices on projects is something that is no longer monitored as it was previously.

Project managers felt that the incorporation of Government Priorities as non-price criteria had previously been a more formalised process. The guidelines provided to contractors are less prescriptive than they used to be and focus is on getting tenderers to submit plans on how they will address Government Priority criteria, for example training or aboriginal participation.

We used to have a much more formalised system, we’ve relaxed back that, we require them to produce training plans, aboriginal participation plans, but the guidelines are more outcome focused and less prescriptive than they used to be. They (contractors) have to obviously meet the approval conditions that we have for the project, things like safety, our requirements in
terms of quality but there probably wouldn’t be unique government requirements that we
would be putting on this type of contract. – Interviewee D(R)1

Projects are not audited against Government Priority criteria. The results are monitored but
tend not to have formalised performance measures attached to them and did not seem to be
rigorously assessed.

5.5.6 Supply Chain Management

The selection of subcontractors is predominantly left to the lead contractors who seek the
approval of Government for their subcontractor selection. It is rare that they are not approved
but if Government has concerns they are raised with the lead contractor. There are
prequalification requirements for certain classifications of work that subcontractors are
required to meet. For example, to build a bridge, a subcontractor needs to be prequalified for
bridge construction. For projects in high risk areas the requirements might relate to engaging
appropriately qualified traffic control firms.

Regular performance feedback is provided to lead contractors at monthly meetings and three
times a year a more comprehensive performance reporting regime is undertaken. If a
subcontractor was not performing it would be brought to the attention of the lead contractor.
On construct-only projects the Government feels let down by the work performed by many
subcontractors.

We discuss performance at each monthly meeting with the contractors and if there was a
subby not performing we would certainly bring that to the contractor’s attention. The
contractor’s system should identify non conforming work and if he doesn't, we do, and we
give him the opportunity to raise it in his system otherwise we will serve him with a notice
and get it raised as an NCR (non conformance report) … our contract is with the head
contractor so we take our issues to him and expect him to take it up with the subby. –
Interviewee D(R)3
Contractually the relationship Government has is with the head contractor so that is who they communicate with, and expect lead contractors to address their concerns with the subcontractors. Feedback is not normally provided directly by Government to subcontractors, although in some instances they may receive feedback informally. Previous performance of lead contractors is taken into account when awarding contracts and this can affect their pre-qualification level. If a contractor was to get a stream of unsatisfactory performance reports they could be removed from the prequalification system entirely, or they could have their level of work eligibility downgraded.

Whilst supplier development was not a term familiar to the project managers interviewed, there did appear to be some activities undertaken in this area. The Government conducts training courses, particularly in the area of quality, to ensure that contractors and consultants understand Government requirements. There is also a registration scheme for traffic control, and Government provides train-the-trainer training in this area, to help stimulate expertise in the industry. Other issues they have sought to address periodically, through training and information sessions such as environmental erosion control and traffic control of worksites. Further, the Department liaises with a number of industry working groups (asphalt, concrete, concrete paving etc), participates in forums and contributes to technical discussions, which are often then reflected in the Government’s technical specifications. Briefing seminars are also held informing lead contractors of future Government projects.

Figure 5.20 exhibits the responses received from the project managers in case D(R) against the dimensions of the theoretical framework. In case D(R) value-for-money is largely defined in terms of lowest cost, however this is moderated by having contractors satisfy the prequalification hurdle. The predominant approach to procurement is traditional based on lowest cost and there appears to have been a move away from viewing procurement as an
appropriate mechanism to achieve policy by-products. There is little active management of the supply chain although tendering approaches use prequalification to target appropriate bidders and minimise wasted tendering costs on the supply side.

Figure 5.20: Case D(R)
5.6 CASE E (R)

5.6.1 Demographics of Interviewees

E(R)1 holds a trade qualification in quantity surveying, whilst E(R)2 holds Bachelor degrees in Civil Engineering and Business. From Figure 5.21 it can be seen that both interviewees have spent the majority of their careers in the public sector. The interviewees vary considerably in age and experience with E(R)1 having 20 years public sector procurement experience and E(R)2 having 5 years experience.

Figure 5.21: Case E (R) Interviewee Age and Experience Distribution

5.6.2 Procurement Operations

As illustrated by Figure 5.22 Case E(R) has a regional office structure that manages general maintenance contracts on the road network, and procures construction projects valued up to $3-4 million. There is also a major projects area that procures larger scale projects like Freeway developments. The capability also exists to create hybrid project teams, made up of combined regional and major projects staff, to deliver large projects in regions. A small
internal labour force is available within each region although it has been considerably reduced and is made to compete with private sector contractors for projects. Whilst not as comprehensive as previously, the Department still has some internal design capability, and the design unit select the projects that they want to design in order to maintain the expertise of Department staff.

And I think a third of all works are supposed to still be done by them. … and they pick and choose some of the jobs that they do in order to maintain the expertise of their own staff. – Interviewee E(R)1

Projects require an approval for the estimated cost from both the State budget team and Treasury, however the Department determines the procurement approaches used. The main approach used is traditional procurement and at times they divide what might be one large project into smaller contracts to enable competitive traditional procurement.

If it’s a $300 million scope of works they may divide it into three jobs of $100 million depending on the staging that they consider is going to be appropriate, the types of works that are in there and the complexity of them. – Interviewee E(R)1

Most work is undertaken as mandated, by prequalified contractors, except in cases involving classification of works for which no prequalification scheme exists. Even for smaller packages of work, the majority (approximately 60%) is undertaken by prequalified contractors. A prequalification scheme similar to that for contractors exists for the consultants’ panel. Consultants are required to submit for assessment a similar suite of information about their track record and proposed personnel. Most of the consultant contracts have a value of less than $100,000 and if registered consultants are available in the category of work then project managers must engage a consultant from the panel (see Figure 5.23). The panel was created to streamline the process for engaging a single supplier consultant for work up to $100,000.
Figure 5.22: Case E(R) Procurement Decision Model – Building Contractor

- **Building Contractor**
  - If the project cost is $>3-4 M:
    - **Regionally procured**
    - Traditional
    - **Prequalified Lowest Bid**
  - If the project is a **Freeway**:
    - **Centrally procured**
    - Traditional
  - If the project is not a **Freeway**:
    - **Hybrid structure of centralised and regional procured**
    - Non-traditional procurement 20%
    - Traditional 80%

Figure 5.23: Case E(R) Procurement Decision Model – Building Consultant

- **Building Consultant**
  - If there are **prequalified consultants in that area**:
    - **Prequalified Lowest Tender**
  - If there are not **prequalified consultants in that area**:
    - **Non-prequalified Lowest Tender**
Table 5.5: Distribution of Construction Contract Type for Case E(R)

<table>
<thead>
<tr>
<th></th>
<th>Traditional</th>
<th>BOOT</th>
<th>D&amp;C</th>
<th>Novation</th>
<th>CM/PM</th>
<th>On-call multi task</th>
<th>GMP</th>
<th>Full cost reimbursable</th>
</tr>
</thead>
<tbody>
<tr>
<td>E(R)1</td>
<td>&gt;80%</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>E(R)2</td>
<td>&gt;80%</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

* Respondents both indicated that traditional procurement took place more than 80% of the time but provided no other data

5.6.3 Defining Value-for-Money

Project managers viewed VFM as an important objective of their procurement activities. The Department has a strong preference for construct-only projects, and a very strong preference for awarding these to the lowest priced prequalified tenderer.

Well I guess you could say all our contracts are really based on Value-for-Money. Indirectly we identify that by getting a lowest bidder. – Interviewee E(R)1

The logic is that for a construct-only project all the requirements of the work are specified in the contract documents, and hence the lowest price provides the best Value-for-Money. VFM means getting the level of quality specified in the design documentation at the lowest possible price.

We’re defining the value or the quality of the product. It’s not necessarily the best product but a quality product … Hence a person who can come back with the lowest price really is providing us our best Value-for-Money. – Interviewee E(R)1

The dominant theme to emerge was the financial perspective of VFM as the lowest cost being the best Value-for-Money. VFM in the tendering process means using local knowledge and accepting the lowest priced bidder. Project managers spoke of analysing bids to compare them with industry estimates and historical data. Whilst money is the primary driver of VFM, if a contractor proposes elements on a project that the Department views as adding value then it will be considered provided it still allows the works to be done within the funding allowance.
On non-traditional projects, the scope of work is considered carefully so that projects are not tendered with large uncertain elements of design still requiring resolution by contractors. This is done purposely by Government to enable them to call for tenders in a way that enables them to select between bidders on the basis of lowest price.

So we decided to simplify the works a bit and alter the delivery strategy and hope to bring in some of our second tier contractors … by doing that we opened the competitive pool up to around about twenty tenderers, which just makes a more competitive environment. And in the end we actually were justified in doing that because the prices that we got were a lot closer to what we expected and were actually lower than our engineers estimate for a number of the tenders. – Interviewee E(R)2

If a contractor submits a tender price that is greater than 10% higher or 20% lower than the expected cost they are required to explain the difference. Once contractors submit their price the only way that the price can be removed is if the Department agrees to its removal.

5.6.4 Selection Criteria

Whilst stating that it is not necessarily the lowest bidder that is awarded the contract, projects are overwhelmingly selected on the basis of price.

The lowest price will normally be the one that is chosen unless there are very special reasons not to. – Interviewee E(R)1

There is however, a risk mitigation process under which project managers risk adjust the price assumptions of projects. Where contractors have submitted bids and the Department believes they have made a mistake it then becomes a negotiation process between the Department and the contractor. A contractor can either withdraw their bid on the basis of being alerted to a mistake or elect to keep the bid in. So it can be on the basis of this perceived risk that the lowest bid may not be accepted. The Department might also abandon the lowest cost route where a contractor has elected to maintain their bid, after having being alerted by the
Department that it may contain a mistake. The Department might view a low bid as being too risky, and feel that a contractor has submitted a low bid to win the contract and will then seek to claim money back later via contract variation claims.

It’s no advantage to us at all if the contractors go broke, or even if they put in prices that are too low to get the work, because it only means that we’re in an adversarial situation straight away because they’ve virtually got to create variations to the contract to ensure they make a profit. – Interviewee E(R)1

Non-price criteria are not incorporated as formalised selection criteria, but project managers feel they do form part of the tender analysis. For example, at an early stage in the pre-tendering process a decision is made with regards to a contractor’s history and their capability to handle a project.

Selection criteria for consultants are based predominantly on price. However, non-price criteria including track record and previous experience are also considered but not as formalised selection criteria. It is also uncommon for non-price criteria to be used when procuring non-traditional projects. Prequalification is considered by the Department to have addressed non-price issues for contractors.

If a project manager makes a recommendation to award a project to anyone other than the lowest priced bidder then the chief executive officer’s approval is required. Anything outside of the standard approach prior to selecting the supplier has to the go to the chief executive for approval. At times the Department tries to convince either, or both of, the CEO and Ministers that to award projects to contractors who have submitted very low bids will cost more in terms of surveillance and require more resources to be allocated on a project by the Department. Judgements are also made about whether technical aspects of contractor’s bids meet those required of particular projects, but once that is determined the lowest price
prequalified bidder will win. As can be seen from Figure 5.24 the interviewees VFM knowledge and use of non-price criteria in their procurement activities was low.

**Figure 5.24: Case E(R) Interviewees’ Value-for-Money Matrix**

<table>
<thead>
<tr>
<th>Extent and use of non-price criteria by interviewee</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>E(R)1</td>
<td>E(R)2</td>
<td></td>
</tr>
</tbody>
</table>

### 5.6.5 Government Priorities

Both project managers were aware of the strategic plan and the Government Priorities articulated within it. It was felt that procurement activities were undertaken in keeping with the strategic plan’s vision, but not necessarily driven by, nor explicitly linked to the plan. The Department has a strong preference for lowest cost procurement, and as a result achieving Government Priorities via the procurement process is not incorporated in the current approach unless the CEO’s approval is sought.

I would have to say indirectly to the best of my knowledge, no. Because certainly our procurement processes don’t change … If anything outside the standard variation we’re very rigid on has to go to the chief executive for approval. And he has five or six reasons which he can approve things on – being any other exceptional circumstances. And that would be the scenario there that it would be something that a Minister has directed that these works be done in a certain format with a certain relationship, and those would be then approved accordingly.

– Interviewee E(R)1
The major contribution the Department sees itself making to the strategic plan is managing the infrastructure that provides transport efficiencies to regions and markets allowing the state to grow.

Yes, certainly I suppose in what we do, in what we’re trying to provide we’re trying to satisfy a lot of the (strategic plan) strategies with regards to growing a link in (the State). That the project itself is designed to provide that benefit to the region and the state by providing greater transport efficiencies to key freight areas and markets. – Interviewee E(R)2

There is a standard participation policy condition of tendering for contracts over $3 million in regional locations and over $5 million in urban areas, where contractors are required to provide information on how the community will benefit from their approach to constructing. Standard environmental management clauses are also included as conditions of tendering, but these are not explicitly aligned to the state plan. There are criteria addressing Government Priorities written into contracts as standard ways of operating in the areas of participation policy and environmental policy. However, whilst training is a focus for the organisation it is not pursued via projects. The link between the strategic plan and procurement is not explicit although respondents felt that their procurement activities were broadly aligned with the state plan. Projects are not audited to assess how they contribute to delivering the State’s strategic plan.

5.6.6 Supply Chain Management

The selection of subcontractors is left to lead contractors who advise the Department of their subcontractors and the Department generally approves them unless a subcontractor has been previously removed from the prequalification list. Some subcontract packages, particularly in the areas of traffic signals, street lighting or designers, may have prequalification requirements. They are in the process of introducing prequalification requirements in the area of traffic management. Additionally, a contract might have requirements, for instance if there is a major bridge on a contract they will have to get a prequalified bridge contractor.
However, the Department has moved towards including less requirements on subcontractor prequalification and putting more onus on the lead contractor.

The regional offices may have knowledge of good and bad subcontractors in their area but it is left to the lead contractor to select, manage and deal with subcontractors. Feedback on performance is provided formally to lead contractors as specified in the contract, but not to subcontractors. The approach to managing the supply chain is hands-off, but in reality the lead contractor’s are not taking ownership of managing the supply chain. The Department is taking on some responsibility for assuring the quality of their subcontractor’s work to ensure they get a built asset of a quality they are satisfied with.

However the principal contractors are getting less and less experienced and so they’re happy to engage subbies, but they don’t manage them. So it’s a constant battle to get the principal contractors to take over the ownership of their subcontractor’s work. – Interviewee E(R)2

Subcontractors may receive informal feedback directly from the Department perhaps via technical experts whose responsibility is surveillance and auditing for the Department. It was thought that future contractual approaches would seek to involve principal subcontractors in partnering type processes.

There’s a school of thought out there that the subbies should be brought along, or the main subcontractor should be brought more into the process of the client and the principal relationship, because they’re often the main person that adds value or that ultimately has the responsibility for how things turn up out there is the subbies … I think as we go along in our next contracts is to have some of the principal subcontractors involved in a partnering type process and to get the principal to understand that that doesn’t mean that we’re going away from them or anything but it’s just that that subcontractor should be part of all of our decisions that we make and he’s the one that can affect the profit margins of the principal contractor anyway. – Interviewee E(R)2

Performance on projects has only a limited effect on success on future bids for work. Poor performance stops contractors from progressing to higher levels of prequalification where
they would be eligible to bid on jobs of higher value. There is little activity in the area of supplier development. However, the organisation attends meetings with relevant professional associations to ensure they stay abreast of current issues and developments but little hands on supplier development activity is undertaken. Figure 5.25 presents the responses received from the project managers in case E(R) against the dimensions of the theoretical framework. From Figure 5.25 it can be seen that case E(R) defines value-for-money narrowly. Predominantly projects are procured traditionally on the basis of lowest cost. There is limited pursuit of policy by-products when procuring projects and apart from some prequalification requirements for subcontract packages there is little management of the supply chain. Whilst showing some awareness of the tendering costs imposed on the supply side in preparing unsuccessful bids the tendering processes used seemed to encourage competition somewhat to the detriment of costs borne on the supply side.

**Figure 5.25: Case E(R)**
5.7 CONCLUSIONS – CROSS CASE ANALYSIS ROADS

The cross case analysis of the roads cases is structured around the theoretical model and addresses the five areas identified in the literature review: Infrastructure Procurement, Value-for-Money, Policy Objectives, Supply Chain Management and Tendering Costs.

5.7.1 Infrastructure Procurement

There are many similarities in the way the State roads agencies procure construction projects (as illustrated by Table 5.6).

Table 5.6: Cross Case Comparison of the Roads Cases – Infrastructure Procurement

<table>
<thead>
<tr>
<th>Case</th>
<th>Regional Office structure</th>
<th>Major projects area</th>
<th>Prequalification for contractors and no. of categories</th>
<th>Prequalification for consultants</th>
<th>Internal Design capacity</th>
<th>Internal Construction capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(R)</td>
<td>✓</td>
<td>✓</td>
<td>✓ 7</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>B(R)</td>
<td>✓</td>
<td>✓</td>
<td>✓ 5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>C(R)</td>
<td>✓</td>
<td>✓</td>
<td>✓ 6</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>D(R)</td>
<td>✓</td>
<td>✓*</td>
<td>✓ 8</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>E(R)</td>
<td>✓</td>
<td>✓</td>
<td>✓ 6</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

* - has three distinct areas that deal with regional, major and PPP projects.

As can be seen from Table 5.6 all five cases have a regional office structure where small projects are procured within regions and larger projects are procured centrally but might have involvement of regional office staff. The size of projects handled by the regions varies somewhat with differing financial thresholds triggering whether a project should be procured by the major projects area. In addition to a major projects office Case D(R) also has a dedicated PPP project office. As can be seen from Table 5.6 in all cases prequalification systems are used for contractors under a variety of classifications of work, and levels representing value and complexity.

Three of the states have prequalification requirements for consultants [A(R), C(R) & E(R)] whilst both B(R) and D(R) have no prequalification requirements for consultants. B(R) has
long term consultant contracts which enable them to draw upon consultants to do work quickly at pre-negotiated rates, whilst D(R) assesses consultants on a project-by-project basis.

All of the cases have both some internal capacity for design, and some have internal capacity for construction. Some states create internal capacity through partnering with local councils [C(R), D(R)]. Case B(R) reported having 25% of design work undertaken in house whilst case E(R) reported that 33% of design work was undertaken in house. Both of these cases talked about having this approach in order to develop the skills of the staff within their agency. Case B(R) commented that they were doing 10% of their budget as direct managed works, whilst case D(R) some capacity for works and single invite maintenance. Case C(R) has a much reduced design capacity than previously but still had construction capability that was useful for rural projects, emergency situations and training graduates. Case A(R) also has a more extensive in house capability where it can still undertake quite large sized projects with its own internal labour force.

In case C(R) projects valued over $2 million were handled by the centralised major projects section, whilst for B(R) it was for projects valued at over $10 million. Similarly, D(R) commented that regional offices only procure traditional projects of a small scale. Cases A(R) and E(R) are somewhat more decentralised with substantial procurements in the regions (e.g. A(R) up to $50 million) and they also procure major projects either in partnership with the central major projects office or outright in the region.

**Table 5.7: Frequency of Traditional Procurement Approach**

<table>
<thead>
<tr>
<th>Case</th>
<th>Traditional</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (R)</td>
<td>60-65%</td>
</tr>
<tr>
<td>B (R)</td>
<td>80%</td>
</tr>
<tr>
<td>C (R)</td>
<td>80%</td>
</tr>
<tr>
<td>D (R)</td>
<td>90%</td>
</tr>
<tr>
<td>E (R)</td>
<td>&gt;80%</td>
</tr>
</tbody>
</table>
As can be seen from Table 5.7 in four of the cases traditional procurement is undertaken more than 80% of the time. As a general rule, smaller projects in regions are undertaken using the traditional approach. For case A(R) projects are procured traditionally between 60-65% of the time but for larger projects they are using Early Contractor Involvement and Alliance approaches. D(R) is using PPP methods for large projects. C(R) tends to favour D&C and Construction Management procurement for larger projects. For smaller projects in all cases they will look to do some design in house and then a construct only project. B(R) undertake a mixture of construct only, D&C, alliances, and some direct managed works that is not quite full in-house construction. For many of the cases projects in remote locations may be procured via sole invitation inviting local government or local contractors to participate.

Table 5.8: Public Sector Experience, Procurement Experience and Mean Age of Project Managers Procuring Roads

<table>
<thead>
<tr>
<th>Case</th>
<th>Mean Public Sector Experience</th>
<th>Mean Procurement Experience</th>
<th>Mean Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(R)</td>
<td>19.5</td>
<td>22.75</td>
<td>46.75</td>
</tr>
<tr>
<td>B(R)</td>
<td>30.33</td>
<td>22.33</td>
<td>53.66</td>
</tr>
<tr>
<td>C(R)</td>
<td>24.25</td>
<td>11.75</td>
<td>46.75</td>
</tr>
<tr>
<td>D(R)</td>
<td>23.75</td>
<td>22.5</td>
<td>48.25</td>
</tr>
<tr>
<td>E(R)</td>
<td>21</td>
<td>12.5</td>
<td>48.5</td>
</tr>
<tr>
<td>Overall</td>
<td>23.71</td>
<td>18.47</td>
<td>48.65</td>
</tr>
</tbody>
</table>

Figure 5.26: Procurement Experience of Project Managers Procuring Roads
As can be seen from Table 5.8, Figure 5.26 and Figure 5.27 the project managers procuring roads projects on behalf of the state governments are on average in their late 40’s and have approximately 20+ years experience in the public sector. In cases A(R), B(R) and D(R) project managers have on average 22 years experience procuring projects whilst project managers in cases C(R) and E(R) have on average 12 years experience procuring projects.

### 5.7.2 Defining Value-for-Money

Universally, project managers agreed that VFM was an important objective. Project managers described VFM variously as having the maximum impact with taxpayer funds, a major objective, underpinning the whole thing, and important in everything that they do. There were only, at best, subtle and minor differences between the cases. A number of themes emerged from the interviews. A project manager from case C(R) was the lone voice in offering a formal definition of VFM. The definition mandated the consideration of life cycle.

> The fulfilment of objectives for the lowest whole of life cost, maximisation of objectives – Interview C(R)1
Using the regional offices’ knowledge of local conditions to influence specifications was considered important, as well project managers were conscious of life cycle as the Department inherits the ongoing maintenance ramifications of the asset. Project managers also acknowledged that VFM was limited by the scope of a project, hence the importance of design. A strong theme present in cases D(R) and E(R) was that VFM specified the level of quality through design documentation and then procuring at the lowest cost delivered VFM.

Overall project managers felt that the concept was complex and subjective, but clearly did not mean lowest cost and instead was related to procuring an asset at a specified quality level incorporating a life cycle perspective. One project manager commented that VFM was a complex concept with no universal definition, and instead when procuring a section of road the context and the strategy for the section of the road being procured needed to be considered along with price. Another theme to emerge was the perspectives of the authorising environment. Project managers felt that Treasury viewed VFM as delivering a project under budget, whilst politicians view of VFM focused upon what was delivered for the money. Figure 5.29 contrasts the differing perspectives on Value-for-Money with the extent and use of non-price criteria for the roads cases.
5.7.3 Policy Objectives

5.7.3.1 Selection Criteria

In case E(R) projects are awarded on the basis of price with very few exceptions. There is however some risk mitigation process where project managers risk adjust based on the price assumptions of projects, when they might view a low bid as too risky. Case D(R) also has a very strong preference for awarding on the basis of price. Both cases D(R) and E(R) consider that prequalification has covered non-price criteria, whilst cases A(R) and B(R) have the same view on traditional projects. For cases A(R) and B(R) if non-price criteria are included on a traditional project they are project specific.

When procuring non-traditional projects, cases D(R) and E(R) consider non-price criteria less formally during the shortlisting process prior to inviting contractors to submit full bids. The rationale is that anyone who does not satisfy the non-price criteria cannot deliver VFM and therefore will not be invited to submit a full tender. For B(R) on non-traditional projects non-price criteria varies from 0-70% of the selection criteria.
In the case of C(R) all construction contracts have non-price criteria. The more difficult something is to define in a contract, the higher the weighting attached to non-price criteria. The weighting attached varies from between 5-10% for construct-only projects through to 25% on moderate complexity construct-only projects.

For case A(R) non-traditional projects have a higher non-price component – one example given of a non traditional was 60% price and 40% non-price. On large projects non-price is used to shortlist prequalified contractors but the selection decision is made on price.

When selecting consultants cases A(R), C(R) and E(R) prefer prequalified consultants, whilst B(R) appoints consultants to its panel on a non-formalised mixture of price and non-price criteria. Cases D(R) and E(R) have a preference for procuring on price. However for E(R) non-price criteria, like experience, are considered informally, whilst D(R) notes that price can vary from as little as 30% of the consideration up to as much as 80% of the selection criteria. Case C(R) selects consultants on the basis of 75% non-price criteria but in some cases it can be as high as 100%. On traditional projects A(R) select prequalified consultants on a mixture of price and non-price criteria. Case A(R) frequently used non-traditional alliance and ECI procurement approaches where consultants are proposed by the parties bidding. The parties bidding generally comprise a lead contractor and a lead consultant working in partnership. On these projects A(R) further shortlists to two partnerships, who are invited to prepare designs for a period of time, during which they are paid for their design work. At the prescribed deadline the design proposals developed and constructability are assessed against a mixture of price and non-price criteria and the project is awarded to one of the two parties.
Table 5.9: Cross Case Analysis of Government Priorities/Strategic Plan Existence and Awareness

<table>
<thead>
<tr>
<th>Case</th>
<th>Government Priorities</th>
<th>Strategic Plan</th>
<th>All Project Manager aware of Government priorities and/or Strategic Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(R)</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>B(R)</td>
<td>✓*</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>C(R)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>D(R)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>E(R)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

* - researcher encouraged to refer to election promises as Government Priorities

As can be seen from Table 5.9, in all cases the project managers were aware of the Government Priorities and/or the Strategic Plan. In the case of A(R) standard non-price criteria designed to advance Government Priorities are incorporated on every project in the area of training. In the case of B(R) Government priorities in the areas of skills training and regional development are included on all projects. Project Managers can add other criteria depending on a project’s location for instance public art, indigenous training or involvement.

For C(R) some of the project managers believed that training as a Government Priority was a standard requirement on all projects. However, the responses from project managers about the implementation of this varied and they had very limited knowledge of the workings of the scheme, which seemed to focus more on training staff in government than within the industry.

The inclusion of GP criteria is not consistently applied on all projects and appeared to be driven by project managers. In case D(R) incorporating Government Priorities on projects had previously been more formalised, and the focus has shifted to getting contractors to articulate how they will address training, aboriginal participation etc. Similarly, in case E(R) Government Priorities are not incorporated into projects as anything other than lowest cost requires CEO approval. However, contractors are required to describe how the community will benefit from their approach to construction.
In all the jurisdictions Government Priorities appeared a higher priority on regional projects. In many cases e.g. A(R), B(R), C(R) location had an influence on the types of Government Priorities incorporated, such as; local supply, addressing both people and resources used, or indigenous policies.

In cases A(R), C(R) and D(R) the requesting funding stage required a justification to Treasury of the Government Priorities a project is fulfilling, or a link with the strategic plan. D(R) commented that the link between procurement and achieving Government Priorities was not explicit. C(R) further noted that the alignment or link between the Government Priorities/Strategic Plan and procurement is not seen by project managers. Project managers in cases B(R) commented that it is easier to pursue Government Priorities on alliance projects where Government staff are part of the team and there is a higher sense of developed team values. E(R) reported that their procurement is in keeping with the strategic plan, but it is not driven by, nor explicitly linked to the plan.

Only one of the five cases [B(R)] felt that Government Priorities were audited on their projects, but in reality this was not an audit but rather a monitoring process whilst a project is underway. For the other four cases [A(R), C(R), D(R), E(R)] the achievement of Government Priorities was not audited.

5.7.4 Supply Chain Management

Table 5.10: Comparative Supply Chain Approaches

<table>
<thead>
<tr>
<th>Case</th>
<th>Lead Contractors Select Subcontractors</th>
<th>Prequalified Subcontractors</th>
<th>Feedback given to Lead Contractors</th>
<th>Feedback to subcontractors</th>
<th>Supplier Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(R)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>B(R)</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>C(R)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>D(R)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>E(R)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>
As can be seen from Table 5.10 there are similarities between the approaches taken to the supply chain amongst the roads agencies. The management of the supply chain is very much left to the lead contractor including the selection of subcontractors. Whilst lead contractors are required to seek agency approval of the proposed subcontractors, very rarely does the agency not approve. In reality the agency is being advised as to who the subcontractors are and largely leaves the management of those subcontractors to the lead contractor.

In all cases except B(R) prequalification categories cover subcontract work in the most commonly used areas which means that for work in those areas lead contractors are required to select subcontractors who are prequalified for the package of work they are going to undertake on the project. B(R) found prequalifying subcontractors a labour intensive exercise, however, where a subcontractor has been nominated by the lead contractor and is considered critical to the project then the Government will insist on writing that subcontractor into the contract.

In case A(R) a financial threshold mandates that subcontractors undertaking packages of work valued at over $50K have to be prequalified. However, where a prequalification category does not exist for subcontractors, the project manager makes a decision based on previous experience of that subcontractor. C(R) comments that the number of classifications of works under which lead contractors have to select prequalified subcontractors is growing.

In terms of feedback, the contractual relationship appears to play an important role. All lead contractors are given feedback by the Government on projects because they are the other party to the contract. Feedback is given to subcontractors in two cases – A(R) prequalified subcontractors receive feedback, and in C(R) major subcontractors receive direct feedback and due to the partnering principles incorporated into all their projects other subcontractors
receive less formal feedback. B(R) comments that a subcontractor may receive a copy of the lead contractor’s feedback form and D(R) notes subcontractors may receive informal feedback where performance is poor. In case E(R) subcontractors may receive feedback directly from technical experts who do surveillance and auditing for the roads agency.

The link between performance and future work opportunities was not strong. In cases A(R) good performance gives contractors and subcontractors favourable work opportunities in the future. B(R) comments that performance has little effect on future work opportunities. Case C(R) questioned whether performance should have an effect on future work opportunities as Government acknowledges it does not conduct post project review sufficiently thoroughly, and felt it would therefore be potentially unfair. Case D(R) notes that performance affects prequalification level and status and is taken into account when awarding contracts. E(R) comments that performance on projects has only a limited effect on the success of future bids for work.

Supplier development was not a term familiar to the project managers. All of the cases undertook little in the way of supplier development. A(R) commented that they were trying to engage second tier contractors in ECI projects to build capacity, whilst B(R) were conscious that they have to train the smaller players to raise their skills and competencies, but were still grappling with how to get larger contractors to do that. Likewise in case C(R) there was little they recognised as being supplier development except perhaps inviting contractors into partnering arrangements. D(R) commented that they do undertake some training in quality and traffic control and try to provide an understanding to interested parties of Government requirements and future projects, whilst also liaising with industry groups. E(R) did not recognise any of their activities as being in the area of supplier development.
5.7.5  Tendering Costs

In most cases there was an awareness of the impact that their tendering processes had on the tendering costs imposed on the supply side. In two of the cases [A(R) & C(R)] there was a fixed project value threshold that dictated a project should be procured by the specialist major project area. The other three cases [B(R), D(R) & E(R)] also had specialised major project areas but did not have definitive rules about when they would be called upon. These projects are then procured centrally by project managers experienced in non-traditional projects who are generally fully aware of the cost impost placed on the industry in bidding for these projects.

In all cases the Government attempts to minimise the tendering costs imposed on the industry. However in case D(R) and E(R), perhaps because of their strong desire for traditional contracts to support the dominant organisational view of value as the lowest cost, they may have lost sight of the implications of its approaches for the industry. This is particularly so in the case of E(R) where major projects procured in regions are packaged in a way that enables them to be procured traditionally with the CEO’s approval required for any variation from lowest price. Rather than employing a shortlisting process they structure projects to enable more bidders to participate believing that greater competition has led to lower prices.

In cases A(R) and B(R) Government was aware that the costs imposed on the supply side by non-traditional procurement projects are likely to be high. A(R) could be seen as a leader in non-traditional projects; so as not to waste supply side resources in tendering on projects a significant part of the selection process was shortlisting on the basis of non-price criteria. Conversely both A(R) for alliance projects and D(R) for PPP projects, viewed the considerable client side costs involved with assessing bids as being a process that did add value and was therefore worthwhile.
Evidence from two cases [B(R) & D(R)] showed an awareness of the prohibitive costs prequalification imposed on the Government as a client. Both had found that administering prequalification for consultants an expensive and time consuming process. B(R) developed a consultant panel as an alternative and potentially more cost effective solution to achieving some of the benefits of prequalification for consultants. B(R) had also abandoned the prequalification of subcontractors. In other cases Government was identifying subcontractor prequalification as an increasingly important factor and prequalification approaches were expanding into new classifications of work. To avoid a lead contractor substituting subcontractors after winning a government contract B(R) locked in the proposed subcontractors, where the Government was keen for them to work on the project.

5.7.6 Conclusions

Tables 5.6-5.10 and Figures 5.26 – 5.28 show many similarities between the cases. The perspectives of VFM in cases A(R), B(R) and C(R) is slightly broader than those in the D(R) and E(R) cases. With respect to policy objectives A(R) and B(R) seem genuinely keen to pursue some policy by-products via the procurement process, as does C(R), but the operational aspects of how that could be achieved in C(R) was somewhat unclear in the minds of those responsible for delivering projects. In case D(R) it was noted they have moved away from viewing the procurement process as a vehicle for driving other policy objectives, whilst in E(R) it was not viewed as a priority apart from asking contractors for a statement as to how the local community would benefit from their approach to construction. Overall, the Supply Chain Management is largely outsourced and seen as the domain of the lead contractor. Cases A(R) and C(R) are the most active in attempting to manage the supply chain, with A(R) the most innovative with respect to relationship based procurement and C(R) keen to employ partnering principles. B(R) also attempts some relationship based procurement and D(R) and E(R) are quite passive in their approaches. The tendering costs imposed on the supply side
are generally considered but E(R) in its desire for traditional procurement seems less aware of the consequences of their procurement approaches.

Chapter 6 focuses on drawing together the themes identified in the cross-case analysis of both the construction and the roads cases.
CHAPTER 6 – CROSS CASE ANALYSIS CONSTRUCTION AND ROADS

6.1 INTRODUCTION

Chapter 4 presented the within and cross case analyses for the construction cases, whilst Chapter 5 presented the within and cross case analyses for the roads cases. The purpose of this chapter is to present the cross case comparisons between the construction cases and the roads cases, highlighting the major trends and discernible differences. The themes identified in the theoretical framework are used as the basis to present the cross case analysis in this Chapter. Section 6.2 focuses on infrastructure procurement, section 6.3 value-for-money and section 6.4 policy objectives. Section 6.5 presents the cross case analysis for supply chain management, whilst 6.6 addresses tendering costs. Section 6.7 highlights the conclusions of the cross case analysis of both the construction and roads cases within the same state jurisdiction, and the cross case analysis of construction and roads cases overall.

6.2 INFRASTRUCTURE PROCUREMENT

Procurement of construction projects is undertaken predominantly by a centralised delivery agency on behalf of client departments, except in case E(C) where procurement is decentralised to departments and the policy function is contained within a separate central department. In cases A(C) and D(C) departments can opt for external delivery, although in the case of D(C) the provider needs to be Government accredited.

When roads departments procure they do so for regional offices within their department and hence do not have a client relationship external to their department. Procurement in all of the roads cases is tied to the roads agency whilst for construction there are three cases in which...
procurement is not tied. When compared with the construction cases, the roads organisations have a more decentralised procurement approach, with regions overseeing projects, except for C(R) which is basically a centralised operation. However, whilst decentralised, all of the roads agencies have specialised areas that are responsible for procuring major projects: this was not as strong a feature of the construction cases.

A two-staged procurement process requiring the prequalification of building contractors before bidding is used in every case. In the roads cases the prequalification systems used are more nuanced and cover a larger number of work categories. Prequalification is a requirement for building consultants in every construction case, but two of the roads cases do not prequalify designers [B(R) & D(R)]. The roads agencies have maintained a larger internal design expertise and construction capacity [e.g A(R) & B(R)]. Further, their ability to partner with local governments to construct roads gives them another option for drawing quickly on an almost completely “internal” construction capacity. In construction case A(C) there was a substantial internal construction capacity available to government whilst D(C) maintained some construction capacity in the area of heritage buildings but otherwise there was considerably less capacity. Gateway processes administered by treasury departments were mentioned as playing a larger part when procuring construction projects.

In all cases traditional procurement remains a strong feature. The roads agencies more frequently procure traditionally, with B(C) and E(C) having the highest frequency of traditionally procured projects and cases A(C) and A(R) the most likely to procure using non-traditional approaches. A(R) and B(R) used alliances to integrate design and construct disciplines whereas managing contractor approaches to integrating design and construction were a favoured approach in a number of construction cases [e.g. C(C), D(C)]
The average age of those procuring is approximately 49 years old for the roads cases and 51 for the construction cases. For the construction cases project managers had an average of approximately 26 years experience in the public sector and 24 years procurement experience, whilst for the roads case project managers had an average of approximately 24 years public sector experience and 19 years procurement experience. There is a high degree of similarity between the characteristics of those procuring. Project managers in the roads cases tended to hold Bachelor degrees in civil engineering whereas in the construction cases the project managers generally held Bachelor degrees in either architecture, building or engineering. The project managers are highly experienced in procuring projects. In eight of the ten cases project managers had approximately 20 years or more experience procuring projects, with only project managers in cases C(R) and E(R) having on average 12 years procurement experience. In nine of the ten cases project managers had over 20 years public sector experience, with only the project managers in E(C) having on average 7 years public sector experience. Project managers in A(C) were the most experienced having on average 35 years experience in the public sector. The average age of those procuring ranged between 46 years and 53 years, with four project managers aged in their 30’s [from cases E(C), A(R), C(R) & E(R)] and only one female project manager was identified for interview, she came from case C(C).

6.3 DEFINING VALUE-FOR-MONEY

Value-for-Money was considered a crucial objective of procurement by all of the project managers interviewed. Only one project manager out of the 37 interviewed offered an official definition of Value-for-Money which was from case C(R). There was not an enormous difference between construction and roads as to how VFM was articulated. In articulating VFM, both construction and roads cases showed a strong inclination to preference financial considerations.
The definitions offered in the construction cases had a stronger element of client preferences and client determined values that was not a feature of the roads cases. Conversely the roads cases focus at a much higher level on life cycle considerations than do the construction cases. A lot of the time VFM means lowest price, or where defined more broadly is in virtually all cases, pursued operationally via lowest cost procurement. This can be demonstrated by contrasting how project managers define VFM with how they procure. Figure 6.1 contrasts the VFM knowledge of interviewees with the extent and use of non-price criteria by aggregating the project managers in each case. It demonstrates that for most of the cases the knowledge of VFM is moderate as is the use of non-price criteria. For cases E(R) and E(C) the knowledge of VFM and use of non-price criteria is low, whilst in case B(C) the knowledge is moderate but the use of non-price criteria is low. For cases A(R) and A(C) the knowledge is in the high range but the use of non-price criteria is moderate.

Figure 6.1: VFM Matrix Comparing Construction and Roads Cases
6.4 POLICY OBJECTIVES

6.4.1 Selection Criteria

When selecting building consultants it is common for non-price criteria to be a larger component of the selection decision than when selecting building contractors. However, the non-price criteria used for selecting building consultants are subjective qualitative assessments made by the project managers about the skills and experience of the consultants being proposed. For building contractors, non-price criteria are used but price remains a very important factor in the decision making process. A similar assessment is made for building contractors on non-traditional projects where a non-formalised approach to non-price criteria is used to shortlist before a second stage of bidding on price occurs. When selecting a building contractor four cases \([B(C), E(R), E(C), D(R)]\) had a strong desire for price as the primary selection criteria. In these cases prequalification is considered to have addressed non-price issues and so it is appropriate to procure on the basis of price. In both the construction and roads cases, the decision to go beyond a lowest price bid seemed somewhat dependent on the skills and experience of the staff procuring.

6.4.2 Government Priorities

All the project managers were aware of Government priority areas and felt that the state strategic plans had affected what was approved and funded by Treasury, but had not influenced how they procured. In states where strategic plans existed both the construction and road case from that state were aware of the document.

In the case of A(R) and A(C) non-price criteria that relate to Government priorities were set at 5-10% as a standard component of selection criteria. In cases B(R) and B(C) there was clearly a desire to have criteria related to government priorities included as standard on
projects. However, this as yet, did not appear to be standardised across either department. Cases C(R) and C(C) also seemed to have a desire to advance government priorities on projects but the project managers had limited and divergent viewpoints about how this was to happen and who was responsible for it. In cases D(R) and D(C) there had been an institutional move away from focusing on procurement as a means for delivering policy from other areas. In E(R) and E(C) there was little focus placed on government priorities with contractors bidding for work required to submit a cursory response to how local community development would benefit from their approach to building.

Of the 37 project managers drawn from ten cases only one project manager from case B(C) commented that the achievement of government priorities on projects was audited, but upon examination it was found to be an informal monitoring process, rather than a formal audit.

6.5 SUPPLY CHAIN MANAGEMENT

In all cases the approach taken to the supply chain was largely hands off, viewing the management of the supply chain as the lead contractor’s responsibility. At times project managers would recognise the importance of subcontractors on their projects but simultaneously bemoan the quality of subcontractor’s work [e.g E(C)]. In two cases C(C) and C(R) there was talk of partnering principles being overlaid on contracts, but otherwise there was little perception of partnership with subcontractors.

Prequalification is both more common and covers more categories of work in the roads cases. Additionally, four of the five roads cases required prequalified subcontractors to work on their projects with only B(R) not prequalifying subcontractors but instead locking lead contractors into using the subcontractors proposed in their winning tender. For construction,
prequalification operates at a lead contractor level but only case C(C) prequalifies subcontractors.

In all cases lead contractors get performance feedback on projects. In both construction and roads cases where a subcontractor is prequalified, or has been identified as a critical component of a project, they are likely to have been written into the contract, they will receive direct feedback from Government. It is rare in the construction cases for a subcontractor to be given feedback given that four of the five construction cases do not prequalify subcontractors. Subcontractors on roads projects are far more likely to receive feedback, given that four of the five cases prequalify subcontractors and the other case [B(R)] looks to write subcontractors into the contract.

Almost every project manager commented that performance feedback happens on projects but post project reviews were not something that as an organisation they placed sufficient emphasis on as they tended to move onto the next project. In all cases, and for all project managers, supplier development was not a term that they seemed familiar with. Further, even when it was explained, relatively little of their organisation’s activities were recognised as supplier development.

6.6 TENDERING COSTS

Government generally tries to limit the tendering costs incurred by the supply chain when bidding on government projects. For all cases, when selecting building contractors, there were either project value thresholds or informal rules, that effectively limited the number of building contractors bidding on projects. Generally on large projects or non-traditional projects Government is well aware of the tendering costs involved with bidding on those projects, so shortlists are drawn up before inviting full tenders. This was particularly evident
in cases A(R) and B(R) for their alliance projects and in case D(R) on PPP projects. However in case E(R) and D(R) the organisations’ appetite for traditional lowest tender projects appeared to have made project managers less aware of the implications of their tendering approaches for the supply side. They appeared to have lost sight of supply side tendering costs in their desire to get low prices via price based competition.

When procuring consultants, there are still thresholds in some cases [e.g. A(C), B(C), E(C) Department 1], but because the cost of consultant contracts is not as great, the use of thresholds appeared to be focused on being able to engage a consultant quickly.

In terms of the tendering costs on the client side, when tendering projects and prequalifying bidders, there was little evidence that project managers were aware of the costs absorbed by Government. However, in case B(R) they noted that previously they had prequalified consultants and subcontractors but had found the process too labour intensive. D(R) has also abandoned the prequalification of subcontractors due to its time consuming nature.

6.7 CONCLUSIONS

Figure 6.2, Figure 6.3, Figure 6.4, Figure 6.5 and Figure 6.6 show the various state construction and roads cases and their procurement approaches mapped onto the theoretical framework. A number of trends are evident in the data. When looking at the cross case comparisons for construction and roads cases drawn from the same state, a number of trends can be seen. In three states [A, B & C] the roads cases recorded a higher rating for procuring in a manner more befitting of public value creation whilst in states D and E there was little discernible difference between the roads and construction cases. There are a number of other trends evident when viewing the cross case results within the same state.
When examining state A (see Figure 6.2), both A(C) and A(R) are enabled to procure non-traditionally and they take a broad view of VFM. Further they attempt to advance Government Priorities as standardised non-price criteria via the procurement process and are mindful of the tendering costs that non-traditional projects impose on the supply side. The biggest difference between the roads and construction case in state A is that the roads case is more actively attempting to manage the supply chain.

Figure 6.3: Cases B(C) and B(R)
For state B (see Figure 6.3) it is known that B(R) procures non-traditionally and attempts to advance Government Priorities through policy by-products as part of the procurement process. Further B(R) believes they need to have a higher a degree of supply chain involvement and is aware of minimising costs for the supply chain, particularly when inviting bids on non-traditional projects. In contrast B(C) is almost totally procuring traditionally, defines VFM narrowly, and whilst recognising the opportunity the procurement process represents to advance government priorities, is procuring in a traditional manner that does not incorporate policy by-products. It is passive in its approach to the supply chain but does try to limit the numbers bidding on their projects through shortlisting processes.

**Figure 6.4: Cases C(C) and C(R)**

For state C (see Figure 6.4) the roads organisation [C(R)] has a broader perspective of Value-for-Money than C(C). In both C(R) and C(C) there was some focus on advancing Government Priorities via projects but it was inconsistently applied and there was little coherence in the eyes of project managers as to how this was being pursued. Both cases sought a higher degree of involvement and partnership with their supply chain and are cognisant of limiting the tendering costs incurred on the supply side.
For state D (see Figure 6.5) both construction and roads cases define VFM narrowly and have moved away from viewing policy by-products as an appropriate focus for Government procurement. They are passive in their approach to the supply chain and the roads case due to its preference for traditional procurement is perhaps not as strong on minimising tendering costs for the supply chain as it might be.

Figure 6.6: Cases E(C) and E(R)
For state E (see Figure 6.6) both cases E(C) and E(R) defined Value-for-Money narrowly largely in financial terms and were only slightly interested in creating policy by-products as part of the procurement process. Both cases are passive in their approach to the supply chain allowing lead contractors to do the actual management of supply. Given the frequency of traditional procurement and creating price based competition in the marketplace there appeared to be some areas where their approaches wasted resources on the supply side.

Figure 6.7 focuses on the construction cases whilst Figure 6.8 shows the roads cases when mapped onto the theoretical themes of the research as identified in the literature. Generally the roads cases defined Value-for-Money more broadly e.g A(R), B(R) and C(R), although cases A(C) and B(C) also did. This broader definition in the cases of A(R), B(R) and A(C) enabled non-price criteria in the selection process and more non-traditional procurement approaches to be used. Whether Government Priorities were advanced seemed to be somewhat consistent across the states between their roads and construction cases. So for instance it was consistent in cases A(C) and A(R) that Government Priorities were part of how they procured, as it was in cases B(C) and B(R). In cases C(C) and C(R) there was some intention to advance Government Priorities but they were inconsistently pursued. In cases D(C) and D(R), as well as E(C) and E(R) it was clear that incorporating Government Priorities was not a part of how they undertook standard procurement. There was only a small difference between the roads and construction cases with respect to pursuing policy by-products with roads cases pursuing by-products slightly more. It was clear that the roads cases generally worked slightly more in partnership with their supply chain than construction cases drawn from the same state. This was evident in cases A(R) and C(R) and in the construction cases only case C(C) sought some real partnership with its supply chain. There was little difference between most of the cases on tendering costs with only cases E(C), E(R)
and D(R) being so focused on encouraging price based competition they had lost sight of the possibility of by products in terms of Government Priorities.

**Figure 6.7: Cross Case Analysis Construction Cases**

**Figure 6.8: Cross Case Analysis Roads Cases**

**Procurement Process**

Drawing on the results and analysis contained in Chapters 4, 5 and 6, Chapter 7 provides answers to the research questions.
CHAPTER 7 - FINDINGS

7.1 INTRODUCTION

The purpose of this study was to explore the procurement of construction infrastructure projects by Australian State Governments. The purpose of this chapter is to answer the research questions and to highlight the contributions of this study in the form of conclusions drawn from the data. Sections 7.2-7.6 present answers to the research questions, whilst section 7.7 offers some generic conclusions.

7.2 RESEARCH QUESTION ONE: How do Australian State Governments procure infrastructure projects?

In all but one construction case, building construction projects are procured through a centralised delivery agency on behalf of client departments. The exception is case E(C) in which procurement is decentralised and client departments are empowered to procure their own building construction projects.

Roads projects are procured by specialist road agencies featuring a mix of centralised and decentralised procurement. Decentralised procurement is evident in regional offices for small projects and maintenance contracts, but the bulk of construction projects are procured centrally, particularly for larger, or more complex projects.

For both roads and buildings, contracts are awarded predominantly to prequalified consultants and lead contractors. Projects are procured using a two-staged process with the first stage being prequalification and the second stage, bidding. In the roads sector there is an increasing use of prequalification to address subcontractor elements of projects. Only one of the
construction cases sampled C(C) requires that prequalified subcontractors are engaged on their construction projects.

The most frequently used procurement approach in both building and roads sectors is the traditional approach with separated phases of design and construct, and separate contracts for consultants and contractors. There are clearly pockets of activity within both roads and building agencies using non-traditional procurement approaches to integrate the design and construction disciplines so that they take place concurrently. Non-traditional approaches are generally used by government on larger projects with elements of perceived project complexity. For the construction cases, managing contractor and D&C approaches are favoured when trying to integrate the design and construct disciplines. The roads sector uses Alliance and Early Contractor Involvement approaches but there is also a distinct flavour of experimenting with a return to direct management of programs of works. BOOT/PPP approaches are increasingly being explored by governments in both the building and roads sectors as a means of delivering projects.

For both building and roads agencies procuring projects, Treasury plays an important role. Treasury acts as gatekeeper to public finances, but also a scrutiniser and shaper of the procurement approaches proposed. From the perspective of project managers, Treasury exhibit a strong desire for the cost certainties more commonly found in traditional procurement approaches than the non-traditional procurement approaches where design and construction are frequently occurring concurrently.
Many of the project managers noted that Value-for-Money was not the same as lowest price and defined VFM in broader terms. Value-for-Money is a complex multidimensional construct that is not a fixed concept. It varies from project to project depending on what a client values for those procuring building projects which can reflect time, cost or quality issues. Others believe VFM takes into consideration innovation and implies non-price criteria must be considered. There were four major themes that emerged from the data.

No single universal definition. The meaning of Value-for-Money differs from project to project. It is important to select the right procurement approach for a particular project, and depending on the approach selected, VFM may be different. Some of this is dependent on how much design is done before the documents are tendered, and therefore how much risk is still attached to a project, or whether the risk has been designed out.

Financial Perspective – a strong theme emerging from the data was that of the delivery agency justifying expenditure on projects, the belief that competition from the market demonstrates VFM and comparing bids from the market against estimates. A lot of the focus of these activities seems to be centred around providing cost certainty for clients.

Client Perspective – the preferences of client departments have an impact on VFM as pursued via the procurement process by the delivery agency. The delivery agency is very much focused on justifying costs to clients, and providing cost and time certainty.

Complexity – the larger or more complex a project, the more non-price criteria are considered and become part of the selection criteria. For these projects VFM represents more than just lowest cost.

However, there is considerable gap between how project managers define VFM in broad terms and how they procure, frequently on the basis of lowest cost.
7.3.1 **Research Question Two (a):** To what extent is Value-for-Money an objective for Australian State Governments when procuring infrastructure projects?

Value-for-Money is overwhelmingly considered a very important objective for project managers procuring both building and roads construction projects. There was no discernible difference as to how much of an objective or the level of the priority attached to Value-for-Money by project managers. All of respondents (100%, N = 37) indicated that VFM was a critical objective of their procurement activities underpinning all of their activities when procuring projects. It was variously described as a major objective, a responsibility to the public to have the maximum impact with taxpayer funds, of critical importance and inescapably part of everything they do.

7.4 **RESEARCH QUESTION THREE:** What selection criteria are used by Australian State Governments when selecting both building consultants and contractors?

A mixture of price and non-price selection criteria are used, however price remains the dominant selection criterion. That said, all the cases apply prequalification when selecting based on lowest price. Non-price criteria are a more prominent feature of non-traditional procurements and these criteria are generally given a higher weighting of the overall selection criteria when compared to traditional procurements. Consultants are generally selected on a higher ratio of non-price criteria to price criteria than contractors. In some cases where the selection criteria are not formalised, an assessment is made of the service being offered (non-price) but then price criteria are considered to ensure the project cost is within an acceptable range. Typical non-price criteria considered in the selection of consultants involve primarily assessing the experience and track record of the people being proposed.

For the weighting of building contractors, the level of non-price criteria set were highly variable and influenced by a range of factors including; the procurement approach, project
complexity, appetite of client and the project manager for innovation and risk. Typically non-price criteria when selecting contractors are focused on the proposed team, their track record, and the proposed methodology.

In some cases, project managers indicated that by being prequalified a consultant or contractor has addressed non-price criteria and therefore the matter does not need to be included again in a tender submission process. There was one case where project managers were mandated to accept the lowest price, although this was done with some consideration of risk to the client. However, to consider any non-price criteria the approval of the agency’s chief executive was required, which meant that non-price criteria were not usually incorporated as part of the selection criteria.

In some cases, non-price criteria are linked to Government Priorities and contracts have standard clauses where contractors must submit bids describing how they will address Government Priority criteria. Government priority criteria most often address training, and local content, but can also include public art, indigenous employment, etc depending on project scope and location. In the agencies that consider government priority criteria, it is typically set at a weighting of 5-10%. There was also one case where a separate weighting was attached to past performance on government projects and set at 5-10%.

7.4.1 Research Question Three (a): Are non-price criteria used?

Non-price criteria are used in the selection of both building consultants and contractors. However, their use is variable and range from 0-100% depending on the project and client appetite for non-price criteria. Non-price criteria are not always formalised as selection criteria and given a weighting (e.g 20%). Instead, non-price criteria are sometimes used less formally as pass or fail criteria during a shortlisting process. Applicants who pass the criteria
hurdle will then be asked to submit a full tender, while those who fail do not advance to the tendering stage. In some cases the prequalification requirements are considered to have addressed non-price criteria and they believe that to repeat this exercise in the tender for a project is wasteful and unnecessary duplication.

7.5 RESEARCH QUESTION FOUR: How is infrastructure procurement linked to Australian State Government priorities?

Most project managers were broadly aware of their state government’s strategic plans and or government priorities where such documents were widely disseminated. However, infrastructure procurement is, at best, loosely linked to Australian State Government priorities.

Project managers were largely unaware of how their projects aligned with the strategic plan of the State Government, but assumed that for a project to be funded there must be alignment. Project managers believe the alignment of a project with the strategic plan is established in the project planning phase when the funding case is made to Treasury, and not in the project delivery phase. Project managers working in centralised agencies delivering construction projects for client departments are not always privy to the nuances of the project planning phase that takes place between the client department and treasury. However, roads project managers also responded believing the alignment happened earlier in the project planning phase.

Project managers procuring building projects believe that the focus of client departments is on core business and not on creating policy by-products. Policy by-products become more of an interest when they are within the policy objectives of the client department. For instance a department of education & training procuring a school might be interested in ensuring that
apprentices are trained during the construction phase because that activity falls under the policy domain of the broader department’s objectives. However, a department of health might see less relevance to their direct policy activities of having apprentices trained on a hospital redevelopment project.

Where internal delivery agencies justify their business unit’s existence by client departments choosing to procure through them, the project managers did not feel in a position to drive government wide policy via procurement.

Some standard approaches are used to incorporate into projects non-price criteria designed to address Government Priorities. However, these do not appear to be audited or performance measured in a rigorous way and seemed to be, at best, inconsistently applied and highly dependent on the inclination, skills and experience of the individual project manager.

7.6 RESEARCH QUESTION FIVE: How is Supply Chain Management undertaken by Australian State Governments when procuring infrastructure projects?

There appears to be very little Supply Chain Management conducted by Governments on their projects. There has been a shift from internal works departments actually building facilities towards project managing the acquisition and maintenance of facilities through their life cycles. Consequently, most of the design and construction previously undertaken by government has been outsourced to private sector firms. As a result the management of the supply chain is viewed as the domain of lead contractors. The government adopts a ‘hands-off’ approach to the supply chain viewing its management as the lead contractor’s responsibility.
However, there is a disconnect between government acknowledging that subcontractors often let them down on their projects, and their seeming unwillingness to engage with, or change the way the supply chain is managed. In fact, one could almost go so far as to conclude that government does not view the construction industry as a supply chain, and instead views it as a fragmented array of trade capability. They do not view interactions with subcontractors as interacting with a business and there is very little perception of partnership with subcontractors.

There is very little activity in the area of supplier development undertaken. Supplier development was not a term that respondents appeared familiar with. There were instances where they had cited examples of things their organisation did in the area, but they did not recognise the activities as being part of the government’s responsibility.

7.6.1 Research Question Five (a): How are lead contractors and sub-contractors selected?

Lead contractors are selected by the Government on a mixture of price and non-price criteria with the dominant discourse being prequalified lowest price tenderers. Subcontractors are selected by lead contractors. Lead contractors are required to seek the government’s approval of the subcontractor selection but in most cases this is little more than a formality. There are some instances in which prequalified subcontractors must be engaged. There are also some instances in which lead contractors submit bids that include particularly desirable subcontractors, then government will bind those subcontractors into the contract. Prequalifying subcontractors is a larger part of roads project procurement than it is for building project procurement. Government is not generally exposed to the basis upon which subcontractors are selected, but there was one case in which government mandated they be
selected on the basis of Value-for-Money and lead contractors needed to explain their decision if they selected anything but the lowest priced tenderer.

7.6.2 Research Question Five (b): How is performance feedback given to lead contractors and sub-contractors?

Generally, formal performance feedback is given to lead contractors during the course of, and after a project is completed, both in the form of written reports and verbally at on-site meetings. Formal feedback is rarely given to subcontractors as they are not considered to be parties to the contract.

Poor performance by subcontractors is an important issue, governments will voice dissatisfaction to lead contractors and expect them to deal with the situation. However governments are reluctant to get too involved in the lead contractors’ supply chain, as they do not want to interfere in the relationship between contractor and subcontractor.

Positive initiatives in the area of relationships and feedback include governments involving what were considered key subcontract packages in the on-site partnering meetings on some non-traditional projects and in some cases subcontractors formed constructive relationships with government surveillance teams, especially when they contained trade expertise. Project managers question whether the consistency and quality of feedback given to contractors enables contractors to actually plan improvement activities. There was a widespread acknowledgement from project managers that project reporting both during and particularly post project was an area in which government could improve.
7.6.3 Research Question Five (c): How does current performance affect future contract/project opportunities?

In theory poor performance on government projects has a negative effect on future work opportunities. Contractors can be removed from prequalification registers or in some cases have their status downgraded, and therefore lose access to future opportunities to bid on projects. However, in practice this happens rarely, and good performance does not seem to correlate positively with future work opportunities in the way that one might suspect. The acknowledged inconsistencies in the way the performance review processes are undertaken appear to be part of the problem. So project managers have ambiguous data to work on and many conclude that that they cannot preference a contractor strongly on prior performance because in so doing they might unfairly punish another contractor who has performed well but the respective project manager for any one of a number of reasons, had not completed the project reviews.

7.7 CONCLUSION

There is a strong focus on getting something done but the processes that follow on like project review and audit appear to lack consistency and sophistication in approach. This may be related to the lack of sophistication in information systems for dealing with post contract processes, and so building a bank of information about contractors and subcontractors is not happening, and represents significant opportunity for improvement.

Triangulation in the form of drawing on; a multidisciplinary theoretical framework to guide the data collection and explore the phenomenon; multiple data collection techniques (interviews and document analysis), and multiple informants from cases was used to build trustworthiness of this research (Lincoln & Guba 1985; Cavana et al. 2001). Credibility was established by undertaking a systematic approach to data collection and analysis as well as
employing these various approaches to triangulation. However it should be noted that for cases E(C) and E(R) there were only two respondents from each case and the trustworthiness of these cases might be viewed as lesser than the other eight cases.

Given the nature of qualitative research, external validity or being able to generalise the findings to a broader population is not possible or even desirable. The findings as outlined in this chapter are bound to the context of public sector infrastructure procurement in which they were collected, and are hence not for example transferable to infrastructure procurement by private sector clients. Likewise these findings may only have limited applicability to more transactional procurements (e.g. stationary) undertaken by public sector clients or to infrastructure procurement undertaken in various jurisdictions and nationalities given different social, political and industrial conditions existing.

Chapter 8 presents an in-depth discussion of the findings and draws upon appropriate previous research and theory from the extant literature.
CHAPTER 8 – DISCUSSION OF FINDINGS AND CONCLUSIONS

8.1 INTRODUCTION

The primary purpose of this study was to understand the practice of construction project procurement by project managers on behalf of Australian State Government agencies in order to explore the alignment between procurement and the creation of public value. Chapters 4, 5 and 6 provided the empirical findings in their aggregate form, whilst Chapter 7 provided answers to the research questions. The purpose of this chapter is to provide a theoretical discussion of the findings. In doing so, the key themes that emerged from the findings are linked to existing theoretical perspectives in the literature. Policy implications informing the practice of infrastructure procurement are also drawn from the data. This chapter highlights some of the most interesting discoveries of the research.

Section 8.2 provides a discussion of the findings focused on the cohort of project managers procuring infrastructure projects for State Governments. Section 8.3 discusses the procurement approaches used whilst section 8.4 focuses on value-for-money. Section 8.5 focuses on supply chain management and section 8.6 provides a discussion of tendering costs. Section 8.7 provides a discussion of innovation, whilst section 8.8 addresses policy by-products and section 8.9 presents the conclusions. Sections 8.10 and 8.11 reflect upon the research undertaken, discusses the limitations and points to areas of potential future research.

8.2 PROCUREMENT COHORT

The nature of procurement undertaken by the sample cohort of project managers is best described as strategic, complex and focused on the delivery of best value-for-money
outcomes; hence the APCC (2008) would classify project managers as procurement professionals. The project managers procuring infrastructure for State Government agencies are highly experienced and almost entirely male. Only one respondent from case C(C) was female from an architectural background with roads projects all procured by males from a civil engineering background. Those procuring have either spent an overwhelming proportion of their career in the public sector or have been career civil servants. They have, on average, more than 20 years experience in both the public sector environment and the procurement of infrastructure. Most project managers are degree qualified in the areas of architecture, construction and engineering and whilst their study will have contained procurement related material, few of them hold procurement specific qualifications as is advocated by the APCC (2006; 2008).

Over the course of their careers, the project manager cohort interviewed are likely to have experienced the period of Public Administration, been part of the shift to New Public Management led practices, and are now experiencing the post-NPM phase. The results showed that project managers felt that further political input was needed to make Value-for-Money more tangible and operational. This suggests that procurement professionals are either not comfortable with a value-creation decision making role, or do not feel empowered to make these public value judgement laden decisions in the post-NPM environment. It may also suggest that procurement is not viewed strategically by Government and the rest of the public sector and hence the status of those procuring is not sufficiently senior and therefore, not deemed to warrant direct interaction or exposure at the political level.

Public Value Management as articulated by Moore (1995) is not being practiced by these project managers. This might be because they are not senior enough within the organisation to actively engage in political management as espoused by Moore (1995) or they realise that it
would be too risky to do so. In some instances, where a project manager was particularly senior and experienced, there was evidence of engaging with the political environment. This was more common in the roads sector where experienced roads officers seemed to merit the trust of, and are consulted by their politically elected authorisers.

### 8.2.1 Policy Implications

Given that the project managers have been in the public sector for an average of 20+ years, there is the possibility that they have been heavily indoctrinated in the ways of NPM and may not be equipped for the post-NPM environment. They may need training to adapt, and may not feel comfortable or equipped for a role in which they are more actively seeking value creation and gaining the authorisation of the political level. Given the complexity of infrastructure procurement, combined with the experience and age profile of the project managers, there is also the danger that there will have been little thought invested in succession planning within Government over the NPM influenced period of outsourcing. Given that the State Governments have increasingly divested themselves of infrastructure design and construction capability it is possible that the remaining experienced core of project managers are remnants of a bygone era. It is therefore difficult to know where the next generation of project managers will come from or whether they have already been recruited. It is also likely, given the changed role of the Government in infrastructure delivery, that the next generation of project managers will not get the same enculturation into the infrastructure procurement and therefore not have the same level of experience and expertise which may lead to the Government having a lessened capability to deliver.

This appears particularly evident in the construction cases where less internal capability has been retained, and especially so in cases where NPM has been pursued aggressively [e.g. E(C)] and where activities of Government have been outsourced to such an extent that the
skills needed to procure and manage assets of this complexity may not have been retained. Clearly the construction cases have outsourced to a higher degree than the roads cases and the possibility exists that construction cases have not retained or developed the necessary skill sets to continue procuring complex assets in the future. This may require Government to change its approach to procurement in the construction sector and either undertake more alliance type procurements, or directly undertake some construction, to develop skills in their own organisations.

There is an opportunity for organisation development by engaging project managers in professional development. This could include, for example, secondment to the commercial sector to gain insights into different approaches to procurement. This approach to professional development might be based on an exchange program with commercial organisations.

If the public sector wishes to redress the gender inequity in infrastructure procurement then it may have to undertake targeted recruitment or identify good internal candidates for either promotion or development. Alternatively government might work with professional bodies to attract female engineers and architects.

8.3 PROCUREMENT APPROACH

There was clear evidence of the impact of NPM thinking in public works and roads agencies in the outsourced approach to construction of infrastructure where Government acts very much as a facilitator (Gray & Jenkins 1995). Infrastructure procurement by the State Governments is undertaken in a manner that is generally outsourced and centralised. However there has been the retention of core capabilities in some areas.
8.3.1 Construction

In all of the construction cases apart from case E(C) projects are predominantly outsourced to private sector providers in both the design and construction disciplines. Projects are centrally procured for client departments and project managed by agencies with expertise in procuring projects. These agencies are also predominantly geographically centralised, with some patches of regional procurement, but large projects are procured invariably through central offices. Ideologically NPM appears to have had a profound impact on how case E(C) procures buildings via decentralised procurement in departments and devolved decision making. In case E(C), the ability of the centralised policy unit, that administers prequalification, to influence procurement approaches in departments appeared weaker. Direct works is a less prevalent trend in the construction cases. However, there are some exceptions to outsourcing for example in the areas of heritage buildings where there is not perceived to be a market (market imperfection) which is a classic justification for government intervention (Aulich & Nutley 2001, p.5). There is also some internal capacity within some building agencies for direct labour and emergency recovery.

8.3.2 Roads

In the roads cases, projects were also predominantly outsourced to private sector providers in both the design and construction disciplines. The roads cases feature more decentralised procurement as regional offices manage sections of the road network and either procure projects outright, depending on the value and complexity of a project, or in partnership with centralised expertise, or alternatively have input into a project’s centralised procurement. The roads cases feature less outsourcing as they have retained more internal capability in both design and construction. There appeared to be an ideological move back towards undertaking more work in-house and a recognition that this was crucial in order to both maintain and
develop internal skills and expertise. Internal construction capacity is a considerably larger feature in roads agencies, and an additional capacity for construction can be accessed via partnering with local government.

8.3.3 Supply Market

The nature of the supply market and relationship in the roads and construction cases is different. In the roads sector Government is more or less the sole client for roads contractors, whilst for construction contractors, there is a much greater diversity of markets for what they produce and suppliers can have other important non-Government clients. As a result, there tends to be more stability in the relationships between roads suppliers and roads procurers than there is in construction suppliers and construction procurers. Of the three levels of Government (Federal, State and Local) that procure roads this research focused solely on procurement at a State Government level as their agencies are the most significant procurers of major roads projects, although this is sometimes in conjunction with Federal Government funding, and services metropolitan, rural and regional locations. Given that roads procurers at a State Government Level are effectively in a monopoly position their ability to exert influence on the supply chain is significant.

The results showed that roads departments do engage in elements of supplier development and a larger degree of specification and prequalification of subcontractors and that may be a consequence of the greater stability in the relationship. This stability may relate to the recognition that supplier development is an investment that will provide a return. On the other hand the construction cases also engage in some supplier development but do not specify or prequalify to such a large an extent. Construction is not in the same position to influence supply chain approaches on its projects and may not see supplier development as a worthwhile investment. In both construction and roads cases, there is probably less supplier
development than there might be and this seems to be a construction industry wide issue which may be a result of the temporary nature of projects and hence relationships.

8.3.4 Policy Implications

It has been noted that NPM influenced decentralisation leads to the erosion of responsibility and accountability (Minogue 2000; cited in O’Flynn 2007) and this seems to be evident in case E(C) where departments are engaging private sector providers to make, or advise, on many public value laden decisions. The move back towards increased internal capacity in the roads cases seems to be a post-NPM redefining of the role of roads agencies and the skills and competence needed to perform that role. Perhaps this has been a rebalancing of Government activities based on the recognition that procurement practices had become overly outsourced under NPM to the point, or were approaching the point, where the roads agencies lacked the internal capability to select suppliers and hence deliver quality assets.

A number of factors perhaps place the roads agencies in a better position to procure using traditional approaches. Roads cases have more internal design capability which enables them to better comprehend and assess the designs proposed by consultants. In particular, this enables them to further develop design documents which are seen to contain grey areas of the design that might be considered as risky. Grey areas in design documents complicate project and budget management because they may enable contractors to submit contract variation claims further down the track. Through having the capacity to further develop design documents, roads agencies can more confidently tender in the knowledge that there are less likely to be unforeseen issues that make traditional procurement a problem, and subject to contract variations from the builder. Additionally by exploiting regional offices’ local knowledge of conditions to influence design and supply specifications a more intimate understanding is achieved of how specifications influence the maintenance requirements of a
road over the course of its life cycle. Furthermore, the dependence of roads suppliers on Government contracts as well as the more established relationships between suppliers and procurers provides roads agencies with more opportunities to engage suppliers in partnering. All of these factors perhaps enable roads agencies to use traditional procurement approaches more successfully and explain why roads agencies more frequently undertake traditional procurement with separate contracts with consultants and contractors. The greater internal capacity, local knowledge, and more established relationships with suppliers enable traditional procurement to be undertaken with a higher degree of certainty and confidence.

8.4 VALUE-FOR-MONEY

Value-for-Money was considered a crucial objective by all of the procurement managers interviewed. The results of this study extend the findings of Murray (2002), who found that the primary focus of procurement in UK local government was VFM, to the field of infrastructure procurement by State Governments in Australia. Project managers were acutely aware of the implications of spending public funds and the duty upon them to discharge that responsibility diligently. When attempting to define VFM the following six major themes emerged from the interviews:

1. The meaning of Value-for-Money differs from project to project - This is in keeping with theoretical perspective espoused by public value management of embracing accountability by defining value locally (Moore 1995; Smith 2004; Stoker 2006). This also fits with the jurisdictional interpretations of best value in local government in which value must be negotiated locally (Communities & Local Government 2010; Best Value Scotland 2009; Best Value Commission 2007). The lack of universal approaches to defining VFM in the cases fits with Love et al. (2008) whose investigation of one Australian State Government found that procurement approaches in an Australian State Government were risk driven and that a best value procurement approach to selecting contractors can not be prescriptive.
2. Financial Perspective – In the construction and roads cases, the financial perspective was fundamentally important. Price is clearly a major factor in determining what is ‘best value’ but not the only factor. In the construction cases, a strong theme evident was that of the delivery agency justifying expenditure on projects and providing cost certainty to client departments and treasury. Whilst the roads cases did not to justify VFM to clients there was a view that competition from the market demonstrates this requirement especially where there was a focus on comparing bids received against estimates.

3. Client Perspective – In the construction cases, the preferences of client departments have an impact on VFM as pursued via the procurement process by the delivery agency. This is different from roads where an organisation-wide perspective of VFM influences procurement. This client perspective of VFM was very important in building projects, as centralised agencies largely procure for others, and in cases where they are free to use private sector providers, the agencies’ legitimacy is dependent on clients procuring through them. Roads do not have this same client complexity as they procure on behalf of their own organisation.

4. Complexity – In both construction and roads cases, the larger or more complex a project, the greater the likelihood of VFM becoming more than just financial considerations and the greater the likelihood of non-price criteria being considered as part of the selection process. In some instances VFM becomes more focused on value adding through innovation whilst recognising that the way to achieve that end was by getting project teams working collaboratively. The focus is on engaging a team (consultants, contractor and subcontractors) that can successfully deliver the project, but also work as part of a non-traditional project team. In procuring for large or complex projects agencies were more embracing of innovation, where considered appropriate, whilst recognising the political and public interest a large project can attract.

5. Design – The scope of a project, its design and the consideration of an asset’s use and life cycle are intrinsically linked to the value created by any project and these were viewed as
important elements of assessing VFM. The consideration of an asset’s life cycle was more prevalent in the roads cases, perhaps because the roads agencies have responsibility for the ongoing maintenance of the road over the course of its life cycle, whereas construction cases hand over a built asset to a client department, which then assumes responsibility for ongoing maintenance.

6. Political authorisation – Project managers were conscious of how the political environment could shape and influence VFM on a project. The authorisation from the political environment is required to legitimise interpretations of Value-for-Money.

A consistently used definition of VFM was in keeping with Juran and Gryna’s (1988) ‘value for money’ definition of quality which acknowledges the combination of being best for customer use, and the importance of price. Hence, best value would appear to be providing the most ‘value’ as assessed by the user.

8.4.1 Selection Criteria

The selection criteria used on projects are extremely variable. There were many project managers who believed that their organisational view was that non-price criteria are covered by prequalification. Non-price criteria are typically more a feature of non-traditional projects but are not always used as formalised selection criteria. Some project managers used non-price criteria informally as part of a shortlisting process to determine which parties will be invited to tender. Project managers make qualitative assessments of whether or not a party has the experience to deliver a project. If they do not believe a party has a suitable track record then they will not be included on the shortlist invited to submit a full tender. Non-price criteria may relate to Government priorities. Higher weightings of non-price criteria are used in the design area, where qualitative assessments are made of the service being offered and the price. Project managers determine selection criteria, based largely on the project’s characteristics. In construction cases, the determination of selection criteria takes place in
consultation with the client department, whilst in roads cases, the regional office is the client whose knowledge of local conditions might influence the selection criteria. The selection criteria used often reflect the VFM assumptions of the project being procured and the client values. Whilst project managers acknowledge generally that VFM does not mean lowest price, the procurement undertaken by project managers was largely undertaken on the basis of lowest price, albeit from bids submitted by prequalified tenderers.

### 8.4.2 Policy Implications

Murray (2002) found that whilst VFM was viewed as the primary objective of procurers in local government there was little guidance and advice provided to inform those procuring about the nature and components of VFM and how it might be achieved.

Value-for-Money is an important objective to project managers procuring infrastructure. Consequently, there is a strong case for authorisers in the political domain to provide guidance and direction. In most jurisdictions, guidance frameworks exist and focus on probity in the procurement processes rather than the delivery of policy by-products.

There was general convergence between the definitions of VFM offered by project managers in both the construction and roads cases. However, there was a higher degree of focus on life cycle in the case of the roads cases, perhaps due to the fact that they inherit the ongoing maintenance of the asset. The dominant view of VFM was a financially driven view which led to NPM influenced traditional procurement practices. Wong et al. (2000) noted in their UK based study that public sector clients are compelled to select lowest cost and price was clearly an important factor in all decision making processes when selecting both contractors and consultants. By contrasting how project managers define VFM with how they procure, it was apparent that in many instances, the project manager’s skills and knowledge are not fully
engaged by the way in which they procure. The decision to go beyond a lowest price bid is somewhat dependent on the skills and experience of the staff procuring but also influenced by the authorising environment. Project managers seem comfortable using non-price criteria in the consultant area where contract values are less and the accountability requirements are different, but are significantly less at ease when using non-price criteria to evaluate contractors.

There were three levels of non-price criteria usage and understanding. At the first level project managers use the non-price criteria covered by prequalification regarding a contractor’s history, experience, financials etc. At the second level project managers take account of the non-price criteria covered by prequalification but also include non-price criteria linked to the requirements of a project which might be, for example the early engagement of specialist subcontractors. At the third level project managers take account of the non-price criteria covered by previous two levels and additionally use appropriate policy by-product related non-price criteria. There were very few procurement professionals operating at level three. For project managers to engage with level three non-price criteria requires their organisations to enable and legitimate project managers use of non-price criteria on projects and this necessitates some tolerance of and for, experimentation with non-price criteria. This requires training for project managers in using non-price criteria, but perhaps more significantly the promotion of the messages of this training more widely within Government to educate the authorising environment of politicians and treasury.

In many cases accepting the lowest tender will be an entirely legitimate thing to do. However, in many jurisdictions, for example in Queensland, when a lowest tenderer is not selected the community has the right to access information held by the Government under the Right to Information (RTI Act 2009). Where a party requests and is informed they have submitted the lowest tender but were not selected then there is likely to be considerable
negative media exposure as a result of not having selecting the lowest tenderer. Unfortunately in these cases the media may have little interest in, or regard for, the reasons as to why a non-lowest cost tender was accepted, which may relate to technical aspects of projects that are not easily digestible or able to be communicated in a few column inches or in sound bytes.

Perhaps because of the larger elements of political and public interest, as well as risk and complexity involved in non-traditional projects for these cases VFM focuses on non-price criteria; assembling a project team, and innovation. Non-price criteria is used in a way that is ad hoc and not grounded or documented and there was little information about how the non-price criteria percentage was converted to financial terms for comparison and decision making.

8.5 SUPPLY CHAIN MANAGEMENT

The approach to managing the supply chain differs between the construction and roads cases. As noted earlier in the roads cases the relationship between the supplier and procurer is a more stable relationship based on the absence of other clients for roads suppliers.

8.5.1 Construction

In the construction cases, the approach to managing the supply chain is passive and the supply chain is viewed as the lead contractor’s responsibility. There is little requirement for prequalification at a subcontractor level unless a particular subcontract package is determined to be critical to a project. Lead contractors select subcontractors, and in some instances, it is mandated that they select subcontractors on the basis of lowest price. The project managers understand the important role of subcontractors, and acknowledge that subcontractors let them
down on their projects but there is little perception of partnership with subcontractors. Feedback is primarily directed towards lead contractors and only to subcontractors who are prequalified, or included in the contract. The construction cases seemed blinkered in their approach and unable to see any prospective change in the way supply chains are managed. They appeared unwilling to take ownership of supply chain management, and reluctant to innovate or to attempt to do things differently.

8.5.2 Roads

In the roads cases there was a slightly more involved approach to supply chain management. More developed prequalification systems exist covering lead contractors but also a larger variety of subcontract works and there is considerably more specification around materials such as asphalt and gravel mixes etc. Feedback is directed towards all prequalified parties working on a project. The roads procurement officers were actively thinking about how they could influence the supply chain to create competence and capacity, and address issues like skills development within the industry. One approach that seemed to be increasingly popular was through direct management but also alliance contracts where Government staff work in conjunction with contractors.

8.5.3 Similarities

There were a number of similarities between the supply chain management practices across the cases. All project managers commented that they undertook regular reporting during the life of projects, using both formal and informal channels, but those were more a feature of non-traditional contracts. The project managers question the usefulness of the feedback provided by them, and note that little performance feedback is given except if things go wrong. Performance has little effect on future work, except in the case of very poor
performance. Supplier development was not a term familiar to the project managers. There was little offered in the way of supplier development, although there were some initiatives but these were not recognised as supplier development activities. In some cases, both in construction and roads agencies, there was an appetite for non-traditional, relationship-based procurement. Undertaking relationship-based procurement appeared reliant upon the acceptance and approval of the authorising environment; treasury and politicians.

8.5.4 Policy Implications

The volume of procurement made by government clients provides significant leverage and influence in attempting to drive change initiatives through the construction industry. This is particularly so in roads sector where it is likely contractors will only undertake major roads projects for the Government, whereas in the building construction sector there is also a significant private sector demand.

Dainty et al. (2001) note that in construction supply chains, the main contractor often shields the subcontractors from any of the improved terms and conditions made available by public sector clients. So even if the main contractor and public sector client have entered into a more relationship based non-traditional working arrangement the benefits of this may not transfer down the supply chain to the subcontractors. If Government clients are mandating the selection of subcontractors on a lowest price basis, then they are indeed forcing lead contractors to act as a barrier to improved performance of the supply chain.

Government clients do not view the supply side in construction as a supply chain. Instead they view the supply side as a fragmented array of trade capability. They do not regard themselves as interacting with a business and therefore do not view subcontractors on their projects as wanting to be engaged in supplier development. Krause (1999) believes a key
component of supplier development is effective communication between clients and suppliers relating to performance, incorporating both formal and informal information. Project managers commented that communication was not a strength of their organisation’s approach, was weaker post project completion and that they tended to move onto the next project.

Most Governments undertake SME development and performance improvement activities. Within Australia at State and Federal levels authorisation clearly exists to undertake activities in this area. In Victoria it is covered by the activities of the Department of Innovation, Industry and Regional Development, whilst at a Federal level it is under the activities of the Department of Innovation, Industry, Science and Research. Broad authorisation exists to pursue SME development goals but it is not authorised through the mechanism of infrastructure project procurement. The reality is that a Department responsible for SME development expends public funds on these activities whilst another Department within Government awards infrastructure projects without considering SME development related activities. In effect, it is possible for the Government department procuring to reward contractors who carry out their contract by means in opposition to the Governments SME development policies.

All state governments use various prequalification schemes for contractors that take on the lead role on their projects. By administering prequalification, Government has already made a significant financial investment and has collected detailed information about much of the supply chain. There appears to be considerable scope and opportunity to use the existing prequalification systems to proactively engage the supply chain in supplier development activities. The roads cases are potentially in an even stronger position to engage in supplier development given they have more developed supplier relationships and also maintain a
higher level of expertise in terms of design and construction capability that can be drawn upon as part of the process.

The modern approach to supplier development that is now entrenched in the automotive industry involves engaging in performance measurement and performance improvement of the supply chain. This is invariably initiated by the original equipment manufacturers. Whilst it is unlikely that the personnel engaged in infrastructure project procurement would be qualified to engage in performance measurement and performance improvement activities, they are in a position to mandate it through contract conditions.

8.6 TENDERING COSTS

There was little difference between the roads and construction cases with their approach to the cost of tendering. There was clear evidence of Governments’ effort to limit transaction costs on the supply side as part of standard procurement practices. Agencies tailor their prequalification and selection processes on projects to reduce the transaction costs imposed on bidders in order to minimise waste on the supply side. Government agencies limit the numbers bidding on contracts with select tender approaches in which they match appropriate contractors identified from prequalification systems to a specific project.

For contracts of low value, Government is able to engage single source purchasing from prequalified suppliers and in some instances non-prequalified suppliers. This was particularly evident in the area of consultant contracts where sometimes there are pre-existing and pre-negotiated rates with consultants from a ‘consultant panel’ that enables them to be engaged without calling for tenders. The approval process in the consultant area is generally more relaxed because the contracts awarded are not as high in value, and the engagement for the provision of professional services depends more on the individual and their experience and
expertise. Given the value of contracts awarded to consultants are smaller, project managers do not feel under as much pressure about the decisions made with respect to the lessened consultant contract value. Single sourcing can also be used for construction contracts, but only for contracts of low value, and all agencies have a project value threshold that, once exceeded, require construction contractors to be prequalified.

The findings show that all agencies have prequalification systems that were an integral part of the way that they procure. The attitude of project managers was that prequalification systems contribute to the achievement of overall best value which is consistent with Palaneeswaran et al. (2003) and Jennings and Holt (1998).

Whilst Government was clearly conscious of the transaction costs it was imposing on the supply side, there appeared to be little consideration of the transaction costs absorbed on the Government client side. Two cases had abandoned prequalification approaches for consultants and subcontractors as they felt the costs incurred by Government were excessive. Another theme expressed was Treasury’s scepticism of non-traditional contracts involving up front transaction costs for Government in establishing relationship based procurements and project teams. From Treasury’s perspective the expenditure of funds on building relationships with project teams was hard to justify as Value-for-Money. In the all cases there was limited awareness of the costs involved in tendering projects, assessing bids, and maintaining prequalification registers.

8.6.1 Policy Implications

Treasury is perhaps reticent to expend public funds on building relationships in non-traditional projects because they understand that projects do not always proceed to the construction phase. To have spent money upfront on a project that does not then get built is viewed very negatively by the taxpayer and can be a political liability. For the supply side, a
project that they have spent time and resources working on that is then not fully realised involves significant tendering costs and opportunity costs in the form of the work they could have been doing. A recent high profile example is the Australian Federal Governments anticipated $43 Billion infrastructure investment in the National Broadband Network (DBCDE 2009). This initiative was first presented as part of the Australian Labor Party’s electoral campaign in 2007. Once the Labor party formed Government it then cancelled a competing initiative from the previous Liberal Government. Tenders were called for and proposals were received from six bidders by the closing date of 26 November 2008 (DBCDE 2009). On 15 December 2008 one bidder was removed for not having complied with the requirements, and then on 7 April 2009 the Federal Government announced that request for proposals had been cancelled as none of the bids represented Value-for-Money and that the Federal Government was going to construct the facility themselves (DBCDE 2009). In this case the Australian National Audit Office (ANAO) has estimated that more than $30 million was wasted on the tender process, including $17 Million on the Government side and $13 Million on the supply side (The Australian 2010; Ramli 2010). Clearly considerable financial expenditure has been made by both the client and the supply side.

Much of the cost associated with the tendering process involves multiple potential suppliers repeating the same work inputs and competition comes from how the competitors intend to deliver the project. If, as in the case where design and construction phases are separated, more of the process steps were carried out in-house and only once, the costs associated with tendering could be reduced for both the client and the supply side.

8.7 INNOVATION

One of the strong themes to emerge from the results was the risk aversion or preparedness to innovate displayed by Government. Government’s focus when procuring infrastructure was
on introducing innovation that delivered cost savings, or allowed more features to be built for the same price. This is not consistent with the risky nature of innovation that recognises that innovation will not always yield benefits. Case C(R) used non-price criteria focused on how contractors would innovate. However, whilst looking at innovation in selection criteria case C(R) awards contracts on the basis of lower price 80% of the time.

The barriers to innovation in the public sector were seen to be institutional in the authorising roles of Treasury and Politicians and the procuring agencies’ culture. There was also significant resistance exhibited by the risk averse nature of client departments. In the construction cases, innovation was often considered a priority by a procuring agency, but less so by client departments, politicians and treasury. This was not an issue in roads who procure their own projects but they were influenced by politicians, treasury and exhibited their own cultural biases.

8.7.1 Policy Implications

The stable conditions under which the Public Administration model thrived are long since gone. Potts (2009) believes that innovation is a crucial component for policy and government services to remain effective in an evolving economy. In today’s post-PA, and potentially post-NPM environment, public sector innovation is essential and needs to be institutionalised to ensure a steady flow of innovation and sustain improvement in the delivery of public services (Albury 2005). Potts (2009) postulates that, in the universal striving for efficiency, the public sector has eliminated the good waste that comes from attempting to innovate, and has become constricted as to its innovation. However, it needs to be acknowledged that innovation is risky, and may fail, costs incurred may be seen as ‘waste’ of resources rather than ‘learning’. Innovation is wasteful because good policy solutions and service provisions cannot be known in advance and therefore necessitate experimentation. There is a risk versus
reward trade-off in the public sector where the outcome of innovation can be political embarrassment and electoral failure, which perhaps explains the limited political acceptance of innovation.

Moore (1995) believes that managers need to experiment with ideas that seem plausible, whilst Albury (2005) believes that public managers need to have the skills, opportunity and motivation to innovate effectively and successfully. Whilst there are few easy answers for Government on innovation it does seem that procuring agencies might want to think about the skills, opportunity and motivation of their project managers as suggested by Albury (2005). Prior to innovation, the procuring agencies need to think about trying to build internal innovation capacity (Moore 1995, p.211). Perhaps, Rhodes and Wanna’s (2007) public value ladder offers some useful guidance on a way forward by encouraging the organisation to consider innovations that feature lower risk. This might necessitate experimentation and piloting on smaller infrastructure projects. The current logic seems to have been to innovate on larger projects where the benefit can be realised from integrating design and construct disciplines.

Open slather innovation is frequently not appropriate in the context of infrastructure projects. For example, the Bruce Highway is the biggest traffic carrier in Queensland and has had sections of it queried over whether the road surface has caused accidents (ABC 2005). It is currently in the midst of a $600 million upgrade (QDMR 2010). When procuring roads, the risk entailed in failed innovation may have very serious consequences in the form of road accidents and fatalities.

State and Federal Governments currently encourage innovation through grants and tax incentives. State Governments may wish to consider whether a proportion of the
infrastructure budget might be allocated to an innovation pool that could be deemed for innovation in infrastructure project construction.

8.8 **POLICY BY-PRODUCTS**

There is little recognition of the procurement process as a means to create additional public value in the form of policy by-products on Government infrastructure projects. Examples of policy by-products as part of the procurement process might include training apprentices, regional or indigenous involvement policies and public art.

There are instances where selection processes were designed to achieve Government priorities when procuring and, in these cases, there were standardised non-price selection criteria on contracts valued in the range of 5-10% of the total selection criteria. It was not clear from the interviews exactly how the percentage weightings of non-price criteria are arrived at, or exactly how they are used in computation of the overall result. Whilst some procurement officers attempted to create more public value through recognising policy by-products in the procurement process, these were pursued inconsistently, and at the instigation of project managers who often have differing understandings of how they apply. Policy by-products are not rigorously pursued and there is an inconsistent approach to assessing the outcomes achieved. Outcomes are not audited and hence do not appear to be a high priority, and given these outcomes, this undoubtedly influences the level of involvement of by-products on projects. Project managers did not appear to be engaged in trying to deliver Government Priorities through their project delivery process and their focus was very much on getting infrastructure built.
8.8.1 Alignment with Strategy

All of the project managers procuring are aware of the broader level strategies of government. They commented that strategic plans of Government influence which projects receive funding as part of the budgetary process so if a project is funded it has been identified as part of the strategic plan. However, whilst believing their procurement is undertaken in keeping with Governments strategies they have little involvement with, or exposure to, that strategic process aligning their procurement activities with this broader level strategy. Project managers assume that there is a link between organisation wide strategy and what they procure but believe strategy has little input into how things are procured, i.e. the pursuit of policy by-products. For example the strategic plan might outline policy intent such as improving health care, of which the construction project outcome from that policy intent might be building General Practice super clinics. The project is approved and built because it is in the strategic plan to address improvement in healthcare but the details of how the project is to be built is not necessarily contained in the strategic plan or attendant policies.

8.8.2 Construction

Construction projects are largely procured through centralised internal delivery agencies whose project managers procure for client departments. When procuring construction projects, Government is largely focused on creating a facility from which services within the policy domains of a client departments can be provided. For example when building a school, a department of education is seeking to create public value by delivering outcomes within their policy domain i.e. educational services to communities. Project managers view the focus for client departments as core business in the form of outcomes within their departments’ policy domains and not in viewing the procurement process as a means to create policy by-products.
However, the recent stimulus package has delivered buildings for schools and is associated with the Federal Government’s wider education revolution strategies. Part of the design and delivery criteria for schools halls has been that they must be available as a ‘community resource’. Furthermore, the focus of the stimulus package is job creation. These are examples of government seeking to deliver policy by-products through construction in the education sector.

8.8.3 Roads

Roads cases do not procure for client departments and instead view their regional office as the client. This means that when roads departments procure they are largely focused on delivering within the policy domains of roads.

8.8.4 Influences

The physical location of a project has an influence in shaping and driving Government Priorities incorporated on projects. These can range from incorporating the views of a local politician through to a “place management” approach to all government construction in an area. The incorporation of Government priorities appeared to be driven by and dependent on, the mindset, experience and approach of the project manager procuring the project.

Some cases appear to have a change in mindset where they are no longer viewing the procurement process as a means to create value, and instead are solely focused on what it is that is being procured. So the procurement process is not being viewed as the means to create social benefits and or other economic flow on effects. Some project managers felt that to procure and pursue policy by-products was ‘too hard’ or ‘just not worth it’. Some project managers were unsure about whether they were allowed to attach preference to local procurement and how that procurement practice by Government related to overarching competition and free trade policies.
8.8.5 Policy Implications

The project managers sampled were not involved in the strategic planning to determine which projects were to be pursued, which for a number of reasons, is an interesting finding. This highlights the potentially problematic nature of the public sector’s hierarchical structure and shows that the project managers interviewed do not engage with, or are excluded from, the political management processes advocated by Moore (1999). It also suggests that the view of procurement is not as integrated with the delivery of strategy as it might be (Kraljic 1983; Murray 2001). Perhaps because project managers have limited insight into this process and hence they appeared somewhat disconnected from the delivery of policy by-products that advance Government Priorities. However, it should be noted that State Government Strategic Plans are a relatively new phenomenon and may not yet be fully embedded within the case study departments.

For construction cases, there are only two examples where client departments are tied to procuring through the delivery agency. In two of the other three instances client departments choose between the internal agency or private sector providers. In one other case departments were empowered to procure construction. This means that the centralised delivery agency has less ability to influence government wide procurement approaches. Case E(C) shows that, with a decentralised procurement structure, there is less ability to coordinate and drive cross-Government initiatives like the procurement of policy by-products. Further, one of the departments from case E(C) largely outsources all procurement activities and decision making to a private sector company. It seems highly unlikely in this procurement approach that the private sector provider would be procuring in a manner that focused on achieving cross Government priorities. It seems unlikely also that the private sector provider would focus on rewarding contractors who deliver government priorities. Figure 8.1 describes a procurement model which considers both the impacts within the policy domain of the infrastructure being
constructed and the policy by-products that may be created. The evidence suggests that, currently, project managers only see the direct policy achievements created by procuring infrastructure and not the opportunities for advancing policy by-products that align to the broader strategic intents of Government.

Figure 8.1: A Policy by-product approach to Public Sector Procurement

Given the non-tied nature of procurement in some state construction cases, the delivery agency perhaps does not feel empowered to instruct client departments to include policy objectives of other department’s policy domains in their projects. This is partly a result of the delivery agencies’ reliance on government departments to procure through them to ensure their viability as a department. Government seeks to be a client of choice for contractors, and does not want to add more bureaucratic processes to their approach. Incorporating policy by-products needs to be done in a way that considers the supply side and adds real value to the process.
Moore’s (1995) strategic triangle tests a strategy on whether it is substantively valuable, legitimate and politically sustainable, and operationally and administratively achievable. The pursuit of targeted policy by-products via the infrastructure procurement process would appear to be legitimate given widespread Government policy and investment in areas like SME development and apprentice training etc. Whether the procurement of policy by-products can produce substantive value appears likely given the significant expenditure on infrastructure. However, what remains unclear is whether the achievement of policy by-products is operationally and administratively feasible and how policy by-products should be best pursued. It is also unclear whether this investment will be judged by political overseers as legitimately producing enough value to justify the administrative effort expended. It is likely that some experimentation will be needed in this area to pilot approaches to delivering policy by-products via the infrastructure procurement process.

Figure 8.2 presents the W.K. Kellogg Foundation (2001) basic logic model which is a systematic and visual way to present the relationship between planned work and intended results.

**Figure 8.2: The Basic Logic Model**

![Diagram of the Basic Logic Model](image)

*Source: W.K. Kellogg Foundation (2001)*

Figure 8.3 articulates the proposed approach being the reverse logic of the W.K. Kellogg Foundation (2001) model and starting by thinking about the impacts Government aims to achieve when it procures infrastructure projects. Instead of beginning with resources, inputs
and activities, Government should consider, determine and make explicit the intended impacts they desire to achieve for a community before planning commences for a project’s procurement. Then ensues a process of working backwards and considering what the critical achievements are, that must be put in place at each phase to facilitate the successive stages. For example, to achieve the desired impacts, what are the outcomes that will need to be created? This reverse logic suggests Government as a client should begin by thinking about the impact it hopes to make in a community and then planning its procurement with those impacts very clearly in focus. Furthermore as most projects are a result of expressed local need or pressure it enables the integration of community knowledge both from regional agencies and from potential users of the project as well as being a means of resolving disputes that arise from time to time about such government interventions.

**Figure 8.3: Reverse Logic Impact Driven Procurement Approach**

Source: Adapted from W.K. Kellogg (2001)
8.9 CONCLUSIONS

Ideally all Government procurement is undertaken to maximise the creation of public value. The construction of infrastructure by Australian State Governments undoubtedly creates public value. Infrastructure projects provide the public sector with considerable scope to create public value, both via the services delivered from the physical asset and in the form of policy by-products via the procurement process. However, the results of this study show that agencies are predominantly focused on delivering what Graycar (2007) called core-business, focussing on optimising procurement outcomes for client departments as opposed to outcomes for government as a whole. Lowest cost is still the dominant approach to procuring, albeit from prequalified suppliers, and it is clear that there are barriers to pursuing value based approaches not predicated on lowest cost.

The procurement undertaken is somewhat reminiscent of the pre-Toyota JIT approach, which is in keeping with the findings of the Latham (1994) and Egan (1998) report on construction. The desire for probity and public accountability when awarding lucrative government contracts, means that most Government contracts are subject to open and competitive bidding. The strong desire by Government for price based competition appeared to be motivated by probity reasons, because they have not developed methods of assessing non-price criteria that are robustly defensible and explainable to the electorate.

Perhaps, as a result, project managers are not relentlessly pursuing value creation opportunities (policy by-products) via the procurement process, and hence not acting as entrepreneurially or innovatively as Moore (1995) advocates. In fact public managers are not encouraged to act entrepreneurially or to innovate in their procurement activities. When they do, it is largely as a result of their own initiative because they think it is what a project requires. Moore (1995) advocates a shifting role for public managers that they become explorers and strategists who seek to discover, define and produce public value, rather than
technicians. If public managers are to create value for the communities they serve then they there is a need to strengthen the policies that influence authorisers. Using Moore’s logic (1995, p.211) operational managers should seek, find and exploit opportunities to create public value through policy by-products.

The evidence suggests that Governments are not delivering the type of ‘joined-up’ approach to construction procurement that would create public value through policy by-products in a range of policy domains. In the public sector context, the pursuit of multiple policy objectives means that procurement should be viewed as a lever for government to deliver broader outcomes for the communities they serve. Therefore any procurement strategy in a public sector agency must be cognisant of its place in achieving the mission of the wider public sector organisation and articulate how it contributes to its achievement. Given that the project managers reported being somewhat disconnected from the process of Government strategies, it appears that they are focused on what Ellram and Carr (1994) called implementing strategy and what Cousins et al. (2006) described as undeveloped procurement. Given the multiple objective nature of Government it would perhaps not be an appropriate role for procurement to be driving the government’s strategy (Ellram & Carr 1994). However, it might reasonably be expected that procurement would be viewed more centrally as having an important role to play in supporting the strategies of other functions within Government to drive the overall strategy of Government. The evidence from the cases was that project managers were not engaging with the political level as advocated by Moore (1995) and their engagement with the rest of government was also limited, in that they were not privy to the alignment of their projects with the strategic plan. The results showed that project managers have low involvement in strategic planning, perhaps because of the hierarchical structure of the public sector, and there was little internal integration of their activities with those in other areas of Government. Given this limited strategic contribution,
the status of procurement within Government is clearly not currently viewed as a strategic, value adding function.

Public value management approaches have a contribution to make to the increasingly post-NPM public sector, informing both theory development and practice. Rainey and Chun (2005) have questioned the universal application of business techniques in public sector organisations wondering what adaptations or adjustments might need to be made. A strength of Public Value is that it embraces distinctive and unique complexities of the public sector and does not attempt to merely apply business logic to the public sector. O’Flynn (2007) argues that a more pragmatic approach to selecting providers to deliver public services creates more opportunities for the maximisation of public value. In the context of infrastructure procurement this research contends that this means moving beyond mere private sector ideals and advancing policy by-products in addition to constructing infrastructure.

Moore (1995) identifies five principles under which greater value can be produced, of which one is increasing the quality of public activities per resource expended. Moore (1995, p.212) comments that increased value can often be gained by building new qualities into old activities or creating solutions to new problems, of which incorporating policy by-products would seem to be an alternative solution. Part of the reason for the lack of focus on policy by-products might be because of the manner in which parliament votes in favour of funding particularly initiatives. By voting funds to an initiative politicians legitimise government activity in a particular area. If the parliamentary vote is for construction of roads, then to spend that money on something else is a misapplication of parliamentary funds.

Australian State Government agencies procuring are acutely aware of the importance of procuring VFM. The procuring agencies view VFM from a predominantly financial
perspective, albeit incorporating whole-of-life costing, but few Managers defined VFM more broadly in terms of delivering policy by-product outcomes or achieving government priorities. They felt that taking the decision to spend additional money, even where it produced commensurate, or greater value, was more difficult to justify. Whilst aware of the organisations’ operational role in creating project value through shaping procurement approaches, selection criteria and weightings, they also felt that other parts of Government influenced the value that could be created from a project. In particular, treasury’s role in the budgetary process and client preferences shaped the value creation opportunities encapsulated in any construction project. The procurement professionals were cognisant of some additional public value creation opportunities the procurement process presents. In some jurisdictions, the efforts to standardise some policy by-product seeking non-price criteria on projects is an attempt to build in some additional benefits into the way projects are procured. When policy by-product non-price criteria are considered upfront when initiating a project, how much they actually influence projects seems somewhat variable, non-standardised and influenced by a project’s location, and the skills, vision and drive of the individual project manager. The approach to auditing projects against delivering non-price criteria is not as rigorous as it could be, and communicates clearly to those procuring that policy by-products are not valued.

There is very little active management of the supply chain undertaken by the client organisation, with the supply side largely left to organise itself. The prequalification system is somewhat underutilised in the contribution it could make to both the engagement and development of the supply chain and minimisation of tendering costs on both sides.

Figure 8.4 presents the revised theoretical framework. The research encapsulates some of the variables that should be considered in the pursuit of public value via infrastructure
procurement. The responses from interviewees validated four of the elements of the model (Value-for-Money, Policy Objectives, Supply Chain Management and Tendering Costs) as being important elements of public value in the procurement of public sector infrastructure. The interviews with managers also suggested that the appetite and willingness of the organisation to innovate was another crucial element that needed to be considered. Treasury were perceived as loathe to devote capital procurement funds to innovation.

**Figure 8.4: Revised Theoretical Framework**
8.10 REFLECTIONS AND LIMITATIONS

Whilst this thesis took some 4.5 years to complete, the genesis of the ideas behind this research has been in incubation over a period of some 7-10 years. From observing the move away from CCT to best value approaches in local government in both the UK and Victoria, Australia, and to discussing the selection of building contractors with Professor Derek Walker in the Construction Management discipline. A scoping study titled: Feasibility Study Linking Best-Value Procurement Assessment to Outcome Performance Indicators was submitted to the Cooperative Research Centre for Construction Innovation (CRC-CI) in 2000, and then approved, and completed in 2003.

Post this study it was hoped to undertake an action research project with an industrial partner to develop and pilot a rigorous and robust system for investigating non-price criteria in the procurement of infrastructure. The feedback from the client side indicated that they were not currently viewing procurement as a means of delivery other government priorities and it was felt that it was perhaps not ready for the ideas being espoused. Then it was felt that a better approach would be to focus on how the State Governments were procuring infrastructure and what value meant to them. The focus became to investigate how procurement was undertaken in the industry.

Over the course of this research thirty-seven interviews were undertaken, which included more than 300,000 words being brought together for transcription and analysis. This was a heavier burden than anticipated, and having the collected the data, the researcher felt a strong degree of attachment to it and investment in presenting the material well. In particular, the compiling of results chapters involved many, many painstaking months of pouring over the transcripts and re-listening to interview recordings, to distil the responses from project managers into the summaries contained within this thesis. The researcher had read qualitative
texts and paid attention to experts advising that qualitative data was rich, messy, and complex etc but it is one thing to have read the texts and another thing to have actually experienced it. In the course of undertaking a qualitative project of this magnitude the researcher learnt greatly from the process of actually doing the research.

The project undertaken was exploratory in nature. One of the strong elements and great successes of the project was in recruiting participants. Only one identified participant that was invited to participate in the study declined to do so. As part of the research design there is a trade-off between the number of cases examined and the depth of research in each case, which includes the number of interviewees representing each case. A case could be made suggesting the researcher focus on less jurisdictions. However, when you set about collecting data you are not entirely sure in advance how many participants you are going to get. In the end the multi-jurisdictional nature of the study makes the study a national undertaking that would not have been possible if half the states had declined to participate.

The fact that most of the cases featured highly experienced project managers also raises the possibility there might have been some interviewee bias as a result of the organisations having a role in providing contact information for project managers to then be contacted. However, the experienced cohort interviewed might actually be representative of the wider project manager population.

Placed in the same position as the researcher was at the start of this project again it stands to reason that the same set of uncertainties would also be faced. As a result the approach adopted would be very similar, particularly for the recruitment of cases and interviewees.
However, that is not to suggest there is nothing the researcher would like to do better next time. One of the most profound learnings from the research was about interviewing as a research data collection approach. There is considerable complexity and skill involved in being a good interviewer and it definitely seemed that the quality of the interviewing improved as the interviewer gained more experience.

The project could have been achieved differently by focusing the level of analysis at that of the construction project by perhaps focusing on historical project data and analysing how various procurement approaches led to different levels of public value being created. This would have constrained the project to a smaller set of issues, and focused less on the perspective of the project managers whose role is to procure for Government. One prominent scholar suggested to the researcher that this would have been a good way to proceed but ultimately the researcher felt more connected to, and engaged with, the project that has been undertaken.

8.11 FUTURE RESEARCH

The area of infrastructure procurement in Australia has not garnered a great deal of academic attention and has been somewhat under-researched given the large fiscal investment by Governments. As a result of having undertaken this research, considerable future research opportunities arise. The study could also be extended to incorporate the one state government and the two territory governments (NT & ACT) not included in the study. There is considerable scope for undertaking comparative studies in other jurisdictions and within different levels of government within Australia.

This research was primarily focused on the perspective of those procuring infrastructure projects rather than a policy perspective of how infrastructure is meant to be procured.
However, the research did not focus enormously on the world of work in which project managers operate. Hence, research exploring the pressures and constraints experienced by project managers in the workplace is an area ripe for future research.

Further research might investigate how the 5-10% non-price criteria directed at achieving policy by-products in some environments are currently being used to aid decisions. One contractual approach to procurement that might be of worth further investigating is the D&C+M model used by some of the roads cases. A longitudinal study investigating maintenance in the post completion years could compare costs for D&C procured projects and D&C+M projects.

Further research may more rigorously explore the policy environment to compare that perspective to the findings of this research which would provide an interesting contrast between how infrastructure is supposed to be procured and how it is currently actually being procured.

Alternatively future research could also focus on a range of perspectives on the delivery of policy by-products via the procurement process including the project manager, infrastructure policy, elected representative, client department and community perspectives. Also, as previously considered, future research may investigate developing methods of assessing policy by-product non-price criteria with an industry partner.

Also, having done this research and discovered that a number of State governments seek to use non-price criteria in construction project procurement, the original project that was the genesis of this research might be appropriate. This would bring a level of rigour and transparency that would provide contract procurers and contractors with systematic
information and enable policy by-products to be overtly incorporated in contracts. The stimulus package involving school buildings has made the twin strategies of improving education infrastructure and keeping construction firms in business and construction workers in work overt government policy. This stimulus is providing a public good through improved education infrastructure with policy by-products of keeping the construction industry occupied and reducing unemployment levels.
REFERENCES


Bazeley, P 2007, Qualitative data analysis with NVivo, Sage, Los Angeles; London.


Dalrymple, JF, Boxer, L & Staples, WJ 2006, 'Cost of Tendering: Adding Cost without Value?', in K Brown, K Hampson & P Brandon (eds), Clients Driving Construction Innovation: Moving Ideas into Practice ???


Dey, I 1993, Qualitative data analysis: A user friendly guide for social scientists. Routledge London, UK.


Humphreys, P, Matthews, J & Kumaraswamy, M 2003, 'Pre-construction project partnering: from adversarial to collaborative relationships', *Supply Chain Management*, vol. 8, no. 2, pp. 166-78.


Kelly, G, Mulgan, G & Muers, S 2002, 'Creating Public Value: An analytic framework for public service reform Discussion paper prepared by the Cabinet Office Strategy Unit, United Kingdom.'.


Krause, DR, Scannell, TV & Calantone, RJ 2000, 'A Structural Analysis of the Effectiveness of Buying Firms' Strategies to Improve Supplier Performance', *Decision Sciences*, vol. 31, no. 1, pp. 33-55.


Neuman, WL 1997, *Social Research Methods: Qualitative and Quantitative Approaches*, 3rd edn, Allyn and Bacon, USA.


Pettigrew, AM 1990, Longitudinal field research on change: Theory and practice. 

Perry, JL & Rainey, HG 1988, 'The Public-Private Distinction in Organization Theory: A 
Critique and Research Strategy ', The Academy of Management Review, vol. 13, no. 2, 
pp. 182-201.

Pollitt, C 1993, Managerialism and the public services: cuts or cultural change in the 

knowledge-based, and measurement explanations for make-or-buy decision in 


Potts, J 2009, 'The innovation deficit in public services: The curious problem of too much 
efficiency and not enough waste and failure', Innovation: Management, Policy & 
Practice, vol. 11, no. 1, pp. 34-43.

QDMR 2010, Work in full swing on the Bruce Highway Upgrade (Cooroy to Curra), viewed 

QLD 2009, Queensland State Budget 2009–10 at a glance, viewed July 1 2007, 
2009-10.pdf>.

research and the power of A Priori', Journal of Public Administration Research and 

Lynn Jr & C Pollitt (eds), The Oxford Handbook of Public Management, Oxford 


Rees, P & Gardner, H 2003, 'Best value, partnerships and relationship marketing in local 
8, no. 2, p. 143.

Rhodes, RAW & Wanna, J 2007, 'The Limits to Public Value, or Rescuing Responsible 
Government from the Platonic Guardians', Australian Journal of Public 

Rhodes, RAW & Wanna, J 2009, 'Bringing the Politics back in: Public Value in Westminster 


SA 2009, South Australia Budget 2009/10 Capital Investment Statement – Budget Paper 5


TAS 2009, 2009-10 State Budget Tasmania viewed 28 October 2009, 

Thai, KV & Grimm R 2000, Government procurement: Past and current developments, 
Journal of Public Budgeting, Accounting and Financial Management, vol. 12, no. 2, 
pp. 231-247

routes: re-defining the contours of construction procurement', Engineering 

Van Gramberg, B & Teicher, J 2000, 'Managerialism in local government – Victoria, 

VIC 2009, 2009 State Budget: Building Jobs, Building Victoria, viewed 6 June 2009, 
building-jobs-building-victoria.html>

Victorian Budget 2009, ‘World-class hospitals for regional Victoria’, viewed 6 June 2009, 
c82572bb002bcea7/76aed5b07149102aca2575ac003ff307!OpenDocument>

Vrijhoef, R & Koskela, L 2000, 'The four roles of supply chain management in construction', 

WA 2009, 'The Government of Western Australia – 2009-10 Budget Overview', viewed 7 
June 2009, 
10_budget_overview.pdf>

Waara, F 2004, Non-Price Criteria for Selecting Innovative Contractors, viewed April 5 
2006, <http://www.construction-
inovation.info/images/pdfs/conference_cd_2004/conference/Papers/Refereed%20Papers/016
%20Waara.pdf >.

Walker, DHT & Hampson, KD 2003, 'Procurement Choices', in DHT Walker & KD 
Hampson (eds), Procurement Strategies: A Relationship-based Approach, Blackwell 

Walker, DHT, Hampson, KD & Peters, RJ 2000, Relationship-based procurement strategies 
for the 21st century AusInfo, Canberra, ACT

Walker, DHT & Rowlinson, S 2008, 'Project types and their procurement needs', in DHT 
Walker & S Rowlinson (eds), Procurement Systems: A cross-industry project 

fundamentals', in DHT Walker & S Rowlinson (eds), Procurement Systems: A cross-

Walraven, A & de Vries, B 2009, 'From demand driven contractor selection towards value 
driven contractor selection', Construction Management and Economics, vol. 27, no. 6, 
pp. 597-604.


APPENDIX A – Index of Figures

Figure 1.1: The Structure of the Thesis .......................................................................................... 9
Figure 2.1: Moore’s (1995) strategic triangle .................................................................................. 24
Figure 2.2: A Construction Cost Continuum for Project Delivery .................................................. 54
Figure 2.3: Transaction costs versus internal capabilities in the ‘make or buy’ decision ............. 63
Figure 3.1: From Literature to Research Questions ........................................................................ 77
Figure 3.2: Theoretical Framework – Public Value in Public Sector Infrastructure Procurement .......................................................................................................................... 81
Figure 3.3: Linking Theoretical Framework to Research Questions .............................................. 82
Figure 3.4: The pattern of an interview .......................................................................................... 90
Figure 3.5: Case Study Design ...................................................................................................... 93
Figure 4.1: Case A (C) Interviewee Age and Experience Distribution ....................................... 101
Figure 4.2: Case A(C) Procurement Decision Model – Building Contractor ............................. 104
Figure 4.3: Case A(C) Procurement Decision Model – Building Consultant ............................ 105
Figure 4.4: Case A(C) Interviewees’ value-for-money matrix ..................................................... 109
Figure 4.5: Case A(C) .................................................................................................................. 119
Figure 4.6: Case B (C) Interviewee Age and Experience Distribution ....................................... 120
Figure 4.7: Case B(C) Procurement Decision Model – Building Contractor ............................. 121
Figure 4.8: Case B(C) Procurement Decision Model – Building Consultant ............................ 122
Figure 4.9: Case B(C) Interviewees’ Value-for-Money Matrix ..................................................... 124
Figure 4.10: Case B(C) .................................................................................................................. 127
Figure 4.11: Case C (C) Interviewee Age and Experience Distribution ....................................... 128
Figure 4.12: Case C(C) Procurement Decision Model – Building Contractor ............................. 130
Figure 4.13: Case C(C) Procurement Decision Model – Building Consultant ............................ 130
Figure 4.14: Case C(C) Interviewees’ Value-for-Money Matrix ..................................................... 132
Figure 4.15: Case C(C) .................................................................................................................. 136
Figure 4.16: Case D (C) Interviewee Age and Experience Distribution ....................................... 137
Figure 4.17: Case D(C) Procurement Decision Model – Building Contractor ............................. 139
Figure 4.18: Case D(C) Procurement Decision Model – Building Consultant ............................ 140
Figure 4.19: Case D(C) Interviewees’ Value-for-Money Matrix ..................................................... 142
Figure 4.20: Case D(C) .................................................................................................................. 145
Figure 4.21: Case E (C) Interviewee Age and Experience Distribution ....................................... 146
Figure 4.22: Case E(C) Procurement Decision Making Model – Building Contractor (1) .......... 148
Figure 4.23: Case E(C) Procurement Decision Making Model – Building Consultant (1) ......... 149
Figure 4.24: Case E(C) Procurement Decision Making Model – Building Contractor (2) ......... 149
Figure 6.2: Cases A(C) and A(R) ..............................................................254
Figure 6.3: Cases B(C) and B(R) ..............................................................254
Figure 6.4: Cases C(C) and C(R) ..............................................................255
Figure 6.5: Cases D(C) and D(R) ..............................................................256
Figure 6.6: Cases E(C) and E(R) ..............................................................256
Figure 6.7: Cross Case Analysis Construction Cases ..............................258
Figure 6.8: Cross Case Analysis Roads Cases .......................................258
Figure 8.1: A Policy by-product approach to Public Sector Procurement ....295
Figure 8.2: The Basic Logic Model ..........................................................296
Figure 8.3: Reverse Logic Impact Driven Procurement Approach ..........297
Figure 8.4: Revised Theoretical Framework ..........................................302
APPENDIX B – Index of Tables

Table 1.1: Australian State Government Investments in Infrastructure (2009-10) ....................4
Table 1.2: Research Questions – Public Value in Public Sector Infrastructure Procurement....6
Table 2.1: Reasons for existence, functions and purposes of Government ..............................12
Table 2.2: Forms of Public Value ............................................................................................27
Table 2.3: The Public Value Ladder .........................................................................................27
Table 2.4: Management Paradigms and the Challenges of Efficiency, Accountability, and Equity .......................................................................................................................................33
Table 2.5: Approaches to Public Management ........................................................................34
Table 2.6: Paradigms of Management ......................................................................................35
Table 2.7: Dilemmas Associated With Management Narratives .............................................36
Table 2.8: Comparing Ellram and Carr (1994), Reck and Long (1998) with Cousins et al. (2006) .......................................................................................................................................57
Table 3.1: Value-for-money Subsection of Interview ..............................................................89
Table 3.2: Scenario from Interview Approach .........................................................................91
Table 3.3: Data Collection Schedule ........................................................................................92
Table 4.1: Distribution of Construction Contract Type for Case A(C) .................................105
Table 4.2: Distribution of Construction Contract Type for Case B(C) ..................................122
Table 4.3: Distribution of Construction Contract Type for Case C(C) .................................131
Table 4.4: Distribution of Construction Contract Type for Case D(C) .................................140
Table 4.5: Distribution of Construction Contract Type for Case E(C) .................................150
Table 4.6: Cross Case Comparison Construction ...................................................................159
Table 4.7: Frequency of Traditional Procurement Approach .................................................160
Table 4.8: Project Managers Public Sector Experience, Procurement Experience, and Mean Age .........................................................................................................................................161
Table 4.9: Cross Case Analysis of Government Priorities/Strategic Plan Existence and Awareness .......................................................................................................................................165
Table 4.10: Comparative Supply Chain Approaches ................................................................167
Table 5.1: Distribution of Construction Contract Type for Case C(R) .................................176
Table 5.2: Distribution of Construction Contract Type for Case A(R) .................................191
Table 5.3: Distribution of Construction Contract Type for Case B(R) .................................202
Table 5.4: Distribution of Construction Contract Type for Case D(R) .................................213
Table 5.5: Distribution of Construction Contract Type for Case E(R) .................................225
Table 5.6: Cross Case Comparison of the Roads Cases – Infrastructure Procurement ....232
Table 5.7: Frequency of Traditional Procurement Approach ................................................233
Table 5.8: Public Sector Experience, Procurement Experience and Mean Age of Project Managers Procuring Roads.................................................................234
Table 5.9: Cross Case Analysis of Government Priorities/Strategic Plan Existence and Awareness.............................................................................................................239
Table 5.10: Comparative Supply Chain Approaches .................................................................240
APPENDIX C – SEMI-STRUCTURED INTERVIEW PROTOCOL

- Informed consent: signoff

Interviews - Roads:
To begin I was wondering if you could tell me a little bit about your background and experience in projects and procurement?

Operational Aspects of Procurement Work:
- How is centralised or decentralised is Construction Project Procurement in each organisation? Procurement organized in your organisation: regional offices, major projects etc? $ values, complexity?
- What type of procurement work is undertaken by your department? $Dollar value
- Do you have discretion about when to tender? No discretion?
- Can you describe a recent (substantial) procurement? Describe the process for me
- Are there government policies that impact on the way you procure?
- What are the criteria for selecting a main contractor?– (e.g prequalification etc)
- How do you deal with non price criteria? Weighted? 2 envelope system?

Prequalification:
- What are the criteria for admission on to the prequalification list? Self assess?
- When was your prequalification list last reviewed? How often is it reviewed? Annually? Biannually?

Contracts/Procurement Approaches:
Are contracts structured and managed in accordance with $ value of projects?

Are there thresholds: $K ? < 250K? that mandate certain contractual management approaches?

Looking at this diagram by Walker and Hampson (2003, p.13) where do you think the projects you procure fall?

Can you mark the diagram with the types of approaches you use, and provide estimates on the percentages of each type?

Supply Chain Management:

Could you tell me a little bit about how your supply chain operates?

How are subcontractors selected?

Do major contractors submit subcontractors as part of their bid? Key packages nominated? What input do you have into that?

Do you impose selection criteria on main contractors for the selection of subcontractors? or are you involved in the selection decision of subcontractors?

Are subcontractors required to be prequalified?

Do you undertake any supplier development activities for subcontract sector? If so what?

Is there feedback on performance given to main contractors? Does that effect opportunities for future work?

Is there feedback on performance given to Subcontractors? Does that effect opportunities for future work?

Its well documented that supply chain relations in construction are adversarial - How do you get main contractor and subcontractor working together?

Do you have measures in place to facilitate better working relationships? Procurement approaches?
Strategy – Government Priorities:

- Is there a link between the way you procure and the State Strategic Plan?
- To what extent are you asked to deliver policy objectives for other departments when procuring? e.g. train apprentices, environmental design etc
- Have you been asked to deliver policy objectives for another department on any recent project you procured? How does this happen?
- Is there a method for prioritising which Government objectives will be advanced on a particular project? Who determines those? How often does that happen? Is it $ dependent? Is it more of a focus on large $ projects? Does the budgetary environment make that easy to do?
- Are your projects currently audited against Government objectives? Would make any difference if you were?
- Do you think you get a whole of government approach/response to Procurement?

Value – Quality:

- Would you tell me a bit about Value for Money and how that relates to your work?
- To what extent is purchasing Value for Money an objective?
- What does Value (Best Value or Value for Money) in the Procurement process mean to your department?
- How does your department form policy on things like Value for Money?
- How do you pursue Value for Money through your procurement work?
- To what extent do you perceive that there are barriers to procuring best value for money in your department? What are they? Did they have an impact on any recent procurement?

Roads Project - Scenario – Procuring Best Value
A: You are going to widen and upgrade an existing road in regional ____. The project is estimated to be worth $38.4 million.

☐ How would you procure in this case?

☐ What would Best Value be in this case?

☐ Are there Government objectives that you would seek to advance?

☐ Who would determine these priorities?

B: There is a policy change advocating the local purchase of materials. To source environmentally friendly natural gravel materials locally there will also be a significant environmental compliance costs for the quarry to begin new works and extract the materials. By sourcing gravel materials locally for this project the budget is exceeded by $6.5 million

☐ How do you deal with this?

Demographic information about Procurement Officers

☐ How long have you been in your current role?

☐ How long have you worked in procurement?

☐ What was your previous work experience before procurement?

☐ What educational or qualification background do you have?

☐ Do you have any purchasing related qualifications?

☐ Age range: 1) <35, 2) 35-49, 3) >50

☐ How long have you worked in government?

☐ Have you worked in the private sector? – if so, how long?

☐ Are you a member of any professional bodies?
APPENDIX D – PUBLICATIONS


Moore (1995) believes that public managers should be encouraged to be entrepreneurial and innovative so as to search for the most valuable use of the public assets and resources entrusted to them for deploying. Infrastructure investment in roads and buildings accounts for over $30 Billion of Australian State Government expenditure annually (Government of SA 2007; Government of WA 2008; NSW Government 2007; Queensland Government 2007; Victorian Government 2008). As a result of this significant investment, the procurement process has the potential to deliver very significant payoffs for the community. This research examines how public managers procure construction projects and the extent to which they view the procurement process as an opportunity to deliver more than just a physical facility.


Public Sector Construction accounts for $4.9 billion in the 2006-07 Victorian State Budget and approximately $8 billion dollars in the Queensland 2005-06 State Budget. Consequently, innovation in the procurement processes has the potential to produce very significant payoffs for the community. This paper presents an overview of a proposed innovative procurement framework designed to achieve best value outcomes for the public sector client. Within such a framework, the provision of a robust decision making tool should enable public sector procurement officers to take account of non-price criteria in their decision making with a transparent approach to sharing the decision making criteria with the contractors seeking to secure the contract. Further, the approach to public sector procurement of construction being advocated is one in which a broader perspective of value for money is considered. The paper discusses the challenges and opportunities for public sector clients seeking to drive innovation through their supply chains. Future research will involve piloting the Best Value Procurement Framework in order to evaluate the benefits.


This research focuses on the concept of ‘best value’ when perceived from the perspective of the public sector client. In the case of ‘best value’ in the business enterprise, ‘best value’ is that which returns greatest value to the business enterprise’s shareholders. However, in the case of the public sector, ‘best value’ is more complex. Anecdotal evidence suggests that the use of non-price criteria in the procurement process is desirable, but that it has proved to be somewhat difficult to come to terms with dealing with non-price criteria in practice. Public sector procurement officers face the requirement to make auditable and publicly defensible decisions. This research therefore seeks to develop a rigorous ‘best value’ framework for public sector construction project procurement with a view to piloting the framework.
Uncertainty about the cost of tendering has led to research being conducted to understand the cost of tendering within the Australian construction industry. This has involved reviewing work done in Australia and overseas as well as exploring the efforts within the construction industry to collect cost of tendering information. While there is currently awareness of the cost of tendering and that efforts should be taken to minimise this cost, there is little precise understanding of it in terms of value or how it happens. This paper explores the barriers to understanding the cost of tendering. Throughout the worldwide construction industry tendering is acknowledged to be complicated, adding considerable cost to construction. Efforts to understand the cost of tendering are confounded by issues that are both visible and invisible to formal accounting of the construction process. This paper intends to demonstrate the problems and their causes. Anecdotes are derived from the literature, observations of construction purchases, and interview data to demonstrate the barriers to understanding the cost of tendering. This is augmented by corresponding observations of other major purchases. Problems and causes are described in terms of these anecdotes. Because of the diverse activities undertaken by constructors and limitations of accounting categories, expenses associated with tendering are difficult to capture and quantify. These problems are explained through examples. Even in those cases where there are genuine intentions to capture costs of tendering there is a failure to do so. It appears that implementation difficulties are so insurmountable that either people do not bother or management redirects effort from collecting cost of tendering data. It is also shown that the expense of tendering and uncertainty of outcomes leads tenderers to engage in concealed behaviour to reduce the uncertainty and cost associated with tendering. That is, collusion. For this reason especially, it is concluded that tendering and associated costs need to be understood in greater detail.


Rees and Gardner (2003) felt that ‘Best Value’ could be seen as tackling the embedded culture of local government. Whilst there has been a lot written about best value and its development there is still no precise definition of best value. The concept of best value has attracted varying interpretations. It has been a difficult to define and is an evolving concept. The current state of the literature on best value will be examined in this paper. Particular attention paid to the experience in Victoria and Scotland. Best value will be explored from the perspective of both the business enterprise and public sector.

This report is based on the Feasibility Study Linking Best-Value Procurement Assessment to Outcome Performance Indicators. The origins of the research lie in, inter alia, “Rethinking Construction” – The Report of the Construction Task Force to the Deputy Prime Minister, Mr John Prescott, on the scope for improving the quality and efficiency of UK construction, also known as The Egan Report after its author, Sir John Egan. The research is predicated on the general fact that any circumstance where quality and efficiency of processes has not been fully addressed will almost certainly result in waste, where waste is generally used to describe any circumstance where cost is added without the addition of commensurate value. In any situation where there is waste in the process, the client of the process will be deprived of the delivery of ‘best value’ in the delivery of the project, product or service. In the case of construction projects, the concept of ‘best value’ must be viewed from the perspective of the client. The perspective of the public sector client may be very different from the perspective of the business enterprise client and, indeed, within the set of business enterprise clients, the perspective may be very different for a property developer and an investment institution. The project explores the concept of best value from the different perspectives and focuses on the concept of best value when perceived from the perspective of the public sector client. The project was designed to investigate three strands of ‘Best Value’:

- Linking outcome performance indicators to a Best Value Procurement Framework
- Tendering costs
- Construction SME Performance Improvement and Optimisation

The findings of this report will be of benefit to the construction industry and in particular to public sector procurement agencies, purchasers of construction works, those involved in other types of major purchases and small-to-medium sized sub-contracting enterprises.
Project Title: Public Sector Construction Procurement

Investigators: Mr. Warren Staples and Professor John Dalrymple

Dear _____,

You are invited to participate in a research project being conducted by RMIT University. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

Who is involved in this research project? Why is it being conducted?

The Public Sector Construction Procurement Project is an RMIT research project being undertaken by Warren Staples as part of his PhD research studies in the School of Management supervised by Professor John Dalrymple. In this project we are contacting state government agencies involved with procurement of construction and roads to explore how procurement is undertaken operationally. The project will also examine the way in which decisions are made about value for money. The research has been funded by RMIT and the research plan for this project has been approved by the Business Portfolio Human Research Ethics Sub-Committee.

Why have you been approached?

We have selected the organisation you work for as because it has considerable experience in the area of public sector construction procurement. We would like you to participate in an interview to talk about how you procure construction projects. We have obtained your details from the publicly available webpages of your organisation’s website or via a recommendation from a work colleague.

What is the project about? What are the questions being addressed?

It is expected that 30 participants involved in construction procurement will participate in this research project and discuss a range of issues including how procurement is operationally undertaken, value for money and government priorities.

If I agree to participate, what will I be required to do?

We would like to you talk to us about how you procure construction projects so that we can gain valuable insight from your experience. We anticipate that the whole interview will take between 60 and 90 minutes to complete and will take place during work hours in your place of work.

What are the risks or disadvantages associated with participation?

There are no risks in participating in this research project. You are free to withdraw at any time. If you withdraw, any data that you have provided will be destroyed. The researchers will audio-tape and take notes of the interviews and you may request at any stage that your comments are not recorded or written down. If you are concerned with any aspect of the interview, you should contact Warren Staples or John Dalrymple, as soon as convenient.
Either will discuss your concerns with you confidentially and suggest appropriate follow-up, if necessary.

**What are the benefits associated with participation?**

This study explores an important and somewhat under researched area in the Australian public sector. It is hoped that the study will contribute positively to the view of procurement profession in the public sector and that participants will benefit from the knowledge created and insights gained into the best practice approaches from other jurisdictions.

**What will happen to the information I provide?**

The information provided by you will be used to understand how the procurement of construction is undertaken in the public sector. The information collected in the interviews will be used to write reports, conference papers and academic publications. In any reports or publications that we produce your identity will be kept confidential. Only pseudonyms will be used and identifying details will be masked. The interview tapes and notes will be kept securely in a locked cabinet at RMIT for a period of 5 years, upon completion of the project, before being destroyed. However, you should be aware that it may also be disclosed if (1) it is to protect you or others from harm, or (2) if a court order is produced or (3) you provide the researchers with written permission.

**What are my rights as a participant?**

As a participant, you have the right to:

- The right to withdraw their participation at any time, without prejudice.
- The right to have the tape recorder turned off at any time
- The right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided that so doing does not increase the risk for the participant.
- The right to have any questions answered at any time.

**Whom should I contact if I have any questions?**

Warren Staples  
School of Management  
255 Bourke Street, Level 3, Room 13  
RMIT University  
Melbourne Vic 3000  
Telephone: 03 9925 5964  
Email: warren.staples@rmit.edu.au

Professor John Dalrymple  
School of Business  
PO Box 944  
The University of Notre Dame Australia  
Broadway NSW 2007  
Telephone: 02 8204 4152  
Email: jdalrymple@nd.edu.au

**What other issues should I be aware of before deciding whether to participate?**

There are no other issues that you should be aware of before you decide to participate.

Yours sincerely

Warren Staples  
Professor John Dalrymple

Any complaints about your participation in this project may be directed to the Executive Officer, RMIT Human Research Ethics Committee, Research & Innovation, RMIT, GPO Box 2476V, Melbourne, 3001. Details of the complaints procedure are available at:  
http://www.rmit.edu.au/rd/hrec_complaints
APPENDIX F – INFORMED CONSENT
Public Sector Construction Project Procurement

RMIT HUMAN RESEARCH ETHICS COMMITTEE
Prescribed Consent Form for Persons Participating In Research Projects Involving Interviews.

PORTFOLIO OF
SCHOOL/CENTRE OF
Business
Management

Name of Participant:

Project Title:

Public Sector Construction Procurement

Name(s) of Investigators: (1) Warren Staples Phone: 03 9925 5964
(2) John Dalrymple Phone: 

1. I have received a statement explaining the interview involved in this project.
2. I consent to participate in the above project, the particulars of which - including details of the interviews - have been explained to me.
3. I authorise the investigator to interview me.
4. I give my permission to be audio taped: □ Yes □ No
5. I acknowledge that:
   (a) Having read the Plain Language Statement, I agree to the general purpose, methods and demands of the study.
   (b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied.
   (c) The project is for the purpose of research and/or teaching. It may not be of direct benefit to me.
   (d) The privacy of the information I provide will be safeguarded. However should information of a private nature need to be disclosed for moral, clinical or legal reasons, I will be given an opportunity to negotiate the terms of this disclosure.
   (e) The security of the research data is assured during and after completion of the study. The data collected during the study may be published, and a report of the project findings will be provided to participants. Any information which may be used to identify me will not be used.

Participant’s Consent

Name: __________________________________________ Date: __________________________

(Participant)

Any complaints about your participation in this project may be directed to the Chair, Portfolio Human Research Ethics Sub-Committee, Business Portfolio, G.P.O. Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 5594 or email address rdu@rmit.edu.au. Details of the complaints procedure are available from: www.rmit.edu.au/council/hrec