

An insider's perspective

Governance of large ICT software projects in
the Australian and New Zealand public sectors

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August 2021

A thesis submitted for the degree of Doctor of Philosophy of
The Australian National University

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Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university. To the best of the author's knowledge, it contains no material previously published or written by another person, except where due reference is made in the text.

Grant Douglas

August 2021

Acknowledgements

I would like to thank my wonderful panel, John Wanna (Chair), Helen Sullivan, and Karl Löfgren. Without their support and advice, I am not too sure where this thesis would have finished up. Each have their own styles, but collectively the blend was perfect. John pulling references for articles and books out of who knows where from his extraordinary memory, and the even more extraordinary ability to know exactly where a book was in his (I say this fondly, and I am sure he will not mind me calling it so) mayhem of an office; a sight to behold. Helen for her humanity and continual encouragement when I had the ‘I am not worthy moments’, and knowledge of all things public policy. Karl for his constructive directness when I wandered off down some strange path; and for hosting me in Wellington, New Zealand on several occasions at the Victoria University of Wellington. We also checked out a couple of bars in that lovely city which was nice too.

During my time on campus at ANU I was also fortunate enough to have had an office in the ANZSOG corridor of the Crawford Building, and it was a supportive environment. Thanks to all there for their friendship, but special mention to Val Barrett, Isi Unikowski, and Christiane Gerblinger. They were great sounding boards. Special thanks to ANZSOG for providing me with a scholarship, and to Martin Heskins, ANU School of Politics and International Relations, for his support in providing small grants to assist in travelling to and from my multitude of interviews in Australia and New Zealand.

On that note, a huge thanks to all of the individuals across Australia and New Zealand who agreed to participate in my research either as interview participants or in providing information and documentation. Without that participation this thesis would not have been possible. A special thank you to Marg McLeod for initially rallying the New Zealand troops, without that help it would have been far more difficult to get access to the participants.

One of the goals of my thesis was to meet both the scholarly requirement and to make it easy to read and comprehend, perhaps even enjoyable to read, and to do so by telling the stories of the individuals involved in these large government ICT software projects. At ANU I attended a small work group by a visiting US political scientist named Katherine J. Cramer, the author of a book called *The Politics of Resentment: Rural Consciousness in Wisconsin and the Rise of Scott Walker*. Cramer stated she had previously, to meet the demands of political science

journals, written in a very prescribed manner and defended political arguments through quantitative methods. However, when writing her book, she took a new approach. Cramer wanted to address academic criteria, but to also write in a style that would communicate the message to a group wider than other academics, and to demonstrate that qualitative research can be applied effectively to political analysis. This was important as Cramer wanted to tell the stories of rural voters, what mattered to them and why. It is a particularly good book.

Whilst I am certainly not comparing the quality of my thesis to Cramer's work, she did inspire me. I hope that if people do read this thesis it communicates the message clearly. For those involved in these projects, I would think that the stories are also very relatable.

Finally, a dedication to my amazing mother, who put her five children before everything and still believes it is her role to make sure we are okay. In turn, I owe her everything.

Abstract

For many decades, world-wide, and across sectors, large ICT software projects have experienced ongoing poor outcomes with industry research indicating that almost all will fail to deliver to original expectations, some spectacularly so. There is much existing research on the causes of both public and private sector project failure, such as poor project management. Despite all this past learning and research, the problems continue.

To address an identified gap in literature this research differentiates itself from other research by a number of factors. Firstly, it will focus on the collective Australian and New Zealand public sectors, where it is argued there is a dearth of targeted research. Secondly, these large projects all operate within institutional frameworks that provide the rules, guidelines, and controls for these projects. These collectively form the institutional governance of large ICT software projects. Given that the Australian and New Zealand public sectors also continue to have poor outcomes, yet they have historically developed institutional frameworks, there is something amiss. Therefore, the research puzzle is, how effective are these institutional frameworks in providing the governance for large ICT software projects in these sectors?

To address this puzzle the research further differentiates itself from existing literature. The thesis applies an institutionalist's lens. To obtain the data a qualitative, interpretive, and comparative research design was applied. Seventy-five elite interviews were conducted, stakeholders who have had and continue to have direct involvement in these large projects and therefore have a very personal perspective on the institutional frameworks. This in effect is a collaborative exercise to discover the perspectives of the institutional governance from those most impacted.

The narrative to emerge is that the institutional frameworks are in a state of inertia. They are failing to adapt due to a number of institutional factors. Change is costly, and politically and organisationally not prioritised. The frameworks 'stick' to a path historically implemented. Governance is imposing structure over agency. Leadership in governance is failing to collaborate. Finally, there is a culture of forgetting, from one project to the next. All have public policy implications.

There is a perception that the inertia will continue. Therefore, the dominant perspective was to reduce the complexity. Stop undertaking large projects as traditionally planned, where a

‘superhuman’ capability is required, break them down into a series of smaller component-based projects. Actors with agency and entrepreneurial skills have done so successfully. However, they succeeded by circumventing the institutional frameworks to address their weaknesses. These entrepreneurs are also rare.

To address the rather sad perspective that nothing much is likely to change, and that success will remain dependent upon chance, a more practical proposal was identified. Undertake a brutal independent assessment at the initiation stage of the likelihood of the project to deliver as planned. The assumption is that given the likelihood is you will have poor outcomes, that the forecast is just a guess, the agency/project need to explain how they will address this. If you have planned as a single large project, you cannot start. If you do not have a skilled, trained, and committed sponsor you cannot start. If you do not have the project management capability and capacity required, you cannot start. The logic is simple, if you do not have the ability to enable successful delivery, it is better to stop the project at the initiation stage and work on a revised plan until you determine how you can. Project funding also needs to change to support this approach, to be iterative and progressive based on results, delivery, and revised forecasts for the next stage.

In effect an acknowledgement that if there is difficulty in changing the capacity to govern, change the nature of what is to be governed.

Table of Contents

Declaration	i
Acknowledgements	iii
Abstract	v
Table of Contents	vii
List of Figures	xv
List of Tables	xvii
List of acronyms and abbreviations	xix
Glossary and Terms	xxi
Chapter 1: Introduction	1
1.1 The puzzle and the research questions.....	2
1.2 Background.....	4
1.3 Research scope.....	7
1.3.1 Why the focus on Australian and New Zealand public sectors?	7
1.3.2 Why the focus on large government ICT software projects?	8
1.3.2.1 Size (large ICT)	8
1.3.2.2 Government	8
1.3.2.3 ICT software projects	8
1.3.2.4 Why the focus on sponsor, project management, and forecasting roles/disciplines?	9
1.4 Significance.....	10
1.5 Thesis structure	12
Chapter 2: Literature review	15
2.1 Introduction.....	15
2.2 Sponsor	15
2.3 Project management.....	22
2.4 Forecasting.....	31
Chapter 3: Theoretical framework	37
3.1 Introduction.....	37
3.2 The theoretical framework.....	37
3.3 Linking governance to theory	38

3.4	Institutionalism (new)	40
3.4.1	<i>Institutions and their research via institutionalism</i>	40
3.4.2	<i>A multi-theoretic approach</i>	44
3.4.3	<i>Institutional framework</i>	45
3.5	Theoretical concepts	47
3.6	Conclusion	51
Chapter 4: Research design.....		53
4.1	Introduction.....	53
4.2	Methodology	53
4.3	Research roadmap	57
4.4	Qualitative data collection methods.....	58
4.4.1	<i>Triangulation of data</i>	58
4.4.2	<i>Elite interviews</i>	59
4.4.2.1	Participant identification.....	59
4.4.2.2	Interview questions.....	60
4.4.2.3	Interview transcripts	61
4.4.3	<i>Case studies</i>	62
4.4.3.1	Why the use of case studies and a comparative approach?	62
4.4.3.2	Case study selection (and the comparative approach).....	63
4.4.3.3	Case Study 1: Novopay	65
4.4.3.4	Case study 2: The Education Payroll Development Program (EPDP)	68
4.4.4	<i>Documents</i>	71
4.5	Qualitative data analysis methods.....	72
4.5.1	<i>Thematic analysis (interview data)</i>	72
4.5.2	<i>Thematic analysis (documents)</i>	76
4.6	Ethics and limitations.....	76
4.6.1	<i>Ethics</i>	76
4.6.2	<i>Limitations</i>	77
Chapter 5: Sponsor – the career limiting role		79
5.1	Introduction.....	79
5.2	The elite interviews.....	80
5.2.1	<i>Capability: is the maturity there, and how it is being assessed?</i>	80
5.2.2	<i>Role: how institutionalised are the responsibilities and accountabilities?</i>	85
5.2.3	<i>Model: how are sponsors selected and appointed?</i>	88
5.2.4	<i>Training and support: what sponsor training and support is provided?</i>	92

5.2.4.1	Training	92
5.2.4.2	Support.....	95
5.3	The findings and their relationship to the theoretical concepts	97
5.3.1	<i>Capability and capacity building</i>	97
5.3.2	<i>Leadership</i>	99
5.3.3	<i>Accountability</i>	99
5.3.4	<i>Stakeholder management</i>	99
5.3.5	<i>Organisational learning</i>	100
5.3.6	<i>Methodologies</i>	100
5.3.7	<i>Entrepreneurship</i>	100
5.3.8	<i>Agency</i>	101
5.4	Conclusion	104
Chapter 6: Project management – superhumans required		107
6.1	Introduction.....	107
6.2	The elite interviews.....	108
6.2.1	<i>Capability: is the maturity there and how is it assessed?</i>	108
6.2.2	<i>Organisational priority: what importance is project management given in the organisation?</i>	112
6.2.3	<i>Methodology: what role do methodologies play in maturity?</i>	119
6.2.4	<i>Large projects: how have organisations addressed project management capability for large ICT software projects?</i>	120
6.3	The findings and their relationship to the theoretical concepts	128
6.3.1	<i>Capability and capacity building</i>	128
6.3.2	<i>Leadership</i>	129
6.3.3	<i>Methodologies</i>	130
6.3.4	<i>Entrepreneurship</i>	130
6.3.5	<i>Agency</i>	131
6.4	Conclusion	131
Chapter 7: Forecasting – a ridiculous nonsense of a process!.....		135
7.1	Introduction.....	135
7.2	The elite interviews.....	136
7.2.1	<i>Capability: is the maturity there and how is it assessed?</i>	136
7.2.2	<i>Forecasting framework: how appropriate are the institutional frameworks for preparing forecasts?</i>	140
7.2.2.1	The forecasting requirement: compliance by gaming	140

7.2.2.2	Methods of forecasting: muddling through	143
7.2.2.3	Collaboration: reluctance to consult	145
7.2.2.4	Outside view: looking for comparisons	146
7.2.2.5	‘Lessons Learned’ reports: ticking the box	147
7.2.2.6	Customisation: additional costs now and ever after	150
7.2.2.7	Problems with assuring forecasts of large projects	152
7.2.3	<i>Organisational factors: are organisational factors considered at planning? ...</i>	<i>154</i>
7.2.3.1	Are they considered and why not?	154
7.2.3.2	The political factor: it is unpredictable	156
7.2.3.3	Jurisdictional size and location: small is beautiful but often impractical ...	157
7.2.4	<i>Financial management: how does organisational financial management capability influence forecasting?</i>	<i>159</i>
7.2.4.1	Suitability of financial management practices: fit for purpose?	159
7.2.4.2	Alternative financial management approaches: iterative funding	162
7.2.4.3	Seeing ICT solutions as assets and managing them accordingly	164
7.2.5	<i>Large project dilemmas: should they be avoided, can they, and what alternatives are there?</i>	<i>168</i>
7.2.5.1	Agile delivery	169
7.3	The findings and their relationship to the theoretical concepts	172
7.3.1	<i>Capability and capacity building</i>	<i>172</i>
7.3.2	<i>Financial management</i>	<i>173</i>
7.3.3	<i>Contract management</i>	<i>174</i>
7.3.4	<i>Organisational learning</i>	<i>174</i>
7.3.5	<i>Leadership</i>	<i>174</i>
7.3.6	<i>Entrepreneurship</i>	<i>175</i>
7.3.7	<i>Agency</i>	<i>175</i>
7.4	Conclusion	179
Chapter 8: Novopay case study – alone and set-up to fail		183
8.1	Introduction	183
8.2	Sponsor	184
8.2.1	<i>Capability: was Jackson capable, and was she assessed prior to appointment?</i>	<i>184</i>
8.2.2	<i>Role: how aware was Jackson of her responsibilities and accountability?</i>	<i>185</i>
8.2.2.1	Responsibilities	185
8.2.2.2	Accountability	186
8.2.3	<i>Model: how was Jackson selected and appointed?</i>	<i>188</i>

8.2.4	<i>Training and support: what training and support was provided to Jackson?...</i>	189
8.2.5	<i>Sponsor conclusions</i>	190
8.3	<i>Project management</i>	191
8.3.1	<i>Capability: did the MoE have the maturity and was it assessed?</i>	191
8.3.2	<i>Organisational priority: what importance was project management given within the MoE?</i>	194
8.3.3	<i>Methodology: what role did methodologies play in improving MoE capability?</i> 195	
8.3.4	<i>Large projects: how did the MoE address project management capability for Novopay at the initiation and planning stage?</i>	196
8.3.4.1	The project's project management team.....	196
8.3.4.2	Vendor management.....	197
8.3.5	<i>Project management conclusions</i>	198
8.4	<i>Forecasting</i>	199
8.4.1	<i>Capability: was the maturity there and how was it assessed?</i>	199
8.4.2	<i>Forecasting framework: how appropriate was the institutional framework in preparing the forecast?</i>	200
8.4.2.1	The forecasting requirement.....	200
8.4.2.2	Contract management.....	201
8.4.2.3	Methods	203
8.4.2.4	Outside view	204
8.4.2.5	Lessons learned.....	204
8.4.2.6	Customisation	206
8.4.2.7	Problems with assuring forecasts	207
8.4.3	<i>Organisational factors: were organisational factors considered at planning?</i> . 208	
8.4.3.1	Schools.....	208
8.4.3.2	Datacom.....	210
8.4.3.3	The old solution.....	210
8.4.3.4	The political factor.....	211
8.4.3.5	Summary of organisational factors.....	211
8.4.4	<i>Financial management: how did organisational financial management capability influence Novopay forecasting?</i>	212
8.4.5	<i>Large projects: could Novopay have been avoided as a large project, and what alternatives were there?</i>	214
8.4.6	<i>Forecasting summary</i>	215
8.5	<i>Findings and relationship to the theoretical concepts</i>	216
8.5.1	<i>Capability and capacity building</i>	216

8.5.2	<i>Financial management</i>	217
8.5.3	<i>Contract management</i>	217
8.5.4	<i>Stakeholder management</i>	217
8.5.5	<i>Methodologies</i>	218
8.5.6	<i>Accountability</i>	218
8.5.7	<i>Organisational learning</i>	218
8.5.8	<i>Leadership</i>	220
8.5.9	<i>Entrepreneurship</i>	220
8.5.10	<i>Agency</i>	221
8.6	<i>Conclusion</i>	221
Chapter 9: EPDP case study – doing things differently		223
9.1	<i>Introduction</i>	223
9.2	<i>Sponsor</i>	224
9.2.1	<i>Capability: was White capable, and was she assessed prior to appointment?..</i>	225
9.2.2	<i>Role: how aware was White of her responsibilities and accountability?</i>	227
9.2.3	<i>Model: how was White selected and appointed?</i>	228
9.2.4	<i>Training and support: what training and support was provided to White?.....</i>	230
9.2.5	<i>Sponsor conclusions</i>	231
9.3	<i>Project management</i>	232
9.3.1	<i>Capability: did the EPL have the maturity and was it assessed?</i>	232
9.3.2	<i>Organisational priority: what importance was project management given within the EPL?</i>	234
9.3.3	<i>Methodology: what role did methodologies play in improving Ministry of Education (MoE) capability?</i>	235
9.3.4	<i>Large projects: how did the EPL address project management capability for EPDP at the initiation and planning stage?.....</i>	237
9.3.4.1	<i>The program’s project management team</i>	237
9.3.4.2	<i>Stakeholder engagement</i>	239
9.3.4.3	<i>Learnings from the project</i>	242
9.3.5	<i>Project management conclusions</i>	243
9.4	<i>Forecasting</i>	244
9.4.1	<i>Capability: was the maturity there and how was it assessed?.....</i>	244
9.4.2	<i>Forecasting framework: how appropriate was the institutional framework in preparing the forecast?</i>	245
9.4.2.1	<i>The forecasting requirement</i>	245
9.4.2.2	<i>Methods</i>	247

9.4.2.3	Contract management	250
9.4.2.4	Novopay learnings	250
9.4.2.5	Customisation	253
9.4.2.6	Problems with assuring forecasts	254
9.4.3	<i>Organisational factors: were organisational factors considered at planning?.</i>	258
9.4.4	<i>Financial management: how did organisational financial management capability influence EPDP forecasting?</i>	259
9.4.4.1	Suitability of financial management practices.....	259
9.4.5	<i>Large projects: could Agile be applied to all large projects?</i>	260
9.4.6	<i>Forecasting conclusions.....</i>	261
9.5	Findings and relationship to the theoretical concepts	262
9.5.1	<i>Capability and capacity building</i>	262
9.5.2	<i>Financial management.....</i>	262
9.5.3	<i>Contract management</i>	263
9.5.4	<i>Stakeholder management</i>	263
9.5.5	<i>Methodologies</i>	264
9.5.6	<i>Accountability.....</i>	264
9.5.7	<i>Organisational learning.....</i>	264
9.5.8	<i>Leadership.....</i>	266
9.5.9	<i>Entrepreneurship.....</i>	266
9.5.10	<i>Agency.....</i>	266
9.6	Conclusion	267
Chapter 10: Findings		269
10.1	Introduction	269
10.2	The narrative.....	270
10.3	Case study findings and comparison	272
10.4	Theoretical implications	280
10.5	Policy implications	288
10.6	Practical implications	293
10.7	Conclusion.....	296
10.8	Research limitations and problems.....	296
10.9	Potential for further research	297
10.10	Autobiographical reflection.....	299
Chapter 11: References.....		301

Appendix A:	Stage 1 interviewee data.....	349
Appendix B:	Novopay interviewee data.....	353
Appendix C:	EPDP interviewee data.....	355
Appendix D:	Interview questions.....	357
Appendix E:	Comparison of Novopay findings to Stage 1 findings	361
Appendix F:	Comparison of Novopay findings to EPDP findings	365

List of Figures

Figure 1-i: The roles/disciplines in a large project that provide the research focus.....	10
Figure 2-i: The sponsor role and interrelationship	19
Figure 2-ii: The organisational project management model	23
Figure 2-iii: Complexity and project delivery methods	30
Figure 3-i: The theoretical framework	38
Figure 3-ii: The dilemma for leadership between old and new governance	39
Figure 3-iii: How the institutional framework influences large ICT software projects	47
Figure 4-i: Methodological model.....	54
Figure 4-ii: Deductive approach.....	55
Figure 4-iii: Research roadmap	57
Figure 4-iv: Triangulation of methods	58
Figure 4-v: Aligning questions to theoretical concepts.....	61
Figure 4-vi: Case study comparative relationship.....	64
Figure 4-vii: The schools' payroll and the EPL	69
Figure 4-viii: Thematic analysis hierarchy.....	73
Figure 4-ix: Example of thematic coding.....	74
Figure 4-x: Example of coding in NVivo.....	75
Figure 5-i: Categories for sponsor analysis.....	80
Figure 6-i: Categories for project management governance	108
Figure 7-i: Categories for forecasting analysis	136
Figure 9-i: The changing EPL/EPDP resource model	238
Figure 9-ii: Simplified variances in forecasting approaches	263

List of Tables

Table 2-1: Conventional versus adaptive project management	28
Table 2-2: Example of forecasting influenced by direct interest in a transport agency	33
Table 3-1: New institutionalism – the four new institutionalisms	44
Table 3-2: Application of the multi-theoretical approach	45
Table 3-3: The theoretical concepts and why they are relevant	48
Table 4-1: Summary of elite interview participants	60
Table 4-2: Novopay timeline.....	67
Table 4-3: EPDP timeline	71
Table 5-1: Comparison of literature review and findings	105
Table 6-1: Comparison of literature review and findings	132
Table 7-1: Comparison of New Zealand lessons learned over 17 years	148
Table 7-2: Comparison of literature review and findings	181
Table 8-1: Comparison of INCIS and Novopay planning and forecasting	206
Table 8-2: Comparison of ‘Dangerous Enthusiasms’ lessons with Novopay	219
Table 9-1: Comparison of ‘Dangerous Enthusiasms’ lessons with EPDP	265
Table 10-1: Comparison of theoretical concept findings	274
Table 10-2: Novopay assessment against the spectrum	278
Table 10-3: EPDP assessment against the spectrum	279
Table 10-4: Policy implications for the factors of institutional inertia	288

List of acronyms and abbreviations

Abbreviation	Detail
ACT	Australian Capital Territory
AIPM	Australian Institute of Project Management
ANU	The Australian National University
ANZSOG	The Australia and New Zealand School of Government
APS	Australian Public Service (Australian Government)
ATO	Australian Taxation Office
b	Billion
CE	Chief Executive
CEO	Chief Executive Officer
CIO	Chief Information Officer
DoE	NSW Department of Education
DTA	Digital Transformation Agency (Australian Government)
E	Electronic
EPDP	Education Payroll Development Program (Education Payroll Limited, New Zealand)
EPL	Education Payroll Limited (NZ Government)
ERP	Enterprise Resource Planning
HRMIS	Human Resource Management Information System
IBM	International Business Machines Corporation
ICT	Information and Communication Technology
INCIS	Integrated National Crime Investigation Systems
IQA	Independent Quality Advisor
ISD	Information Systems Development
IT	Information Technology
ITD	Information Technology Directorate (NSW Department of Education)
LMBR	Learning Management and Business Reform Program (NSW Department of Education)
m	Million
MoE	Ministry of Education (New Zealand)
MSP	Managing Successful Programmes
NASA	The National Aeronautics and Space Administration
NPM	New Public Management
NSW	New South Wales

Abbreviation	Detail
NT	Northern Territory
NZ	New Zealand
OECD	Organisation for Economic Co-operation and Development
PBO	Project-Based Organisation
PhD	Doctor of Philosophy
PIS	Participant Information Sheet
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PMO	Project Management Office
PwC	Price Waterhouse Coopers
Qld	Queensland
RCF	Reference Class Forecasting
SA	South Australia
SAP	Systems Applications and Products in Data Processing (English), and/or Systeme, Anwendungen, Produkte in der Datenverarbeitung (German)
Snr	Senior
SRO	Senior Responsible Officer
Tas	Tasmania
UK	United Kingdom
US	United States of America
Vic	Victoria
WA	Western Australia

Glossary and Terms

Term	Detail
Enterprise Resource Planning (ERP)	<p>‘Enterprise Resource Planning (ERP) is the integrated management of core business processes, often in real-time and mediated by software and technology.</p> <p>ERP is usually referred to as a category of business-management software — typically a suite of integrated applications—that an organisation can use to collect, store, manage, and interpret data from these many business activities.</p> <p>ERP provides an integrated and continuously updated view of core business processes using common databases maintained by a database management system. ERP systems track business resources—cash, raw materials, production capacity—and the status of business commitments: orders, purchase orders, and payroll. The applications that make up the system share data across various departments (manufacturing, purchasing, sales, accounting, etc.) that provide the data. ERP facilitates information flow between all business functions and manages connections to outside stakeholders.’</p> <p>Wikipedia, viewed 2 October 2018, https://en.wikipedia.org/wiki/Enterprise_resource_planning</p>
Integrated National Crime Investigation System (INCIS)	<p>The National Crime Investigation System is a New Zealand Police Force ICT software project to implement a new integrated national crime database.</p>
Managing Successful Programmes (MSP)	<p>‘Managing Successful Programmes represents proven programme management good practice in the successful delivery of transformational change through the application of programme management.</p> <p>MSP has been adopted by many organisations within both the public and private sectors. The core publication, ‘Managing Successful Programmes’, has drawn on the experiences of those who have adopted programme management.’ – Axelos Global Best Practice, viewed 2 October 2018, https://www.axelos.com/best-practice-solutions/msp</p>
NVivo	<p>NVivo is software provided by QRS International. It is used to store research documents and video/audio files and to classify, code and report. It was used extensively during the research to code and retrieve data.</p>
Participant Information Sheet (PIS)	<p>An information sheet provided by the researcher to the interview participants to explain the project, why they are being selected to participate and all ethical, risk and confidentiality issues. Contact details and escalation points are also provided.</p>

Term	Detail
PRINCE2	<p>‘PRINCE2 (an acronym for PRojects IN Controlled Environments) is a de facto process-based method for effective project management. Used extensively by the UK Government, PRINCE2 is also widely recognised and used in the private sector, both in the UK and internationally. The PRINCE2 method is in the public domain and offers non-proprietary best practice guidance on project management.’</p> <p>- PRINCE2, viewed 18 September 2018, https://www.prince2.com/aus/what-is-prince2</p> <p>NB: PRINCE2 is used widely across the Australian and New Zealand government sectors.</p>
Project Management Body of Knowledge (PMBOK)	<p>The Project Management Body Of Knowledge is a set of standard terminology and guidelines (a body of knowledge) for project management. The body of knowledge evolves over time and is presented in A Guide to the Project Management Body of Knowledge (the Guide to the PMBOK or the Guide), a book whose sixth edition was released in 2017. The Guide is a document resulting from work overseen by the Project Management Institute (PMI)’ – Wikipedia, viewed 18 September 2018, https://en.wikipedia.org/wiki/Project_Management_Body_of_Knowledge</p>
SAP	<p>‘SAP ERP is enterprise resource planning software developed by the German company SAP SE. SAP ERP incorporates the key business functions of an organization ...</p> <p>Business processes included in SAP ERP are Operations (Sales & Distribution, Materials Management, Production Planning, Logistics Execution, and Quality Management), Financials (Financial Accounting, Management Accounting and Financial Supply Chain Management), Human Capital Management (Training, Payroll, e-Recruiting) and Corporate Services (Travel Management, Environment, Health and Safety, and Real-Estate Management).’</p> <p>Wikipedia, viewed 2 October 2018, https://en.wikipedia.org/wiki/SAP_ERP</p>

Chapter 1: Introduction

'At the heart of my findings is a conclusion that, notwithstanding the work undertaken to-date, the current model of weak governance of ICT at a whole-of-government level ... leads to sub-optimal outcomes ...' (Gershon 2008, p. iii)¹

'[earlier reports] ... identified significant shortcomings in the public sector's management of such [ICT] projects and included numerous recommendations. Despite this, there has been little sign of lessons learnt and ICT projects such as myki, HealthSMART and LEAP, were regularly in the newspapers for the wrong reasons.' (Victorian Ombudsman 2012, p. 1)²

'The [negative] impacts of the well-publicised Novopay³ failures have reverberated across New Zealand. Every state and state-integrated school in the country has been affected ... it is clear to us that important lessons from the past ... should have been learned but were not.' (Jack & Wevers 2013, p. 1)

'Rarely has the need for change been demonstrated more clearly than through the failure of the Asset Management System project. To spend around \$70 million dollars only to make the system worse is clearly unacceptable ... [and] further demonstrates that action to improve the management of ICT projects is required to not only get better levels of service provision but also to avoid crippling waste.' (Public Accounts Committee 2014, p. 5)⁴

The above are all quotes from various reports into the poor outcomes of past large ICT software projects in the Australian and New Zealand public sectors. They either reference or allude to a failure in institutional governance, and a failure to adapt that governance as a result of past outcomes. However, despite these reports the literature indicates that these poor outcomes have continued, arguably reflecting ongoing governance challenges. This chapter will outline the puzzle, research questions, research scope, research significance, and lastly detail the chapter structure of this thesis.

¹ Resulting from a review of the Australian Government's use of Information and Communication Technology (ICT).

² A report on the Victorian Ombudsman's investigation of ICT-enabled projects in the Victorian public sector.

³ A large payroll project within the New Zealand Ministry of Education. This project is one of the case studies in a later chapter of this thesis and was subject to a Ministerial Inquiry.

⁴ A Northern Territory Government review into the management of ICT projects by government agencies.

1.1 The puzzle and the research questions

Within each jurisdiction across the Australian and New Zealand public sectors all large ICT software projects are subject to governance frameworks at the jurisdictional level. Whilst it has been argued that there is no universal definition of governance (Meuleman 2008, p. 9; Frederickson et al 2012, p. 224), a ‘minimalist’ definition is that governance ‘is the capacity to get things done and to have services delivered’ and likened to ‘steering a boat’ to achieve a desired outcome (Peters 2012). Governance is also defined as ‘patterns of rule’ such as the systems, institutions, and norms, by which organisations are directed and controlled (Bevir 2007, p. 365). Therefore, it is then argued that the ultimate goal of effective governance is to create the ‘conditions for ordered rule and collective action’ (Stoker 1998, p. 17).

Taking these definitions into account, for the purposes of this thesis, the institutionalised governance of large ICT software projects can be defined as the collective policies, rules, guidelines and so on that control the multi-level operation of these projects, and to provide strategies to build the required capability and capacity for these projects. This institutionalised governance is quite different to governance within a project. The institutional governance is all encompassing for every project, and a project is initiated, approved, and continues due to this governance. Within a particular project there will be ‘project governance’, such as a Project Board or Steering Committee, to steer the project through its course. That project governance requirement and method would be a guideline for all projects within the jurisdictional governance arrangements, for example the project must have a Project Board structure as per PRINCE2 guidelines and is not the focus of this thesis. This thesis is focussed on the governance that stipulates the use of PRINCE2 and other methods and guidelines within the project.

The puzzle is that despite these historically developed governance frameworks poor outcomes for large ICT software projects continue, and the same issues arise. Why? Is this an indication that the governance is ineffective, that it is failing to create those ‘conditions for ordered rule’? It is difficult to answer this question, for two reasons. Firstly, little research on the institutional governance of these projects across the joint Australian and New Zealand public sectors has been undertaken. Secondly, measuring governance effectiveness can be a tricky business.

Effective governance can be simply defined as ‘the extent that the actual performance matches the desired outcomes’ (Baekkeskow 2007, p. 258). Did you achieve what you set out to do? However how can governance effectiveness, be measured? It is not something that is readily quantifiable as obvious measures are few, and when governance is multi-level, this becomes even harder (Besancon 2003; Bevir 2007), or the measure may focus on one set of criteria to the exclusion of others (Baekkeskow 2007). To add to this dilemma, McConnell (2015) has argued that public policy has had difficulty coming to terms with outcome determination, and that disputes over whether a policy has actually ‘failed’ are commonplace, open to varying perceptions, and political point scoring (ibid, p. 222). These factors often lead to an ‘endless debate’ on the outcome (Bovens & ‘t Hart 1996; Baldry 1998). It is a minefield.

If a measure of effective governance for large ICT software projects was to be purely empirical and quantifiable, then a possible measure would be the traditional assessment of a project outcome. Actual outcomes are compared against the forecasted outcomes of time, cost, and scope (Chua 2009; Al-Ahmad et al 2009; Bolin 2012; Fabricius & Buttgen 2015; Hughes et al. 2016). A measure commonly known as the ‘triple constraint’ (Zwikael & Smyrk 2012, p. S7) or ‘the iron triangle’ (Budzier & Flyvbjerg 2011, p. 2). Did the governance framework enable the project to deliver to the forecast?

However, aligned to the earlier arguments on the dilemmas facing measurement of governance and public policy in general, measurement of a project’s outcome against this ‘iron triangle’ has received similar criticism (Standing et al. 2006; Goldfinch 2007; Thomas & Fernandez 2008; Stoica & Brouse 2013; Lehtinen et al. 2014; Fabricius & Buttgen 2015). It has been argued that whilst those factors are important parts of project control, they ‘should certainly not be confused with measuring success’ (De Wit 1988, p. 164). Projects can still be classified as successful even if time and costs are exceeded (Wateridge 1998; Thomas & Fernandez 2008) as the priority is to deliver a solution that effectively transforms how an organisation does business (Rothstein & Teorell 2008; Budzier & Flyvbjerg 2011). Therefore, for these reasons a quantifiable measure is argued to be an inappropriate means of measuring the effectiveness of governance for these large ICT software projects and would leave findings open to that ‘endless debate’.

Nonetheless, a measurement of governance is important, indeed critical for this thesis, as that is central to the puzzle and the resulting research questions. This thesis is interested in the perspectives of the key stakeholders, chosen experts (Besancon 2003) with proximity to

operational decisions, the actors in these projects who are expected to operate these projects within the jurisdictional governance framework. Do they perceive that the governance assists them in achieving the desired outcomes? From these stories a narrative will emerge, and this will be the measure.

To assess this ‘effectiveness’ there are two research questions. The first aims to address the ‘effectiveness’ puzzle. The second is related to a core concept of governance, and that is the need for a continual fine-tuning of the ‘fitness’ of the governance arrangements (Schneider 2012). It needs to adapt, evolve, based on learnings. This clearly should be the case with the governance arrangements of large ICT software projects. There is much past learning. Has this been happening and if not, why not?

The two research questions are:

Q1: What is the perceived effectiveness of governance in the Australian and New Zealand public sectors for large ICT software projects in achieving desired outcomes?

Q2: What, if any, are the perceived challenges with adapting governance for large ICT software projects in the Australian and New Zealand public sectors?

1.2 Background

In 2015 the Australian Government commissioned a report titled *Learning from Failure: Why large government policy initiatives have gone so badly wrong in the past and how chances of success in the future can be improved* (Shergold 2015) and was referenced as ‘an independent review of government processes for implementing large programs and projects, including the roles of the ministers and public servants’ (ibid, p. i). Whilst the Shergold report is not specifically about large government ICT software projects its findings are applicable, and they largely centre around improving good government through the governance of these projects, a principle founded on ‘good policy’ (ibid, p. iii). In short, the report proposed developing governance to support robust decision making, enhancing the project management discipline, improving collaboration, and embracing adaptive government and governance (ibid, pp. iii-xi). The proposal to adapt is referenced in the title of the report, as it found weaknesses in governance and is making recommendations to learn from those.

However, the problem is many of the findings in the Shergold report can be found in many other reports, within and external to the APS. They are neither new nor unique. For example,

there had been an earlier Australian Government report titled a *Review of the Australian Government's use of Information and Communication Technology* (Gershon 2008) which also concluded that governance was weak and was contributing to poor outcomes. It also acknowledges the need to adapt by recommending the establishment of a process for developing whole-of-government ICT policies, and the overall ICT strategic visions, so that it supports 'the achievement of the Government's outcomes and wider policy agenda' (Gershon 2008, p. 3). Rather disturbingly though, via document review and the elite interviews there was no evidence identified that anything concrete has eventuated as a result of either the Shergold or Gershon reports.

Of course, this is not restricted just to the APS. There have also been a multitude of other reports produced within Australia and New Zealand, and internationally into why large government ICT projects have failed to meet expectations, and then making recommendations on adaptations to improve outcomes. In the Northern Territory there was the *Management of ICT Projects by Government Agencies* (Public Accounts Committee 2014) prepared after a series of poor project outcomes. The New Zealand Customs Service commissioned Deloitte to undertake a 'lesson learned' report into the troubled *Joint Border Management System* (Deloitte 2017). The Victorian Ombudsman presented a report titled *Own motion investigation into ICT-enabled projects* (Victorian Ombudsman 2011) following an investigation into a series of troubled projects in that sector. These reports and others all have similar findings, such as the need to improve the project management disciplines in the sector. The Victorian Ombudsman's report, similar to the earlier comment on the Gershon report's recommendation, found that the Victorian Government had failed to learn from past mistakes and adapt governance accordingly (Victorian Ombudsman 2011). In each of the 2011, 2013 and 2017 annual *Lessons Learned Report* produced by the New Zealand Gateway Review teams assessing projects across the sector, factors such as the jurisdictional addressing of capability in key project areas was identified as an issue, in fact it just seems to recur in each report (State Services Commission 2011; State Services Commission 2013; The Treasury 2017).

Several observations can be made from these reports. Whilst they acknowledge governance failures, and make recommendations to 'improve governance', for example improve project management capability, they do not measure governance effectiveness, nor do they take a collaborative approach in identifying governance effectiveness or opportunities for

adaptation. They generally identify the cause of a problem, such as the lack of project management capability, and recommended that this be addressed. It is argued what they fail to address are the underlying institutional challenges that have meant these governance issues have existed over an extended period of time.

The reports have also been prepared after the event, generally take an audit-like approach, and then hand down findings. They can then fall victim to being ‘a tick in a box’, a reaction to a crisis, and then not followed through. For example, in media coverage of a 2017 parliamentary inquiry (Senate Standing Committees on Finance and Public Administration 2017a) into the digital delivery of APS services it was reported that the status of the 2008 Gershon recommendations remains unclear in 2017 (Se Eun 2018). When questioned by the committee regarding progress, it was stated that agencies did not collect such data. In addition, the Chief Digital Officer of the APS’s Digital Transformation Agency (DTA), was quoted as stating that whilst the Gershon report was important the ‘world has moved on’. The DTA also admitted that issues in ICT governance would be ongoing, and many of the recommendations made by Gershon may never be fixed (Se Eun 2018).

This thesis seeks to address these issues by attempting to measure governance effectiveness and to also identify what, if any, institutional challenges exist that impede governance adaptation. This will also be undertaken in a collaborative manner by engaging with stakeholders who are impacted by the governance framework.

In conclusion, the following quote from an APS elite interviewee, in reference to a question about the Gershon report and if they were consulted, indicates a consequence of not collaborating, and then handing down recommendations:

‘... Finance, the central agency, here is a pattern for you, same with the DTA. They had these propeller heads, up there in the clouds, and know it all. Well, they do not bring in people that have runs on the board that are practical, pragmatic with big service delivery systems. You have got to build a relationship, it is not 'oh I am smarter than you and I can do this' and move over. It is not like that. How? How can I work with you? Because I need to learn about what you are doing and why. What is your context? I will share my story and then jointly we will work out the how. So, you have got a mix of people in AGIMO⁵ that are away with the pixies, had no respect in

⁵ Australian Government Information Management Office (AGIMO)

operational agencies. They never come out and talk to you, never tried to learn about what you did. That Gershon, that was a money grab.’ (Person AB, Snr Project Officer, APS).

1.3 Research scope

The research will focus on the institutional governance in the **Australian and New Zealand** public sectors of **large government ICT software projects**. The research will also focus on three roles/disciplines where capability is argued to be critical in the operation of these projects, namely, the **sponsor** role, the **project management** roles and discipline, and the **forecasting** discipline. The research also focusses on the people and process aspects of governance, not on the technical. This is because an organisation needs effective and capable people and processes to implement and use, indeed even decide on the technical (Bhargav et al 2008). Governance frameworks also arguably concentrate on the people and process aspects.

1.3.1 Why the focus on Australian and New Zealand public sectors?

There is a gap in research on the governance of large ICT software projects across the Australian and New Zealand sectors. Whilst there have been major reports commissioned by various governments, such as the *Review of the Australian Government’s use of Information and Communication Technology* (Gershon 2008), these have been jurisdictionally based or related to a specific project, and arguably focus more on project related issues than overall effectiveness of the institutional framework for governance. Academic research, such as research into public sector governance of project management (Crawford & Helm 2009), has also arguably been narrower in scope. Whilst some of this research has been cited in the literature review, none could be identified that focussed on the institutional governance of these large projects across the two sectors.

The historical, political, and governmental similarities between the Australian and New Zealand public sectors also make them suitable for combined research. Both have stable government and society. Both were British colonies and transplanted the Westminster System. They also share common enacted institutional specifics such as being a parliamentary democracy and having a professional public service (Kumarasingham & Power 2015). One final argument for a focus on Australia and New Zealand is that due to their joint geographic isolation, and similarities in size of some jurisdictions, they may well be experiencing similar challenges in the governance of these large ICT software projects. Potentially this may lead to

possibilities for synergies between the two countries and across jurisdictions, such as currently exists in organisations such as the *Australia and New Zealand School of Government* which aims to jointly ‘enhance the capability of public servants’ (ANZSOG 2018, p. 6) across the two countries.

1.3.2 Why the focus on large government ICT software projects?

1.3.2.1 Size (large ICT)

There is a long and consistent history globally of ‘failed’ large ICT software projects across all sectors and industries, and the evidence indicates that the larger the project the worse the outcome. The Standish Group report (Goldfinch 2007, p. 917) found in the US, ICT software project success was at 55% for projects under US\$750k, but for those with budgets exceeding US\$10m the success rate was zero. In a later report (The Standish Group 2015, p. 3) the success rate for large projects had moved to a hardly acceptable 2%. These studies assessed outcomes as a comparison between the actual, and the planned time, cost, and scope of the project. Failure in these large projects, as measured against these criteria, is almost habitual. Large projects for the purposes of this thesis are defined as those having a budget in excess of A\$10m.

1.3.2.2 Government

Whilst large government ICT software projects share many commonalities with private sector projects, such as project management techniques, there are distinct environmental and institutional issues that differentiate them and make them more complex and therefore worthy as a specific area of research. These include their political environment, and the susceptibility and uncertainty this can bring to long-term projects. Government projects can have numerous stakeholders with competing expectations. Government projects also have mostly intangible goals, and unlike the private sector are not driven primarily by financial benefits (Campbell et al. 2009; Kwak et al 2014; Shergold 2015).

1.3.2.3 ICT software projects

Information and Communication Technology (**ICT**) is defined as all aspects of a technology solution, from the software, to hardware, to the communications devices and services utilised to plan and implement solutions (Beckinsale & Ram 2006, p. 848; Cardona et al. 2013, p. 110; British Computer Society 2013; Queensland Government Chief Information Office

2019) that deliver and transform the operations of government (Department of Finance and Deregulation 2012, p. 4). **Software** is the application that supports business processes, and the means of interfacing with users and the driver for a project, such as a new payroll solution. However, amongst other dependencies, the software needs to reside on hardware, and be delivered over communication devices, hence the need to include all aspects of ICT into the definition.

A **project** is defined by the Project Management Institute (PMI 2013a, p. 1) as a ‘temporary endeavour’ to create a product with a distinct beginning and end.

ICT software projects have certain characteristics that differentiate them from other projects, make them more complex, and increase their likelihood of producing poor outcomes. These include factors such as over ambition, unrealistic expectations of technology, hidden complexity, and uncertainty of requirements particularly when related to business requirements (Al-Ahmad et al. 2009, p. 93). A detailed report by the Royal Academy of Engineering and The British Computer Society (2013) into the challenges of large ICT software projects detailed some of the differences between ICT software and typical engineering projects. Engineering projects are restricted by physics and materials, ICT software projects are not and therefore there is a perception they can do anything, but they cannot. This creates issues with visualising the product and getting super enthusiastic about dreamt of possibilities. Like engineering projects, it is possible for an ICT software project to produce a product, but the problem in ICT is getting a common expectation of what is to be produced and for what need (ibid).

In summary, whilst all projects are susceptible to poor outcomes — as regardless of project type, large innovative projects add risk — it is argued that the complexities, intangibility, and often ambiguities of a large government ICT software project increase the likelihood of poor outcomes.

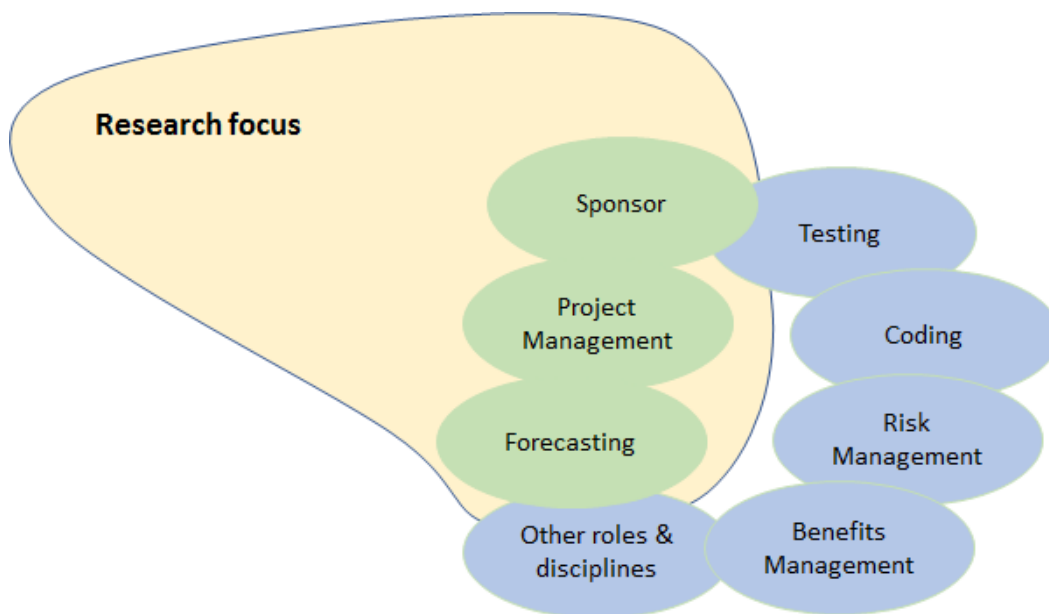
1.3.2.4 Why the focus on sponsor, project management, and forecasting roles/disciplines?

Literature highlights that there are many roles and disciplines required for a large ICT software projects and that each and every one can impact on a project’s outcome, and they can often work in ‘conflicting and complex ways’ (Remler & Van Ryzin 2011, p. 26). It is not

feasible, nor necessary, to undertake research on each and every one in this thesis. Therefore, a specific focus is required (see Figure 1-i).

The research will focus on three roles/disciplines that are argued to be critical for good project outcomes: the sponsor role, the project management roles/disciplines, and the forecasting discipline. Whilst this is discussed in more detail in Chapter 4 (Research Design), a research focus on the how these three critical roles/disciplines are governed will provide a comprehensive and relevant analysis. If any of these are governed poorly, then poor outcomes are all but assured. These three roles/disciplines are the subject of the literature review (Chapter 2) where they are defined, and their importance discussed.

Figure 1-i: The roles/disciplines in a large project that provide the research focus



1.4 Significance

This research is significant for a number of reasons. Firstly, it addresses a current gap in literature, and does so by uniquely analysing the effectiveness of governance for large ICT software projects from the perspectives of a large number of elite interviewees who have been participants in these projects and have therefore been impacted by the governance. Their

views, their story, and the resulting narrative will be unique and relevant. From these perceptions a group ‘reality’ of governance will be identified and documented.

Secondly, to add to the uniqueness the research focusses on the institutions of governance for these projects. Whereas much existing research has focussed on procedural issues, this research is concerned with the overarching governance framework for these projects and applying a measure to it. This measurement is important for governments in adapting governance, and for long and short-term policy developments (Besancon 2003).

Thirdly, to add to the relevance and potential use for adapting governance, it was quite common in the elite interviews for the participants to state that the reason for their participation was in the hope that it indeed would drive change. This is the essence of new or good governance; collaboration, and adaptation based on this. This thesis provides that data. As examples the following two quotes are proffered:

‘... we cannot say enough that things like this help the public sectors on both sides of the ditch. Obviously for me as a current public servant, I think you have to give back. And if we all believe that we can do things better and different and save taxpayer money to deliver other programs, then it is incumbent upon us to do it. So, whatever you publish, I hope public sector agencies pick it up and say, yeah; we can learn from these lessons, and let us do it better and save taxpayer dollars. (Arlene White, Chief Executive, Education Payroll Limited, New Zealand Government)

‘My final comment would be, I started out as an analyst programmer in 1980 at <company>, projects were failing in those days for exactly the same reason that they are now. Poorly defined requirements, scope creep, not the right people and poor project management. Nothing has changed in 40 years. If what you do adds value to one sponsor on a large government project in Australia or New Zealand, then it has been of benefit.’ (Person C, Snr IQA)

Lastly, and aligned to the above, any adaptation in governance to improve project outcomes has the potential to result in better financial outcomes. In government, when large ICT software projects have poor outcomes there can be severe negative impacts on the use of taxpayer funds. The UK National Health E-Records System spent over UK£12b before being totally scrapped (Martin 2011), a truly gobsmacking waste of public money. In Canada, a new government payroll system has been scrapped after spending CAD\$1.6b (May 2019; Marrs 2019). Within the Australian and New Zealand public sectors, the focus of this thesis, there

are also examples. The New Zealand Police's INCIS⁶ project with a budget of NZ\$100m, never became operational (Gauld & Goldfinch 2006, pp. 83-98). The NSW Department of Education's LMBR⁷ program was completed in 2018, four years late, and AUS\$265m over original forecasts (Hendry 2018). In the Australian Public Service alone, the value of current ICT projects in 2017/18 was estimated to be AUS\$7.76b (DTA 2018b, p. v). Any research that could assist in improving outcomes and saving financial waste, even very marginally, given this level of investment is significant.

1.5 Thesis structure

Chapter 2 reviews literature on the three project roles/disciplines that provide the focus for the research. Literature on the importance and development of these is discussed. In addition, reference is made to various documents within the Australian and New Zealand public sectors that provide for the governance of these roles/disciplines in large ICT software projects. This will assist in providing a comparison between literature and the institutional frameworks.

Chapter 3 outlines and justifies the theoretical framework that provides the theoretical 'structure' utilised in this thesis to answer the research question. The research is situated within the theory and concepts of new institutionalism.

Chapter 4 details the research design to be utilised to capture and analyse the research data. It seeks to answer the research question from the stories of a number of elite interviewees. Therefore, the research design takes a qualitative, interpretivist, inductive approach.

Chapters 5 to 7 document and analyse the data from a number of elite interviews for each of the three project roles/disciplines, namely sponsor, project management, and forecasting. For each a narrative emerges and findings against each of the theoretical concepts detailed.

Chapters 8 and 9 are case studies of two specific large ICT software projects, similar in product and target stakeholder group, but different in outcomes. The chapters undertake a detailed analysis of the projects using the same format as that utilised in Chapters 5 to 7, except the findings of this chapter relate specifically to the case study project.

⁶ Integrated National Crime Information System (INCIS)

⁷ Learning Management and Business Reform (LMBR)

Finally, **Chapter 10** details the overall findings. The overall narrative that has emerged is detailed. A comparison between the findings from Chapters 5 to 7, and those of the two case studies is then undertaken. Theoretical, policy, and practical implications are highlighted, and a conclusion is then made, including answering the research questions. The chapter also details opportunities for further research.

Chapter 2: Literature review

2.1 Introduction

The literature review discusses thematically each of the three large ICT software project focus roles/disciplines: the sponsor, project management, and forecasting. Each is defined, their scope and importance discussed, and current institutional governance of these within the Australian and New Zealand public sectors identified. Due to the nature of this thesis topic, the literature review is necessarily a mixture of scholarly, practitioner, and oversight of organisational perspectives.

2.2 Sponsor

The role of a project sponsor (sponsor) has not always been considered important in projects, or as part of project management. It has evolved and arisen historically, with project management. In the 1950s, it was typical for the project manager to have total responsibility for a project (Morris 1994; Stretton 1994). As projects became more institutionalised within organisations the term project ‘sponsor’ started to emerge in the 1980s, and the role was initially described as the project manager’s boss (Briner et al 1990). The role arose from a need to have an organisational actor responsible for the project on behalf of the organisation, and not abdicate that to the project manager (Kerzner & Kerzner 2013, pp. 464-466).

The United Kingdom’s Association for Project Management (APM) define the sponsor as being ‘accountable for ensuring that the work is governed effectively and delivers the objectives that meet identified needs’ (APM 2019a). The Project Management Institute (PMI 2013a, p. 32) defined the sponsor role as providing ‘resources and support for the project and is accountable for enabling success.’ The sponsor needs to be the ‘project champion, approve the business charter, business case owner, accountable throughout the lifespan of the project and prioritisation of the project within the organisation’ (Alie 2015, p. 6). These views are summarised by Crawford and Brett (2001, p. 2) who state that the sponsor is ‘responsible for the project on behalf of the organisation’. The sponsor can therefore be classified as the ‘project owner’ (Labuschagne et al 2006). Within the Australian and New Zealand public sectors, largely due to the use of the PRINCE2 project management methodology, the term ‘sponsor’ can also be known by titles such as *Project Executive* or *Senior Responsible Owner (SRO)*.

It has been argued that having an effective and capable sponsor is a critical project success factor (Bryde 2008, p. 801; Kloppenborg & Tesch 2015, p. 27). In their 2018 global review of the project management profession and projects, the PMI (2018, pp. 6-7) concluded that inadequate sponsor support was the number one cause of project failure, responsible for 41 per cent of all failures. As such, the PMI argue that this project support by the sponsor is 'priceless' as it bridges a gap between the organisational influencers and the project implementers, boosting collaboration and support, leading to increased project success. Given the increasing complexity of projects, the sponsor role and its business focus were argued to be even more critical (KPMG & AIPM 2018).

The role of a sponsor can be misunderstood and simplified as a result, whereas it is a complex and critical set of activities (Bryde 2008, p. 800). The sponsor role is not only multidimensional, but it also spans the entire project lifecycle (APM 2019b). This includes aligning the project with organisational strategy (PMI 2018), owning the business case, defining the business requirements and benefits, specifying the project priorities, defining success criteria, involvement in developing the project strategy and identification of objectives, specifying the success criteria, monitoring progress, tracking benefits realisation, and accepting the delivery of the project. It would also fall to the sponsor to either decide, or recommend upwards, to cancel a project (Briner et al 1990; Turner 1993; Morris 1994; Bryde 2008; APM 2019b). The sponsor is also responsible for securing the necessary financial and other resources (Crawford & Brett 2001; Helm & Remington 2005), ensuring proper project governance throughout, being the escalation point for and resolver of any conflict, and in addition to internal relationships, maintains relationships with external partners and suppliers. For a project implementing a new software solution the sponsor would also be responsible for driving organisational change (Labuschagne et al 2006). Quite a job, in fact arguably a superhero is needed, and therein arguably is one of the organisational challenges.

Others such as Kloppenborg and Tesch (2015, p. 29) argue that the role of the sponsor changes as the project moves through its lifecycle. At the initiation stage, key roles are setting goals and selecting the project manager. During planning they need to ensure effective planning and to start developing key stakeholder relationships. During project execution, keeping the communication flow open, and ensuring quality of the solution. In the final stage of the project, they need to capture lessons learned and benefits realisation.

If the project is to have every chance of success, it needs an effective sponsor in place for the duration. That means the sponsor needs to have organisation-wide credibility, be an effective change-advocate, and importantly be able to commit the time and skills to the role (APM 2019b). An OECD (2001, p. 4) policy brief argues that unless a single senior officer ‘has final responsibility and is held accountable for the success of a project, the project will most likely fail’. Their argument is that organisations need to take the sponsor role seriously, and it needs to be given organisational recognition, priority, and status. Review of public sector documentation, such as capability frameworks, does not indicate this is so. The perspectives of the elite interviewees will provide a unique view on this issue.

There is also some debate over the difference between the terms project sponsor and project ‘champion’. Some say they are often treated as one and the same (Crawford & Brett 2001; Helm & Remington 2005; Dalcher 2016; Zwikael & Meredith 2018), others treat them as separate roles with the sponsor being the project owner and the champion being the project advocate (Turner 1993), the one or ones who drive and sell the project within the organisation (Schibi, O & Lee, C 2015). Crawford and Brett (2001) posit that the best way to differentiate is that the sponsor is a formal role in the project, and there should only be one of these, whereas whilst the sponsor can and should also be a champion, a project can have many champions or advocates within the organisation for the change. In this thesis there is a mini-case study where the Australian Taxation Commissioner (see Box 5.1) took on both the champion and sponsor role. It was successful as the change was visibly driven from the top and enabled resources to be secured. The Novopay case study in this thesis is an example of a disconnected sponsor, one who was tapped on the shoulder and was not the champion of change. It finished badly. Arguably, the point is, regardless of whether the champion and sponsor are one and the same, that commitment to the change is a critical sponsor role.

The sponsor is supported in their role, by the project team itself, other organisational senior managers, and governance groups such as a Steering Committee. However, the sponsor remains the accountable officer for the project (APM 2019b; Alie 2015). That is key, as sponsors are not there to manage the day-to-day delivery of the project, for that they rely on the project manager/director (Kloppenborg & Tesch 2015, p. 27). This is a key project relationship. The sponsor needs to ensure that they provide the project manager and the project team with all the organisational support required to fulfil their roles (Bryde 2008, p. 801). Whilst a sponsor wants and needs a good project manager; it also works in the reverse.

It is critical for the project manager, and the success of the project, that they actively have the support and effectiveness of the most appropriate person within the organisation. The sponsor and project manager have an interrelationship and dependency, but it is also important that each be clear on their own role and not cross into each other's territory (Bryde 2008, p. 801), and neither should usurp the role of the other (Crawford & Brett 2001, p. 4). They should be compatible members of the project team (PMI 2012).

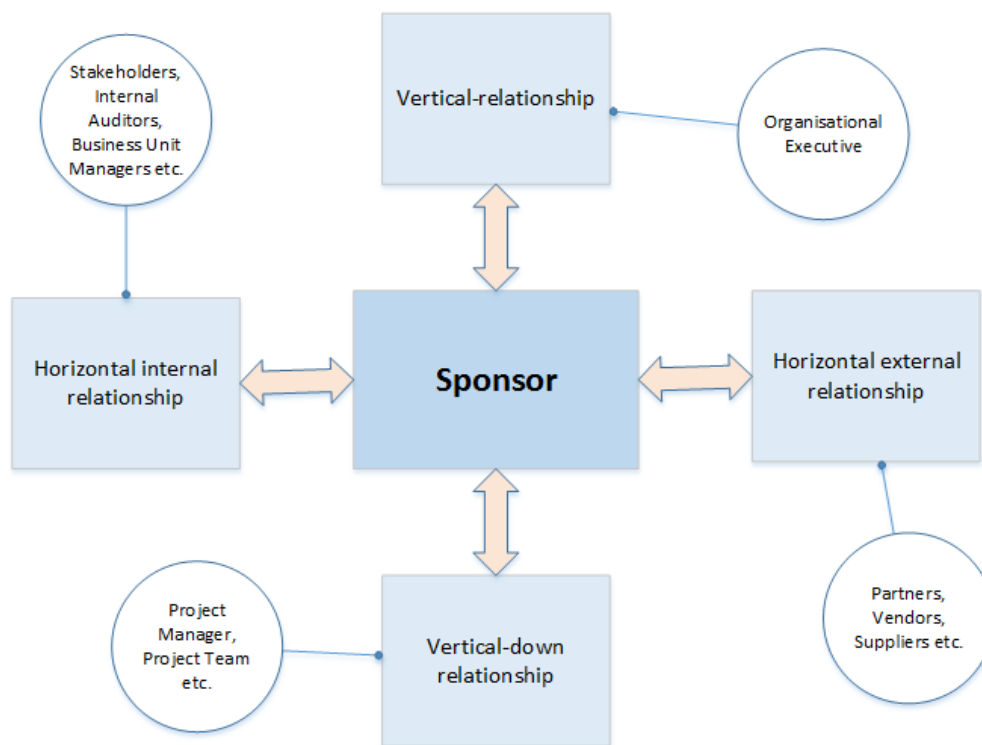
In a study of project manager perceptions of sponsors, Helm and Remington (2005, p. 57) found that where there was 'inadequate support at the executive sponsor level', then the project manager tended to mask this by 'using a complex range of tactics and behaviours' to deliver the project in spite of this executive ineffectiveness. These actions can therefore mask ineffective sponsorship, which is not organisationally beneficial, and could also lead to filtered communication by the project manager to the sponsor. These are further arguments for an effective sponsor, as they should be leading the change and making core organisational decisions, not the project manager. This exposes the project to risk of losing its business focus and becoming a delivery project instead. The multi-dimensional role of the sponsor and the various relationships required is displayed in Figure 2-i.

The arguments above indicate the importance and relevance, and the many dimensions of the sponsor role. It is not for the faint-hearted or to be treated lightly by organisations, yet research by the PMI (2012) indicates that 68 per cent of organisations do not have effective project sponsors.

To have effective project sponsors, to build organisational capability and capacity in this role, it is argued that organisations need to avoid two 'pitfalls in project sponsorship' (Crawford & Brett 2001, p. 4). Firstly, without the role being defined, recognised, supported, and visible in the organisation, problems will arise. Secondly, without the sponsor fully understanding their role and having the skills required they will be unable to effectively carry out the required functions. Therefore guidance, support, and training are required (KPMG & APIM 2018). Research undertaken by Crawford and Brett (2001, p. 5) found that this critical aspect was often neglected, and the sponsor was left to fend for themselves. The Australia-wide project

research by KPMG and the AIPM⁸ (2018, p. 14) found that those organisations that did provide training and support to sponsors almost doubled their success rates.

Figure 2-i: The sponsor role and interrelationship



(Adapted from Labuschagne et al 2006)

These are important points, as results from a survey (Chapman 2017) of senior executives across sectors and industries on their understanding of the sponsor role had some damning findings. Ninety per cent of these senior executives did not know what the role involved and did not feel that they were effective in the role. Unfortunately, of the other 10 per cent who claimed to know what they were doing, most actually did not. Less than one per cent had a good understanding. The KPMG and AIPM (2018, p. 16) research concluded that if organisations wanted to improve project success rates, and get better returns for their

⁸ Australian Institute of Project Management (AIPM)

investments, they needed to increase focus on the education and professionalisation of the sponsor role. This obviously has linkage back to the earlier point of the sponsor role being an organisational priority. If it is not, then this will contribute to the lack of understanding of the role.

The support and training focus are also relevant to discuss, as it is also common that when organisations attempt to address the training issue, they can tend to train sponsors in the incorrect skills (Chapman 2017). For example, whilst sponsors need an understanding of project management, they do not need to be trained project managers, that is not their job. It is argued instead that organisations need to focus support and training on improving the disciplines ‘associated with portfolio decision making and governance, particularly in the areas of defining and monitoring the realisation of project benefits’ (KPMG & AIPM 2016, p. 16). Defining and addressing the support and training requirements of sponsors, given the multi-dimensional role they undertake, can be a challenge for organisations (Bryde 2008; p. 807).

As sponsors are argued to be required from the senior executive within the organisation it can be assumed that they will already be busy people, which leads to the risk of them not being able to commit the required time to the sponsor role (PMI 2012). How the organisation and the sponsor structure their role and time is therefore also a critical factor. Should they step out of their day-to-day role for the duration of the project? Should they enlist support to build a ‘sponsor support’ team? What is not required is a ‘disconnected executive whose main responsibility is to secure the project funds and then come in for the victory lap when it is all over’ (PMI 2012). Other types of unwanted sponsors (APM 2018, pp. 8-9) include the ‘butterfly type, whose interest in the projects waxes and wanes’; the ‘reluctant sponsor’, one who really doesn’t want to do the role and is not tied to the benefits but feels unable to say no; and the ‘incompetent sponsor’, one who simply has no idea of what the role requires. Interestingly the research also indicated a growing trend in organisations with large projects to dedicate a sponsor to the project full-time and treat this as a career development role (ibid).

Targeted research on the institutional governance of the sponsor role in the Australian and New Zealand public sectors could not be identified. However, the various jurisdictional institutional frameworks and internal reviews can offer an insight. For example, with the introduction of PRINCE2 and Gateway Reviews within New Zealand and a number of Australian jurisdictions, the sponsor became an identified role, and its importance was

detailed (Tatnall et al 2013, p. 53; Sharpe in Wanna ed. 2007, p. 205). However, despite these institutional guidelines there is also evidence that whilst the sponsor role and its importance might be documented, the implementation is a different challenge.

The Victorian Auditor-General (2008), a number of years after the introduction of PRINCE2, concluded project outcomes were negatively impacted due to poor project sponsorship (ibid, p. 8), the sponsor not being at the appropriate organisational level, (ibid, p. 34), the sponsor roles and responsibilities neither being documented or identified (ibid, p. 33), and that methodologies to assist with the sponsor role were not used (ibid, p. 34). Then three years later the Victorian Ombudsman (2011, pp. 5-8) reported that sponsor roles and accountability were unclear and undefined, the responsible officers were reluctant to make decisions, and that leadership from the top was required; much the same outcomes as the 2008 report. A follow-up report in 2012 (Victorian Ombudsman 2012, p. 3) further concluded that these sponsors did not have the requisite expertise to undertake the role. The Audit Office of NSW (2014), in their audit of the LMBR Program (AUS\$500m+) found that the quality of project sponsorship impacted on the program. In the APS it was found that there needs to be 'improved governance/management of projects through greater understanding by SROs of their responsibilities' (Gershon 2008, p. 79). In New Zealand, the ministerial inquiry into the Novopay⁹ project (Jack & Wevers 2013) clearly detailed a failure in project sponsorship as a key factor in the project's failure, and annual reviews into the gateway review process continue to identify sponsor related issues (The Treasury 2017).

Another argued commonality is that many of the jurisdictions have capability frameworks that address various required organisational ICT and non-ICT roles, yet the project sponsor role is not identified in any of these as a specific role (Australian Government 2010; Office of eGovernment 2011; NSW Government 2012; Department of Finance and Deregulation 2012; Department of Premier and Cabinet 2013; Department of Finance and Services 2014; Victorian Public Sector Commission 2015).

In summary literature indicates the sponsor role as critical for project success, yet it remains largely misunderstood organisationally, there is a lack of priority to address this as a required executive skill, or to provide the necessary training and support to develop those skills. For a

⁹ Note: Novopay is researched in more detail in Chapter 8 as a case study.

project to succeed it needs a capable and dedicated sponsor for the duration of the project. Whilst within the Australian and New Zealand public sectors there is evidence that the sponsor role is required, and is important, there is little evidence that this is being addressed institutionally.

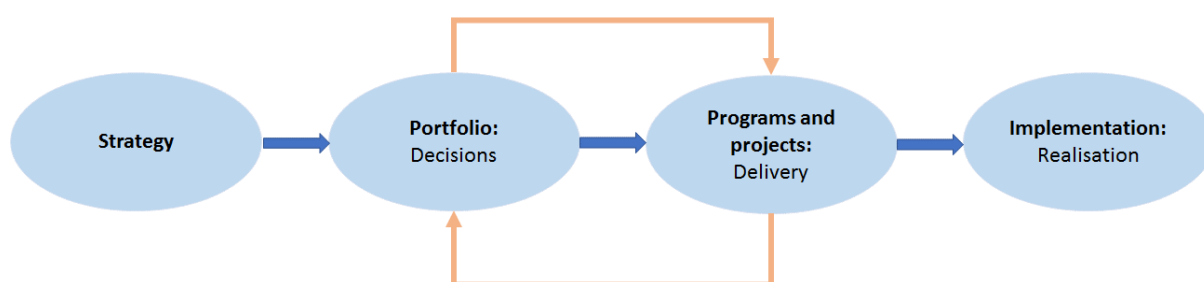
2.3 Project management

It is argued that project management, as a formal discipline, ‘was born in the middle of the twentieth century’ with projects such as the Manhattan project to build the first atomic bomb (Shenhar & Dvir 2007, pp. 8-9). From then the discipline, its guidelines and processes continued to develop and began to be recognised as a profession. Rules and procedures for world-wide use emerged and in 1969 the *Project Management Institute* (PMI) formed to develop world-wide standards. The PMI has been described as the ‘premier’ global project management professional body (Shenhar & Dvir 2007, pp. 8-9; Dinsmore & Cabanis-Brewin 2010).

The PMI, leveraging other PMI guidelines and project management standards such as the *Project Management Body of Knowledge (PMBOK)* and the *Standard for Project Management* provided guidelines for organisations to use in improving their project management disciplines and maturity, titled *The Organisational Project Management (OPM) Maturity Model* (PMI 2013b). The PMI argues that for organisations to deliver in areas such as new product development, operational effectiveness, and customer services enhancement, then the executive needs to focus on project management capability to ensure success. That means building ‘an environment for delivering individual projects and programs, while creating an organisational culture that treats temporary endeavours as projects.’ To do so requires the organisation to understand what ‘project management-related practices, knowledge, skills, tools, and techniques have proven consistently to be useful.’ This also includes processes to compare against industry practices, the identification of capabilities, and ‘the establishment of a roadmap for achieving improvements specific to its needs of the organisation’ (PMI 2013b, 1.2). OPM is a model to deliver organisational strategy/policy through project and program management. It is an integration model. From organisational strategy, OPM then evaluates and aligns initiatives to ‘a set of programs and/or projects that yield the appropriate value decisions and benefits for the organisation.’ These are then delivered through a series of projects or programs through to the realisation of the benefits (PMI 2013b, 1.3). There is an important feedback loop that reviews, monitors, and adjusts

projects/programs as necessary (see Figure 2-ii). The important factor to note in this principle is that projects are not ad-hoc, they derive from an overall strategy, assessed as part of an organisational portfolio of work, then delivered and monitored throughout. It is the result of an integration of knowledge, strategy, people, and processes (ibid).

Figure 2-ii: The organisational project management model



(adapted from PMI 2013b, 1.3)

A portfolio is a term that refers to the collective management of a group of projects or programs aligned to achieve organisational objectives. Program management is a collection of projects linked through a common outcome or some type of collective capability. Program management has specific knowledge, skills, tools, and techniques that differ from managing individual projects, and has a focus on the interdependencies between the individual projects. Project management is the application of knowledge, skills, tools, and techniques to meet the project requirements (PMI 2013b, 1.5.1-1.5.3).

An important factor to note in the above discussion is that ‘project management’ does not refer to a particular position or role, such as a project manager. It is a discipline that encompasses the integration of having the right processes (structure, guidelines, standards, rules, norms, and so on), that can be actioned by the right people (organisational capability and capacity), to plan and deliver a coordinated series of projects/programs that realise organisational strategy. A project manager is simply, albeit an important role in this web, supported in their role by the other integrated parts.

To assist in this overall process, mature project management organisations can have a Project Management Office (PMO), a central organisational body that coordinates all

projects/programs. A PMO can be defined simply as being responsible for translating the organisation's strategy into a series of projects and programs (Altuwaijri & Khorsheed 2012, p. 39). It is also argued to be responsible for organisation-wide distribution of project management best practices (Bolles 2002). The PMI argues that the PMO liaises between the portfolio, program, and projects, and monitors and reports on progress, and that their primary function is to support the programs/projects and key staff. For example, through initiatives such as training, communication, developing process and templates, identifying methodologies, and the management of shared resources (PMI 2013b, 1.5.5). However, the structure and role can vary in each organisation.

Another argued indication of an organisation's project management maturity is whether they can be classified as project-based organisations (PBO). A PBO is defined as (Miterev et al 2017, p. 481):

'... one which makes the strategic decision to adopt project, program and project portfolio management as business processes to manage its work.'

PBOs therefore treat project management as a 'strategic competency' (Green 2005). This is evidenced by a 'strategic decision to adopt project-based working' and the formalisation of 'processes and structures' to support that choice' (Miterev et al 2017, p. 481). Developing and improving project management capability is therefore a priority of senior management in these organisations (Kwak et al 2015, p. 1652).

In PBOs people can 'spend a large amount of their time working in various types of temporary project constellations' (Bredin 2008, p. 567). That is not to say PBOs do not have permanent structures and processes, rather that temporary project structures are embedded in this permanent context. Organisational structures can also differ in PBOs, from the traditional top-down hierarchical structure, to be more vertically and horizontally integrated to meld business and corporate strategy with project delivery (Thiry & Deguire 2007, pp. 651-652). However, Bredin (2008, p. 567) argued regardless of these structures, a key feature of PBOs is that they 'retain a core group of employees for initiating, organising, and conducting' projects. Another emerging trend in PBOs is for project managers to take on senior organisational management roles (Thiry & Deguire 2007, p. 651), recognising their organisational importance.

These arguments around the importance of project management in the delivery of an organisation's strategy, and the need to integrate this within the organisation then lead to a discussion of where project management fits within an organisational structure and the importance placed on it by executives. Bolles (2002) argues that if an organisation wants to be effective at delivering strategy, then project management needs to be at the executive management level, 'else how can a company ensure that projects are managed successfully across the organisation, and that strategic, mission-critical projects are given the best opportunity to succeed from the very start'. That includes executive acceptance of project management as an independent business function 'at the highest level of the organisation to enable the authority that is required to distribute, monitor, and control the distribution of the disciplines required to achieve enterprise-wide project management best practice capabilities.'

However, there are many reviews into project management capability across the Australian and New Zealand public sectors that indicate that this executive priority is missing. In his extensive review of large Australian Public Service (APS) projects Shergold (2015) cites the lack of project management capacity and capability in the APS as a major factor in APS project failure. He found that the APS lacked discipline in project management (ibid, p. vii), did not value the importance of project management skills (ibid), needed to recognise project managers as a community of practice within the public service (ibid, p. 6), and that the APS had no existing plan to address this deficiency.

The Victorian Ombudsman (2012, pp. 5-7), following an investigation into large Victorian Government ICT projects concluded that within the Victorian public sector there was a lack of skilled senior project managers and there was no effective strategy in place to address this, and as a result remains a factor in the ongoing problems within Victorian government ICT projects. It was cited that as an attempt to manage projects internally agencies had appointed non-skilled public sector staff to manage projects with 'often disastrous consequences.' A Northern Territory Legislative Assembly (Public Accounts Committee 2014, p. 15-19) review into the management of Northern Territory public sector ICT projects also concluded that a major factor in the continuing problems in successfully delivering projects was the lack of in-house project management capability and capacity, inclusive of staffing, guidelines, methodologies, and standards. In their extensive study into large New Zealand Government ICT projects Gauld and Goldfinch (2006, p. 132) concluded, tongue in cheek, that if the public sector wanted to increase the likelihood of failure then they should continue to 'rely on

the advice and skills of contracted consultants, salespeople, and ICT suppliers, and do not develop your own project management' capability and capacity.

There is evidence within the various jurisdictional capability frameworks that project management has been identified as a specific capability (Australian Government 2010; Office of eGovernment 2011; NSW Government 2012; Department of Finance and Deregulation 2012; Department of Premier and Cabinet 2013; Department of Finance and Services 2014; Victorian Public Sector Commission 2015), however as detailed in the literature, addressing project management capability and capacity is more than just having a number of project managers. There is little literature to indicate that the Australian and New Zealand public sector agencies have addressed the integration of the project management discipline within the various organisations.

However, as evidenced in the Introduction (Chapter 1), regardless of sector and industry, large ICT software projects continue to have almost certain poor outcomes, when measured against time, cost, and scope. Therefore, regardless of how project management is addressed within those organisations, the poor outcomes have continued. Using data collected over many years, Shenhar and Dvir (2007, pp. 5-7) argued that these poor outcomes do not necessarily mean that the project was poorly managed, or that the organisation had poor project management capability, as these 'failures' have occurred in many well-respected organisations, such as NASA. These projects had every reason to succeed but did not. The authors concluded that the common theme in the organisations and projects was that '... executives as well as project teams failed to appreciate up front the extent of uncertainty and complexity involved (or failed to communicate this extent to each other) and failed to adapt their management style to the situation'. A complex project, from a project management perspective, can be classified as '... challenging to manage because of size, complicated interactions, or uncertainties' (Aucion 2007, p. 132). In addition, the PMI define project complexity as 'a characteristic of a program or project or its environment that is difficult to manage due to human behaviour, system behaviour, and ambiguity' (PMI 2014, p. 12).

It has been argued that (Baccarini 1996; Ribbers & School 2002; Hass 2008, Introduction; Bakhshi et al 2016) that this complexity in large ICT projects has increased due to the focus on business-driven change, hence the traditional IT function has had to adapt. IT projects are no longer developed in isolation but 'the overarching process of business transformation; the reach of change extends to all areas of the organisation and beyond to customers, suppliers,

and business partners—making the complexity of projects formidable.’ This complexity is added to as large-scale projects are long in duration and susceptible to changing environments and business needs. They can have far reaching but ill-defined scope and poorly understood requirements, and often have aggressive timeframes and inflexible budgets. By their size alone, they will be organisationally important and therefore extremely visible, in the public sector politically charged, and with many varying expectations. All-in-all a challenge for any organisation, regardless of their project management maturity. Therefore, Hass (2008, Introduction) argued ‘we must find new ways to manage large, complex projects’ with a starting point being a ‘more flexible and adaptive approach to project management’.

Due to these factors, it has been argued that where once project management was a focus on time and money, and achieving those in a linear manner, due to complexity issue of large projects there is now a requirement for a more ‘exciting’ and adaptive form of project management (Morris 1998, p. 3). However, Hass (2008, Chapter 1) argued the problem is that the more complexity impacts on the project, the common organisational response is to revert to the assumed control and rigidity of the traditional project management approach. Hass argued that to deal with this dilemma a ‘contemporary adaptive project management model is emerging’, one that acknowledges the unpredictability and the resulting need to manage ‘in a very different manner using complexity thinking, which teaches us to adapt to our environment for our very survival.’ A comparison of the conventional and adaptive approaches to project management are detailed in Table 2-1.

Table 2-1: Conventional versus adaptive project management

Conventional project management	Adaptive project management
Structured, orderly	Spontaneous, disorganised
Relies heavily on plans	Evolves over time as more is learnt
Predictable, well-defined	Ambiguous, unique, unstable, full of surprises
Stable environment	Chaotic environment
Proven technologies	Unproven technologies
Realistic schedules	Aggressive schedule, urgent need

(adapted from Hass 2008, Table 2.1)

Not only do organisations have to apply new ways of applying the project management discipline, but it also requires a new style of project leadership, with specific attributes (Hass 2008, Chapter 4). The Australian Government’s Department of Defence in recognition of and to address the complexity issues in the project management of large complex projects has issued standards for these (ICCPM 2012) and describe requirements for adaptive planning and leadership. There are also a series of special attributes detailed. These are wisdom, action, outcome oriented, creates and leads innovative teams, focused and courageous, and influential (ICCPM 2012, p. 93). Whilst this is an excellent initiative, arguably a criticism is that literature indicates issues with obtaining capability and capacity in the public sector for ‘conventional’ project leadership, this requirement for an adaptive project management style ups the ante even more, as that will be quite a special person and team that has all those attributes.

The project management framework within an organisation should also address appropriate delivery methods. This is discussed at length by Hass (2008, Chapters 6-8), who in summary argues that depending on the complexity of the project, then different models are more suitable. For the smaller scale, more predictable and less risky projects a traditional waterfall method could be applied. However, as the complexity increases alternative approaches need to be considered, rather than the traditional linear approach, iterative models should be used

as they enable better control of ‘unpredictability and uncertainties.’ The iterative approach aims to break down delivery into incremental stages, test, adapt, obtain feedback as you progress and to incrementally build up to the entire solution (Fowler 2005).

One such iterative approach is called Agile. Agile’s principles are simple, start with your goal, requirements, scope and so on, but break the delivery into iterations. Complete iteration one, and then fully review what was done, how it was done, how long it took as so on. Then apply those lessons to iteration two, and repeat. Learning, adapting, fine-tuning as you progress. (Hass 2008). It is claimed that Agile differentiates itself from traditional methods by placing more value on individuals and interactions over processes and tools, working software over comprehensive documentation, customer collaboration over contract negotiation, and responding to change over following a plan. It also has principles of early and continuous delivery of software, harnessing change, collaborative development between the business and developers, face-to-face communication, sustainable development with continuous learning, and continuous attention to technical excellence and design (Beck et al 2001). Agile is stated to be now in wide use for software projects (Abrahamsson et al 2009; Dingsoyr et al 2013; Lappi & Aaltonen 2017) as it encourages creativity, rapid adaptation, and a customer focus (Thomke & Reinertsen 1998; Schwaber 2004).

For the most complex of projects, Hass (2008, Chapter 7) argues that a prototyping model would be more appropriate. This is also iterative, but simplified, the aim is to build a prototype, review and validate, then adapt the prototype, addressing design, technical and stakeholder issues as you go (see Figure 2-iii for a diagrammatic view of complexity and project delivery models).

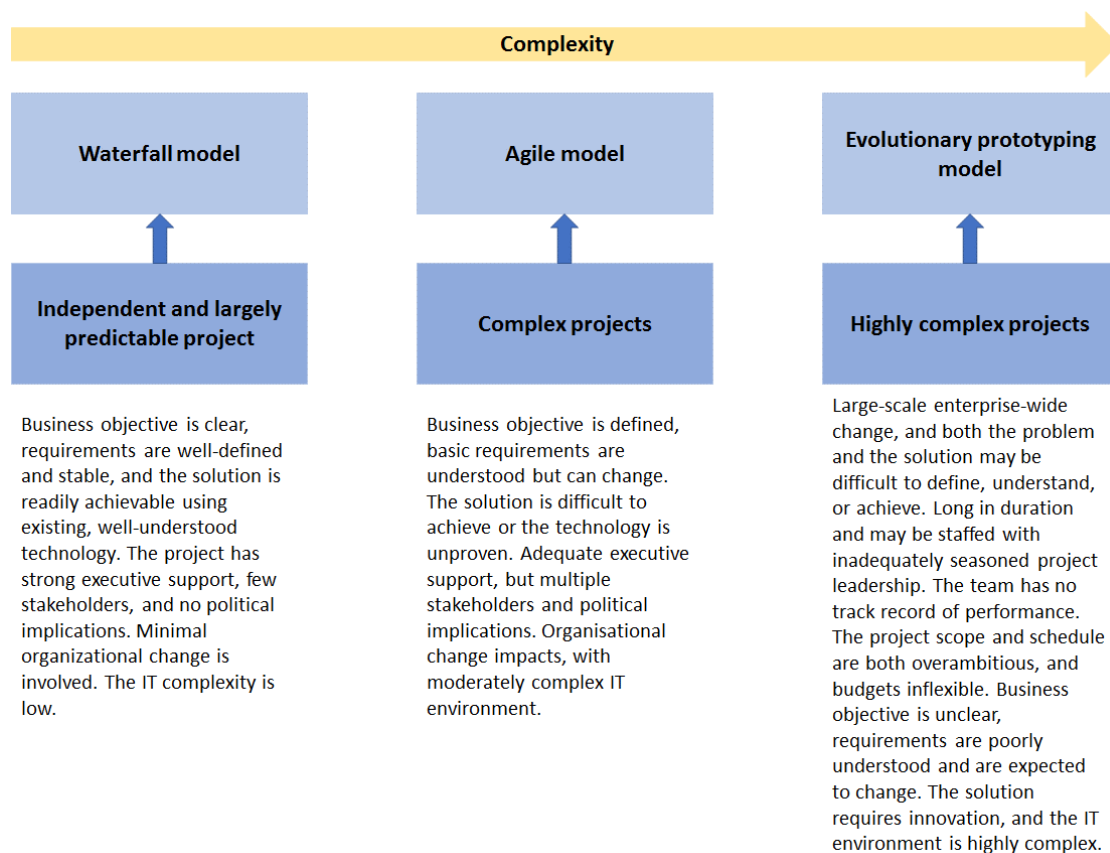
However, it is also pertinent to note that there are differing views on the application of iterative models such as Agile to large projects. There is an argument that it is more suited to a project with low ‘background complexity but high front-end interactivity’ (Berger & Beynon-Davies 2009, p. 566), others argue that it can and has been applied successfully to a large complex ICT software project (Fowler 2005). The commonality is an agreement the iterative approach can help to break down complexity, and that how the organisation adapts its project management framework to support its use has a major bearing on its success.

There is evidence that within most Australian and New Zealand jurisdictional institutional frameworks of the need to consider iterative project management options, such as Agile, for

large complex projects (Department of Premier and Cabinet 2015; Office of Government Chief Information Officer 2016; digital.govt.nz 2021a; digital.nsw 2021a; Queensland Government 2021). The issue will be as argued in the literature, that the organisations will need the corresponding project management capability.

In summary project management needs to be understood as a discipline, consisting of many roles and skills, supported by institutionalised guidelines, rules, processes and the like. Mature project organisations integrate projects throughout their core business and support project management as an organisational priority. There is little evidence this applies to the Australian and New Zealand public sectors. Project management is further challenged in large scale ICT software projects as they are classified as complex, and therefore require additional skills. Therefore, the argument was to break down complexity by engaging in a more iterative delivery method, such as the use of Agile.

Figure 2-iii: Complexity and project delivery methods



(adapted from arguments in Hass 2008, Chapters 6-8)

2.4 Forecasting

Flyvbjerg (2013, p. 760) describes the forecasting¹⁰ process as the ‘front-end’ of a project, as it is where alignment with organisational processes and resources to achieve that ‘target’ are made (Kwak et al 2014, p. 41). Flyvbjerg (2013, p. 760) argued that many researchers cite this stage as being critical to a good project outcome; in fact, they claim it is:

‘... the perhaps most important stage in the overall project cycle in securing the success of projects or avoiding failure’.

The forecast establishes factors such as how much will it cost, how long it will take, the scope of work and what benefits will be delivered and to whom and by whom. This forecasting provides criteria for the approval of the project, and potentially for its approval over other organisational projects. That means any unrealistic forecast actually ‘corrupts the decision-making process’ (Anderson et al 2016, pp. 171-172). It also sets the benchmark for how the outcome will finally be assessed. Hall (1980, p. 4) in his study of great planning disasters argues that these projects were evaluated as disasters on the ‘basis of forecasts that were later found inadequate and misleading’.

The organisation’s project management maturity, capability, capacity and the role of project management guidelines, practices, standards, forecasting methods, and in particular how the project manager applies these are important factors in the forecasting process (Caliste 2013; PMI 2013a). Given the importance of the forecast to initially gain approval, and then throughout the project to implementation and evaluation it must be, if not accurate, relevant. It needs to have some efficacy. Both the Project Management Institute (PMI) and the International Project Management Association (IPMA)¹¹ have codes of ethics and professional conduct (PMI 2017; IPMA 2015) that clearly indicate the responsibility for the project manager to undertake ethical planning; a forecast that is reasonable, truthful, and accurate (IPMA 2015, p. 6).

¹⁰ Also known as ‘estimating’

¹¹ ‘IPMA is a Federation of about 70 Member Associations (MAs). Our MAs develop project management competencies in their geographic areas of influence, interacting with thousands of practitioners and developing relationships with corporations, government agencies, universities, and colleges, as well as training organizations and consulting companies’, IPMA, viewed 12 October 2017, <http://www.ipma.world/about/>

However, whilst professional bodies argue a project management ethical requirement to prepare relevant forecasts, there are two other factors widely documented in literature that impact on forecast preparation in all large projects. Flyvbjerg (2008) argues these are, firstly, excessive optimism, or ‘delusion’ about what is to be achieved, how, at what cost, by when and importantly what benefits will be delivered. This was largely the topic a book called *Dangerous Enthusiasms* (Gauld & Goldfinch 2006), where the authors argued that New Zealand Government agencies with great optimism and enthusiasm entered into large projects that were simply beyond their capability and capacity, and that they were delusional to think they would succeed. This is not so much being unethical, just excessive, to the point of being dangerous, optimism.

Secondly, and more sinister, unethical, and difficult to prove is that of ‘deception’ at the time of planning, for example, deliberately underestimating costs and overestimating benefits to gain approval. The issue with this factor is that governments commit to the project at a cost to achieve those benefits. If they are inaccurate, then the premise for the approval is false. Both scenarios have a similar negative impact. They set unrealistic and possibly unachievable expectations for the project from the very outset; a platform for failure which may be a factor in the current perception of high failure rates.

The public sector organisational, environmental, and political factors can escalate this propensity for both optimism and deception, especially political considerations, or dimensions. For example, when there is competition for limited project funding, then an environmental condition is established for either optimism or deception in forecasting (Flyvbjerg 2008, p. 19); ‘if the project cost is too high, I will not get the funds so I am sure we can do it for less and secure the money’. If the project enters into a contract with a third party, a vendor who by necessity needs to be involved in forecasting, this can be ‘negatively impacted by the self-interest’ of the vendor (Fukuyama 2004, p. 52) as they aim to secure the contract. Elder-Vass (2010, pp. 4-5) argued that within an organisation specific groups of people have social structural power and collectively they have ‘emergent properties’ that have causal impact. These factors in turn have inherent implications for forecasting. This was discussed in a study for The British Department of Transport (Flyvbjerg & COWI 2004, pp. 37-38), where it was found that forecasting in the public sector is influenced by rational institutionalism as the administrative and political decision-making processes are influenced by ‘actors that seek to maximise their utility in line with their interests within a rather stable

institutional setting which impacts upon their behaviour'. These organisational influences impact on actors differently, depending on their own interest and personal stake in the project. The guide argues that within the public sector, in this case The British Department of Transport, this therefore means the various actors then have either a direct interest in avoiding delusion/deception or alternatively have little interest in doing so (see Table 2-2).

Table 2-2: Example of forecasting influenced by direct interest in a transport agency

Actors having no or little direct interest in avoiding costs overrun	Actors having a direct interest in avoiding cost/overrun
Local transport authorities	Ministry of Finance
Local politicians	Department of Transport
Local economic interests	
Local civil servants	
Consultancy companies	
Individual MPs	

(adapted from Flyvberg & COWI 2014, p. 48)

The implication is that actors such as the local politicians have much to gain politically by a project proceeding in their constituency, hence optimism and deception prevails. However, actors such as the Ministry of Finance are probably more concerned that projects are accurately planned to ensure the best use of limited resources and to approve those projects that will provide the best outcomes. The challenge for the public sector is how, if at all, to manage these conflicting interests.

The literature review highlights that there are methods to address this both delusional optimism or deception in forecasting during project planning. As an example, Flyvbjerg et al (2005) proposed a method called 'reference class forecasting' (RCF), based on the Nobel Prize for Economics work of Kahneman and Tversky (1979). The theory proposed that due to organisational overconfidence, people generally underestimate factors such as cost, time, and

risk, and overestimate on factors such as benefits. They call this an ‘inside view’. They therefore proposed that an ‘outside view’, where forecasts are to be made considering data available from similar initiatives (Flyvbjerg 2008, pp. 18-19). The intent of RCF is to simply compare project forecasts with past similar projects to ‘establish the most likely outcome for the specific project’ (Flyvbjerg et al 2016, p. 2).

There are many other estimating methods. Two methods common in the Australian and New Zealand public sectors, the PMBOK guide (PMI 2013a, pp. 204-207), and the PRINCE2 guide (Office of Government Commerce 2002, p. 177) provide advice on a process and what details should be included; basically, a forecast built up on known and assumed details. The PMI (2011) has a process of identifying inputs, the required outputs, and then defining the tools and techniques required to do so, and then estimating all of this. In their respective books on forecasting Jones (2007), and Laird and Brennan (2006) detail various methods, and tools to assist in forecasting ICT software projects, such as, bottom-up, top-down, benchmarking, object oriented, and function point analysis. However, all of these methods arguably fall victim to the Flyvbjerg argument of either delusional or deceptive behaviour as the output is only a reflection of the estimates entered. This is acknowledged by Jones (2007, Preface) who argues that within an organisation methodically produced estimates ‘may be arbitrarily replaced by optimistic estimates’ and this factor remains ‘troublesome’ and cites organisational pressures and environmental factors as key reasons. Laird & Brennan (2006, p. 79) in their book simply state that forecasting ‘has a long way to go’. In a nod to the Flyvbjerg and the RCF argument Jones concludes by stating the only way to temper this is to keep historical data on past projects and to compare forecasts against these, in effect to learn from the past. The notion of ‘learning from the past’ though is hardly a new insight, for in 1905 George Santayana argued ‘those who cannot remember the past are condemned to repeat it’¹². However, the obvious factor here for the public sector is to have the data available. In addition, the complexity of, and time periods between large projects in an organisation is such that it makes the application of past learnings in future forecasting difficult (McMillan 1992; Lui et al 2010, p. 230).

¹² Santayana G 1905, ‘The Life of Reason: Reason in Common Sense’, *Internet Encyclopedia of Philosophy*, viewed 21 July 2021, <https://iep.utm.edu/santayan/>

The other factor, as identified in the project management section, that negatively influences on the ability to provide relevant forecasts for large ICT software projects is their complexity (Cooke-Davies et al 2011; Herszon & Keraminiyage 2014). In their study into the impacts of complexity on forecasting, Herzon and Keraminiyage (2014) argued that traditional forecasting processes fail to deal with complexity and identified 23 dimensions or factors that impact on this. They include factors such as the project size, organisational capability and capacity, political influence, environmental constraints, uncertainty, stakeholder interaction and project management maturity. The argument being these all add to the complexity of the project and challenge the ability to accurately forecast over a long-term as a result. Therefore, it has been argued that forecasts for large complex projects that that have tried to predict the future were ‘fanciful’ and are only ‘guesstimates’ that provide a starting ‘target’ and are simply ‘unreliable’ (Touran & Lopez 2006; Anderson et al 2016, p. 172; Turner & Xue 2018, p. 783).

Within the Australian and New Zealand public sectors there is evidence within the institutional governance frameworks of efforts to enable more accurate forecasting. Within the New Zealand they have implemented extensive procedures for large ICT projects within the *Better Business Cases* (The Treasury 2019), including various methods, and even reference to optimism and how to address this. Within Victoria there is also the *High Value High Risk* (DTF 2018) assurance framework for large high-risk projects which also aims to improve both preparation and vetting of forecasts. It is not as though the sectors are not aware of the issue and the challenges, and to their credit they are adapting processes. However, the argument remains, that for large complex long time frame projects, how can this ever be accurate? It is also arguably about applying more control from above, rather than looking at the issues from the actors involved in these projects.

Within the project management literature review, the argued approach to break down the complexity of large ICT software projects by moving to an iterative delivery approach. A principle of this approach, such as Agile, is to do ‘just enough’ planning and forecasting to commence and then build up knowledge and certainty as you progress. In effect, begin with knowing what you want to deliver and why, but not necessarily how long it will take or cost. It is argued this imposes conflicts on organisations used to the traditional up-front forecasting, approval, and funding. Those conflicts include fluid versus specific delivery date and costs, flexible versus fixed plans, and just enough versus total control. The conclusion was that

organisations therefore need to adapt the funding process accordingly (Cao et al 2013). Perhaps easier said than done in the public sector, as evidenced by the fact that the institutional frameworks across Australia and New Zealand generally require the preparation of a full up-front forecast for a large project (Department of Premier and Cabinet 2008c; Queensland Treasury 2015; Department of Treasury and Finance 2015; Department of Finance 2015; DTF 2018; The Treasury 2019).

In summary the literature indicates the importance of a relevant forecast at the project approval stage, and at implementation. Vital for the allocation of limited organisational resources and for assessing the project's outcome. Various methods have been and continue to be utilised, but arguably each is a complex task in itself and dependent on data which may not be available. There are many environmental factors that add to the forecasting challenge, such as how you can foresee or estimate these. The political factor can also be an influence on public sector forecasts, for example, pressure to keep the forecast within a politically acceptable range. Delusional optimism or deception have also been identified as factors that skew forecasts rendering them irrelevant; acknowledging these behaviours exist is one thing, effectively controlling them is another. Therefore, there is an argument that the complexity and multi-faceted and unpredictable interdependencies of large ICT software projects make any expectation of a relevant forecast simply 'fanciful'. That leads to the question of what is the point of doing them, to tick a box? New delivery methods such as Agile are at conflict with traditional forecasting and funding processes, and if these methods are to be used, the forecasting process needs to adapt accordingly.

Chapter 3: Theoretical framework

3.1 Introduction

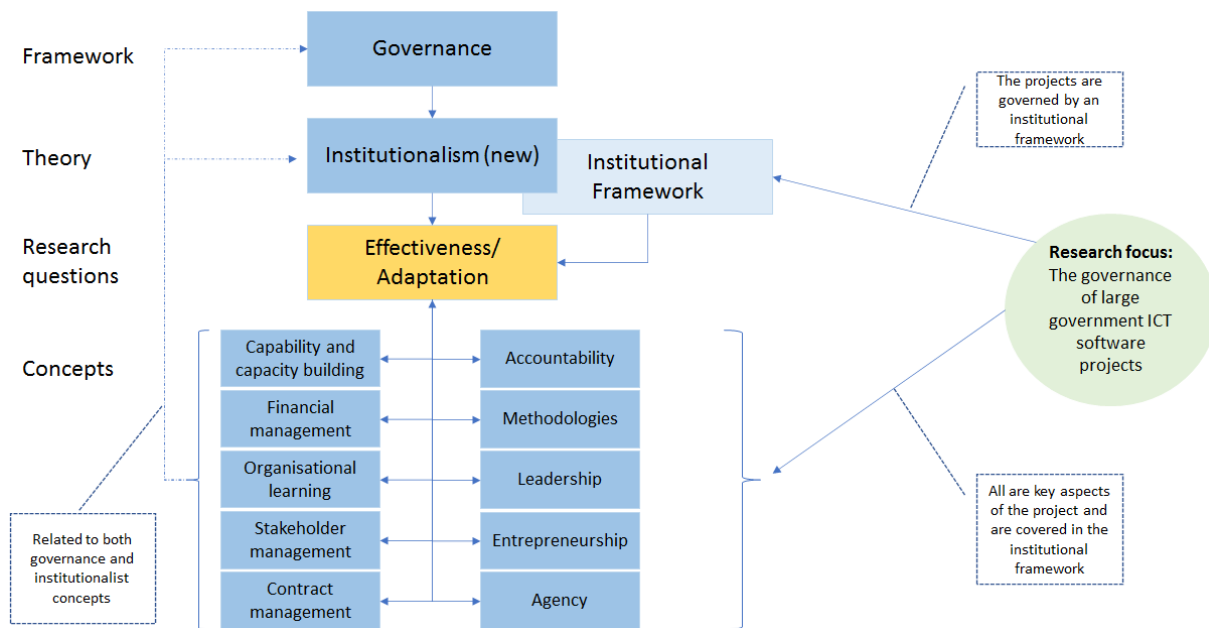
The preceding chapters discussed the puzzle, the resulting research questions, and the research focus to be applied. However, to undertake this research and provide plausible explanations requires a theoretical framework or structure that guides and informs the research. A theoretical framework explains the ‘main things to be studied — the key factors, concepts and variables — and the presumed relationship among them’ (Miles & Huberman 1994, p. 18).

This chapter outlines the framework, or theoretical ‘structure’, utilised in this thesis to answer the research questions. It outlines the theory that provides ‘an *a priori* framework ... a framework that is independent from experience’ which in turn ‘provides the conditions for the intelligibility of experience’ (Abend 2008, p. 180). To put this another way, the framework places this research (governance) within a theory (new institutionalism) that both, independent of any research data (the experience), can situate and explain the research problem and then also provide the conditions against which the data is analysed and explained.

3.2 The theoretical framework

The overall theoretical framework is concerned with the governance of large government ICT software projects and will be situated within institutional theory, new institutionalism. Governance of these projects is argued to be enacted by an institutional framework, the series of rules, guidelines, norms, and so on that aim to control the operation of these projects to achieve consistency in outcomes. To provide a focus for data collection, a series of 10 concepts is utilised, each with governance, institutionalist, and project relationships. Collectively the theoretical framework will provide the data (the experience) against which to analyse the theoretical assumptions (see Figure 3-i). Each of these is discussed in more detail in following sections of this chapter.

Figure 3-i: The theoretical framework



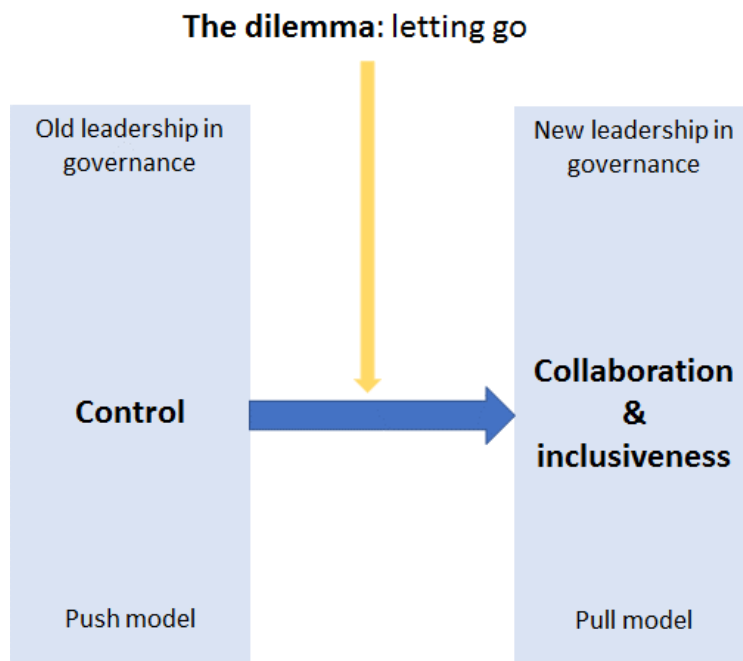
3.3 Linking governance to theory

There is much literature, over an extended period on the study of governance, but it is not the intent or need of this thesis to cover this history in detail, as the focus of this research is on current theoretical aspects of governance and how these relate to the research question and theoretical framework. However, in short, much modern literature focusses on a shift to ‘good governance’. This was termed by the World Bank and was economic in nature, and focussed on factors such as corruption, transparency, and reducing economic waste. Applying this to the public sector, reforms such as New Public Management (NPM) sought to improve governance by bringing private sector corporate governance practices into the public sector (Van Kersbergen & Van Waarden 2004; Bevir 2007; Rothstein 2012). The major shift from the NPM concept of governance to the ‘good’ governance model, was a shift from a principle of effective practices to a model of efficiency through participation and responsiveness (Katsamunska 2016). This meant viewing leadership practices as ‘multi-level, multi-directional, dynamic, and relational processes, embedded in context, and often centred on teams’ (Sullivan et al 2012, p. 43).

Aligned to the above, there are two argued approaches to governance. Firstly, a state-centric approach, where through power there is an authority to force, or at least attempt to gain,

compliance (Peters 2012). This has also been labelled as ‘*impositional*’ as it is imposed hierarchically (Richardson 2012). This is a structural approach to control the behaviour of individuals, yet it is then subject to individual agency for compliance (Peters 2012). The second approach, and the one aligned with the modern principle of ‘good governance’, is a more interactive and collaborative approach that through engagement seeks to build trust in the governance and to boost compliance (Rothstein & Teorell 2008, Peters 2012); a means of bringing agency into governance (Peters 2012). This has been labelled as ‘*consensual*’ with an emphasis on governing through consultation with the relevant interest groups and/or actors. This was classified as a new style of governing (Richardson 2012), a change from a fixed pattern of rule to one where the patterns of rule ‘are changing practices arising from interactive processes’ (Bevir 2007, Introduction). This change from a control focussed ‘push’ model to a collaborative inclusive ‘pull’ model also highlighted a change in required leadership style. One which is about letting go of control and being driven by collaboration to resolve issues (Sullivan et al 2012, p. 45). This is a dilemma between the old and new practices in leadership for governance (see Figure 3-ii).

Figure 3-ii: The dilemma for leadership between old and new governance



This change in governance principle was argued to be as a result of a recognition that collective choices and therefore compliance could not be effectively addressed by individual action (Peters 2012). It was further argued that it is through this collective of actors who ‘regard each other as knowledgeable, or at least as needing to be answered, that public policy issues tend to be refined, evidence debated, and alternative options worked out ...’ (Heclo 1978, p. 102). It is due to these concepts that the emergence of this new governance concept has been associated with the emergence of new institutionalism (Rothstein 2012). Indeed, it has been argued that new governance and new institutionalism cannot be easily separated and have related theoretical contexts (Bevir 2007). New institutionalism is discussed in more detail in the following section, but similar to new governance there is a shift from structural to agency, and an adoption of a more constructivist approach to the development of the institution (Bevir 2007). To take this relationship one step further it is argued that the nature of institutions will directly impact on the ability to effectively govern (Peters 2011). Therefore, given an argued lack of any specific governance theory, it is argued that studying governance through a new institutionalism lens will provide a relevant basis due to the related concepts (Frederickson et al 2012; Bevir 2007).

It is argued that new governance consists of four concepts, or activities (Peters 2012). Firstly, you need clear goals. However, given that governance within the public sector typically exists at various levels as it filters down, there also needs to be integration of those goals across those levels. Secondly that means there needs to be a coordinated approach to recognise and prioritise those multi-level goals. Thirdly, those decisions then need to be implemented. Finally, adaptation and continual fine-tuning of the ‘fitness’ of the governance arrangements needs to occur. This happens based on ‘trial and error, feedback, imitation, and learning’ once again in collaboration with the interest groups/agents (Schneider 2012).

3.4 Institutionalism (new)

3.4.1 Institutions and their research via institutionalism

Whilst Scott (1995, p. 235) argued that ‘there is no single or universally agreed definition of an institution’, there are however similarities in literature. Some simply argue that an institution is not a thing as such, rather it ‘is a collection of rules’ (March et al 2011, p. 239; Steinmo 2015, p. 181). North (1990, p. 3) expanded on this by defining institutions as ‘humanly devised constraints that shape human interaction’. Ferris and Tang (1993, p. 7)

similarly argued that institutions constrain activities through rules, and actors therefore adhere to these rules as it is in their best interest to do so. This relationship between the ‘rules’ and the resulting shaping of and constraints on individual ‘behaviour’ is a common theme in literature (Bell 2011; Diermeier & Krehbiel 2003; Parsons 2007). This relationship is important to acknowledge, as it provides meaning, structure, and stability to behaviour ‘through routinisation and prior determination of acceptable and non-acceptable interactions’ (Timney 1996, p. 101). The institution provides direction and boundaries.

An important addendum to the argument that institutions provide the rules that define behaviour, is that this behaviour can be shaped by both formal and informal rules (Levi 1990; Bell 2011). Formal rules can be classified as those that either prohibit or permit actions, with negative consequences if they are not followed (Ostrom 1999). Examples are laws, policies, and regulations. Informal rules, as distinct from laws, can be summarised as widely accepted norms that are agreed upon and influence accepted behaviour (Lowndes 2014). They may even have some level of enforcement due to the understanding that there is a correct path to take. However, Lowndes (ibid) makes a clear delineation, between ‘personal habits’ and informal institutional rules. A personal practice is not an institutional informal norm. The inclusion of a ‘normative system of informal and internalised rules’ was argued by Levi (1990, p. 409) to provide ‘the most effective institutional arrangements.’ That is, the formal and informal, are an effective combination.

In its simplest form, institutionalism is the study of institutions (Scott 2005; March & Olsen 2008). If institutions influence individual behaviour (Parsons 2007; Steinmo 2015) to create ‘order and predictability’ (March & Olsen 2008, p. 2), then institutionalism is a means of understanding the relationship between institutions, behaviour, and outcomes (Diermeier & Krehbiel 2003; Scott 2005). Institutionalism is then argued to an appropriate means to research problems that result from following this ‘order and predictability’ (DiMaggio 1998, pp. 4-7), which equates to the puzzle identified in this thesis: why, when there are so many institutionalised controls to create ‘order and predictability’, have poor outcomes for large ICT software projects continued?

Academic literature classifies institutionalism into the ‘traditional/old’ and ‘new’ approaches. Traditional institutionalism deemed that institutions acted autonomously, whereas new institutionalism, which emerged in the 1980s, argues that institutions are best understood as an interactive contextual relationship between the institution and its actors, at the individual or

group level (March & Olsen 1984, p. 735). That is, new institutionalism is concerned not just with the institutional impact on individuals, but also with the interaction between the institution and the individuals (Lowndes 2018; Koning 2016). New institutionalism is also the subject of academic criticism, such as by Lowndes (2002, p. 105) who argued that it was weak in explaining the ‘genesis and transformation of institutions’, and Rothstein (1996, p. 153) who stated that change was ‘the weakest and most difficult point’ in institutionalist analysis. New institutionalism was argued to be good at explaining continuities, but less good at explaining change unless it is externally driven. However, Koning (2016, p. 640) argued that these criticisms are no longer warranted, as ‘over the last two decades, institutionalists have developed a large number of compelling accounts of change’. This was largely through the emergence in the 1990s of three standout new institutionalist theories, it is argued that new institutionalism is collectively identified by these (Thelen 1999). They are rational choice, sociological, and historical institutionalism (Hall & Taylor 1996; Thelen 1999). This multi-theoretic nature of new institutionalism was argued to address perceived shortcomings in explaining change (Lowndes 2010). Whilst there are differences in the new institutionalist approaches, it is also often ‘difficult to draw hard and fast lines between them’ and that many researchers are ‘border-crossers’ (Thelen 1999, p. 370). That is, they can be complementary, and add richness to research.

Rational choice institutionalism posits that institutions persist as they ‘reduce the uncertainties resulting from the multiplicity of individual preferences’ (Schmidt 2010, p. 6). The institutions set the rules, and actors follow the structure as it is expected others will act in the same way. This provides institutional stability and consistency. However, it is also argued that as a result of this stability and incentive-based behaviour, change is static and reliant on exogenous shock (ibid).

The sociological institutionalist posits that the institution’s norms, symbols, and beliefs directly influence the actions of individuals because they have legitimacy, and that alternative actions are illegitimate (Thelen 2004; Parson 2007; Kenny 2007). Sociological institutionalism can also be described as a ‘social theory’ due to its focus on ‘the social constitution of rational action within institutions’ (Butcher 2014, p. 327). Actors conform not from the fear of not doing so, but because they perceive it is appropriate to do so (Schmidt 2010). Institutional change is therefore explained by association with changes to these

influences across a wider environment, which can gain legitimacy, and then influence change in institutions (Bevir 2010).

Historical institutionalism arguably resides between rational choice and sociological institutionalism by combining the notions of constraint and legitimacy (Hall 1986; Steinmo 2015). However, central to the theory of historical institutionalism is the notion that institutions are shaped by history (Pierson 2000a; Streeck & Thelen 2005), and therefore history matters as it reflects a path of institutional change (Thelen 1999; Pierson 2004). In summary, historical institutionalism explains the present structure and individual behaviour with reference to the past. These authors argue change to be path dependent.

In the early 2000s a fourth new institutionalism emerged, called discursive institutionalism (Campbell & Pederson, 2001; Schmidt 2008; Schmidt 2010). It is described as an ‘umbrella concept for the wide range of works in political science that focus on the substantive content of idea and the interactive processes of discourse by which they are generated and communicated in given institutional contexts’ (Schmidt 2011, p. 684). This was argued to be a natural development of the other neo-institutionalisms and resulted because scholars sought to explain change dynamics by turning to the creation of ideas as a result of discursive interaction (Hay 1996; Blyth 1997; Campbell & Pederson, 2001). Ideas resulting from discourse can vary in form and type, such as dialogue, or policies and programs, and change in guidelines and processes. Blyth (2001, p. 4) argued that ideas are weapons that ‘allow agents to challenge existing institutional arrangements’ and that these weaponised ideas when deployed ‘can restructure existing institutional arrangements by defining not only the causes of a perceived <type of> problem but also the solutions for dealing with it’. The various new institutionalism approaches have been summarised and compared in the following table (see Table 3-1).

Table 3-1: New institutionalism – the four new institutionalisms

	Rational choice institutionalism	Historical institutionalism	Sociological institutionalism	Discursive institutionalism
Object of explanation	Behave in a rational manner.	Follow structures and practices.	Social norms and culture.	Ideas and discourse of actors.
Logic of explanation	<i>Calculated</i> : actors follow structure as it is expected others will too.	<i>Path dependency</i> : actors follow structure as it is the result of path dependency.	<i>Appropriateness</i> : actors behave in a way they feel is appropriate.	<i>Communication</i> : actors convey ideas for change.
Relationship to institutions	Structures incentivise behaviour.	Current institution is a result of historical path dependent change	Institution is based on cultural norms and frames.	Meaning structures and constructs
Approach to change	<i>Static</i> : continuity through fixed preferences, stable institutions.	<i>Static</i> : continuity through incremental change possibly interrupted by a major (critical juncture) shock.	<i>Static</i> : continuity through cultural norms and rules	<i>Dynamic</i> : continuity and change through ideas and discursive interaction
Explanation of change	Exogenous shock.	Exogenous shock.	Exogenous shock.	Endogenous process.

(adapted from Schmidt 2010, p. 5)

3.4.2 A multi-theoretic approach

This thesis will take a multi-theoretic approach to new institutionalism and will be a ‘border crosser’. This refers back to the earlier argument that the theories each have their own strengths and weaknesses, and that sometimes it is also difficult to draw hard lines between them, and as such many institutionalists become border crossers (Thelen 1999; Lowndes 2010). The approach will also provide for theory triangulation, where a situation can be analysed through different lenses, adding diversity to knowledge (Greene 2007). It is argued that by taking this approach the richness and relevancy of the research will be enhanced. A multi theoretic approach is also argued to support an inductive/interpretive research design, such as this thesis, where there is complexity and multiplicity of factors under research (Greene 2007).

Relating the multi-theoretical approach to the research questions will better explain the intent. Large government ICT software projects are governed by a series of norms, guidelines, rules and so on. This is the institution under research, with those norms and so on reflected in the institutional framework. The research aims to determine if this governance is effective in achieving the desired outcomes. Table 3-2 details how each new institutionalist theory can add value to the research; however, the argument is that by using only one would not provide as rich and as broad an analysis as using all to gain the diversity required to answer the research question.

Table 3-2: Application of the multi-theoretical approach

	Rational choice institutionalism	Historical institutionalism	Sociological institutionalism	Discursive institutionalism
Object of explanation	Behave in a rational manner.	Follow structures and practices.	Social norms and culture.	Ideas and discourse of actors.
Logic of explanation	<i>Calculated:</i> actors follow structure as it is expected others will too.	<i>Path dependency:</i> actors follow structure as it is the result of path dependency.	<i>Appropriateness:</i> actors behave in a way they feel is appropriate.	<i>Communication:</i> actors convey ideas for change.
Advantage to the research (when used in a multi-theoretic manner)	Will interpret if actors follow the institutional framework, as it is calculated that this is what others do and is expected of them.	Will interpret if the historical development and adaptation of the institutional frameworks has been effective.	Will interpret if the actors follow the institutional framework as they believe it is appropriate to do so. It will also highlight where they feel it is not appropriate to do so and act in a way, they deem appropriate.	Will interpret discourse from actors on issues with governance and identify ideas for change.

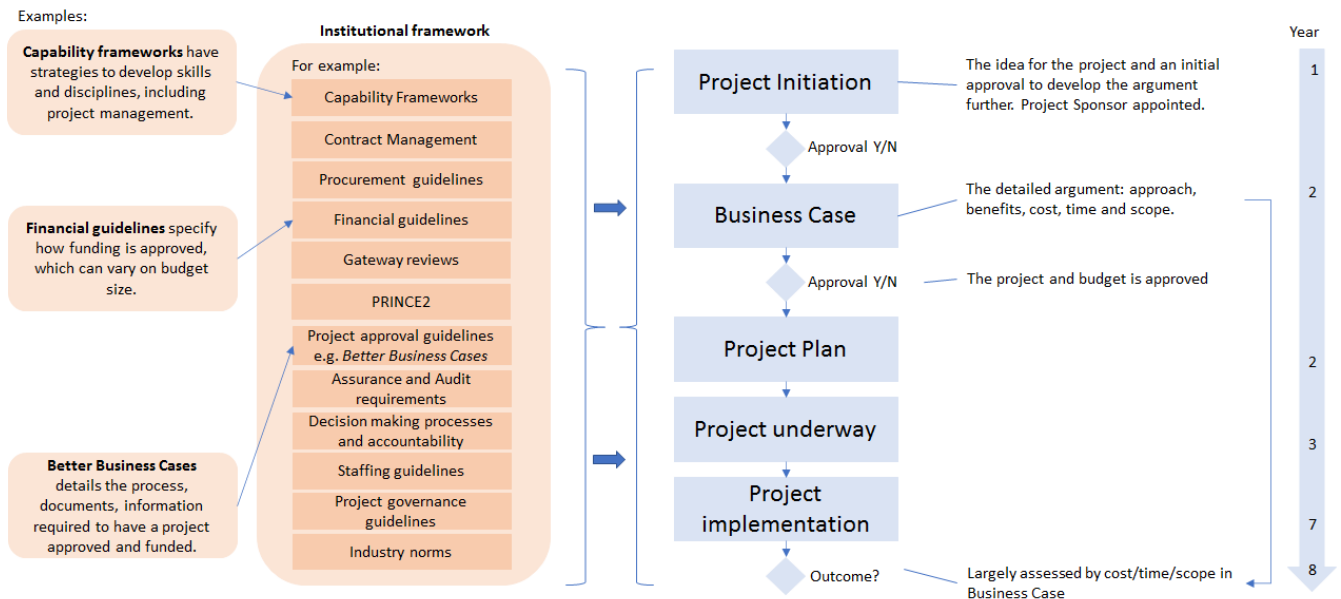
3.4.3 Institutional framework

The system, or collection, of formal rules, guidelines, procedures, roles, and the informal norms that shape both actions and behaviour is classified as an *institutional framework* (North 1994). North (1990, p. 6) argued this framework reduced uncertainty by ‘establishing a stable (but not necessarily efficient) structure to human behaviour.’ This classification and argument

are important to this thesis. Each jurisdiction within the Australian and New Zealand public sectors has an institutional framework that shapes the behaviour of the relevant agencies in the operation of large ICT software projects. They arguably have the intent to provide a 'stable structure' in which all agencies and actors can operate and to ensure consistency. However, North's argument that stability does not equate to efficiency, is central to this thesis and the theoretical analysis. It is in fact complementary to the research questions.

It is therefore pertinent at this point to firstly briefly, albeit simplified, explain how a large ICT software project is typically structured within the Australian and New Zealand public sectors, and then how the institutional framework interacts and influences these projects. The projects can begin with an idea, perhaps a political initiative, or the need to replace aging systems. It may also be part of a 'portfolio' of planned work. From that moment they progressively add detail to provide all information for the project to be approved. It then begins its path of development and implementation, through to assessment of outcomes. Prior to, after, and at each and every stage in this process the institutional framework impacts. For example, jurisdictional strategies to build the required capability, and financial guidelines (see Figure 3-iii). The point being that the institutional framework has a major influence on the governance of these projects, they do not operate in splendid isolation, they are controlled. Therefore, back to North's argument, and the research questions, how effective is the governance via these institutional frameworks?

Figure 3-iii: How the institutional framework influences large ICT software projects



3.5 Theoretical concepts

Concepts have been described as the ‘building blocks of theory’ and are ‘the points around which research is conducted’ (Bryman 2015, p. 151), and as a result can make visible specific parts of theory (Maxwell 2004, p. 47). They provide a targeted focus in which to analyse theory. This is the intent of the use of theoretical concepts in this thesis.

To provide a focus, to analyse governance and in turn ‘make visible specific parts of theory’, 10 theoretical concepts have been identified. They relate to a series of practices and dilemmas in governance (Bevir 2011) and collectively provide an institutionalist perspective on governance. Each also is covered within the various institutional frameworks for large ICT software projects as each are important factors in the operation and management of these projects. The argument is that by focussing research on these 10 concepts an overall perspective of governance will be obtained, and in turn enable the theoretical analysis. These concepts, together with a description, and their relevance to the research is detailed in Table 3-3. Whilst the application of the following theoretical concepts in the research is covered in more detail in the research design chapter (Chapter 4), in short, they provide a means to target elite interview questions, and to categorise themes from the data collection. They are collectively complementary as means of researching governance and institutionalism.

Table 3-3: The theoretical concepts and why they are relevant

Theoretical concept	Description	Why is this of interest theoretically to this thesis?
Capability and capacity building	‘... activities that strengthen the knowledge, abilities, skills and behaviour of individuals, and improve institutional structures and processes, so that the organization can efficiently meet its goals in a sustainable way.’ (Ku & Yeun-Tseng 2011, p. 469)	Policies such as <i>Capability Frameworks</i> address strategies to build both capability and capacity for large ICT software projects. Has this been addressed institutionally?
Financial management	‘... the allocation of financial resources to support specific government activities and public purposes/tasks; as well as an expression both of current policy preferences of government and of past policy commitments. It is thus not simply an accounting process. Its importance lies in three major aspects: resource allocation; the satisfaction of social and political demands; and the securing of political and social support.’ (Cheung 2011, p. 270)	Financial guidelines for the funding of large ICT projects exist in all jurisdictions, they are strict. These directly influence how projects are forecasted, funded, and approved. Whilst financial management guidelines exist to control, do they actually assist the project in achieving good outcomes? How suitable are they for large ICT software projects?
Organisational learning	‘Organizational learning is the process by which an organization gains new knowledge about and responds to its environment, goals, and processes ... Learning happens when an organization discovers that its actions have led to an intended outcome or when the organization identifies and corrects a mismatch between intended and actual outcomes. In both conceptions, individuals perform the actions that lead to learning, but it is the organization that develops roles, a culture and structure, routines, and values to direct its members' decision making.’ (Smith 2007, pp. 643-644)	Large ICT projects have been happening for many decades, and from each there is learning for later projects. The institutional frameworks detail how these learnings are to be captured and applied. How are these learnings captured and applied institutionally to develop learning and aid adaptation for future projects?

Theoretical concept	Description	Why is this of interest theoretically to this thesis?
Stakeholder management	‘A stakeholder can be defined as any individual, social group, or actor who possesses a stake (e.g., interest, legal obligation, moral right) in the decisions or outcomes of an organization (typically firms, corporations, or governments). Thus, stakeholders are characterized by either being affected by or affecting the achievement of an organization's objectives. The stakeholder approach is based on the assumption that governance is more advantageous when it is guided by a principle of inclusiveness.’ (Manuel-Navarrete & Modvar 2007, p. 918)	Stakeholder management is key to a large ICT project which typically have many internal and external stakeholders. The institutional frameworks highlight this. How capably has stakeholder management been undertaken in these large ICT software projects?
Contract management	‘... taken to mean government ‘contracting out’ or ‘outsourcing’ with a for-profit firm, a non-profit organization, or another government to produce or deliver a service. Although the job of delivering services is contracted out, the services remain public, funded mainly by taxation, and decisions regarding their quantity, quality, distribution, and other characteristics are left to public decision makers ... central to this definition is the notion of public control, funding, and decision-making. The government is the principal, and the contractor is simply the agent.’ (Cohen & Eimicke 2011, pp. 237-238)	The engagement of one or more vendors is typical in a large ICT project. The institutional frameworks detail how contracts for their engagement are to be managed. An important part of literature is that whilst the services may be contracted out, responsibility remains with the public sector organisation/responsible officer. How capably has contract management been undertaken?
Accountability	Someone has been put in a position of responsibility, in the interests of someone else and is required to give an account of how they discharged their duties, and there is either reward or punishment in relation to the outcome. (Castiglione 2007, p. 44)	The responsibilities and accountabilities for delivery of the large ICT project are included in the institutional framework. How aware of these factors are the stakeholders in these projects?

Theoretical concept	Description	Why is this of interest theoretically to this thesis?
Methodologies	Project management methodologies ‘were developed to support project managers in achieving more predictable project success rates’ by providing a standardised or customised series of methods/processes to follow throughout the project. (Joslin & Muller 2015, pp. 1377-1378)	All jurisdictional institutional frameworks make reference to the use of methodologies in large projects, (e.g., PRINCE2). Whilst they aim to be a key factor in enabling project success, do they?
Leadership	‘While the traditional aims of leadership can be conceived of as control, production, and organizational goal attainment, we argue that the primary aims of leadership in governance are: (1) fostering collaboration, (2) building resilience and adaptive capacity, (3) resolving ethical concerns through dialogue, and (4) engaging citizens. These imperatives are not mutually exclusive, but rather mutually reinforcing interrelated ideas that outline the shape of leadership in contemporary governance.’ (Denhardt & Denhardt 2011, p. 422)	For large ICT software projects leadership can be applied to two aspects. Firstly, executive leadership in addressing factors to enable better outcomes for these projects, such as prioritising capability development. Secondly, leadership of the project itself. How has this leadership been applied?
Entrepreneurship	‘The entrepreneurial function implies the discovery, assessment, and exploitation of opportunities, in other words, new products, services or production processes; new strategies and organizational forms ... Entrepreneurial opportunities exist because different agents have differing ideas on the relative value of resources or when resources are turned from inputs into outputs.’ (Cuervo et al 2007, p. 2)	Has entrepreneurship been evidenced in the public sector to look at opportunities to ‘do things a different way’ to improve the likelihood of success in these large ICT projects? Has this been possible through factors such as ‘agency’ or does the structure constrain this?

Theoretical concept	Description	Why is this of interest theoretically to this thesis?
Agency	<p>Outcomes ‘cannot be explained solely by reference to structure ... they are the result of actions of strategically calculating subjects ... so agents matter. It is agents who interpret and negotiate constraints or opportunities. However, these agents are located within a structured context ... those contexts clearly affect the actor’s resources. Most significantly, the agents do not control either aspect of that structured context. At the same time, they do interpret that context and it is mediated through that interpretation that the structural context affects the strategic calculations of actors.’</p> <p>(Marsh & Smith 2000, pp. 5-7)</p>	<p>Do actors in these large ICT projects follow structure (e.g., the institutional framework, hierarchy) or do they make different choices (defined by factors such as the role and position, hence power)?</p>

3.6 Conclusion

The application of new institutionalism as a means of researching governance, with the additional inclusion of complementary theoretical concepts, therefore provides a suitable and relevant theoretical framework for this thesis. For example, the institutional governance of these large government ICT software projects, as part of the institutional framework should address the organisational building of capacity and capability (one of the theoretical concepts) to undertake the task. With the application of the research methods, the framework will enable this question to be asked and answered, and to identify how the actors in these projects interact with the institutional governance.

Chapter 4: Research design

4.1 Introduction

This chapter details the research design employed to answer the research question. It outlines the methodology followed, methods used to collect and then analyse the data, and how this aligns to the theoretical framework. The last section of the chapter addresses ethical considerations and research limitations.

4.2 Methodology

The research question asks what is the perceived effectiveness of governance for large government ICT software projects in the Australian and New Zealand public sectors? In addition, what if any, are the perceived challenges in adapting this governance? In the introductory chapter of this thesis there was a discussion on the difficulties of ‘measuring’ governance and public policy outcomes in general. However, it was also stated it was important, indeed critical for this thesis, that a measure is applied. Therefore, an appropriate research design to provide this measure was essential.

As a preface, the following epigram from the nineteenth century Danish theologian and philosopher Soren Kierkegaard (Anonymous 2014, p. 5) is used to highlight the intent of the research design:

‘Life is not a problem to be solved but a reality to be experienced.’

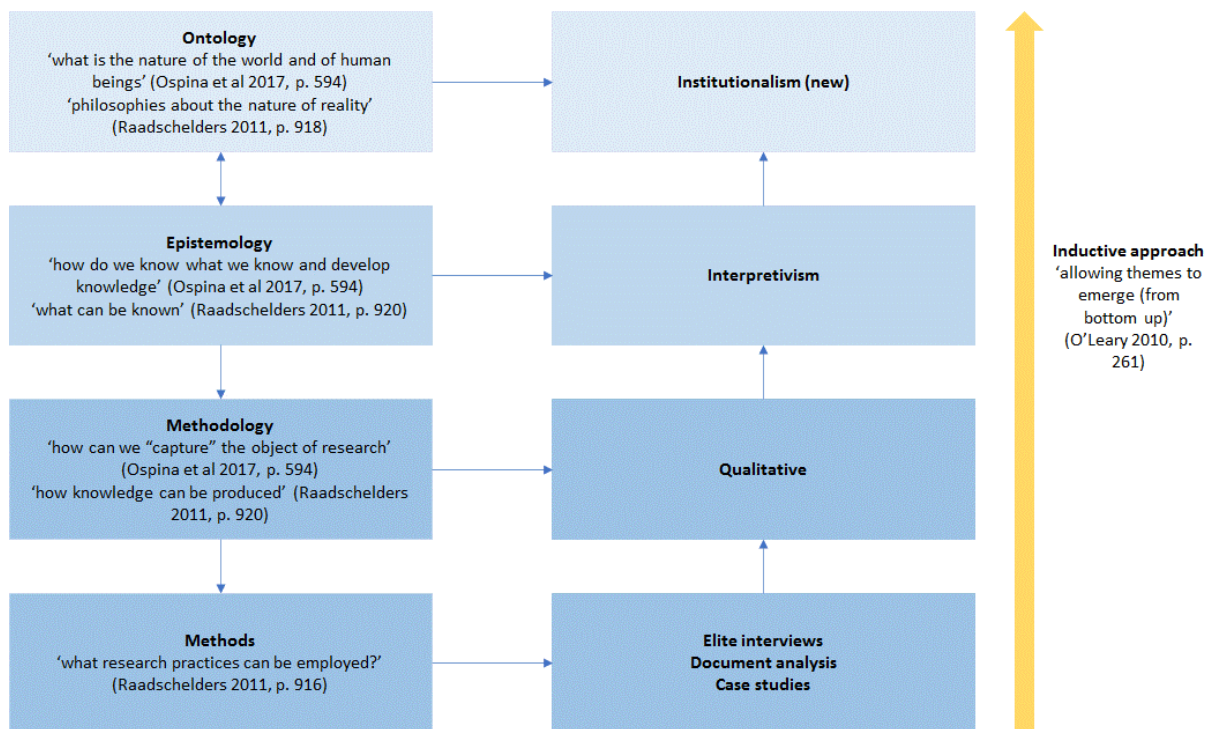
The research design of this thesis aims to look at the ‘reality’ of life in these projects from the actors involved in them, and through those very personal experiences, not try to ‘solve’ life in these projects but to highlight those experiences. The measure will be the perceptions of these actors, how has the governance helped them in their objectives?

This research employs a bottom-up interpretivist, inductive, qualitative approach to answer the research question (see Figure 4-i). The methodology aims to gather and analyse data about a specific factor, in this case governance, to ‘reach more general conclusions’ (Seawright & Collier 2010, p. 333). Alternatively, it can be viewed as a means of discovering themes by ‘allowing them to emerge from the data’ (O’Leary 2010, p. 261), or the interpretation of meanings from data assigned by a group of actors (Gerring 2012). In short, and related back

to the Kierkegaard epigram, the intent is to via an inductive bottom-up process interpret the reality of operating within the multifaceted institutional governance framework for large ICT software projects.

The use of a qualitative methodology in the study of institutions is argued to enable an analytical reflection on the ‘meaning and import’ of findings resulting from the perspectives of critical stakeholders impacted by the institutions. It is also argued to be extremely beneficial when studying ‘complex institutional phenomena such as leadership’ by bringing the perspectives of actors into the institutional realm (Chenail 2008). That is the intent of this thesis.

Figure 4-i: Methodological model

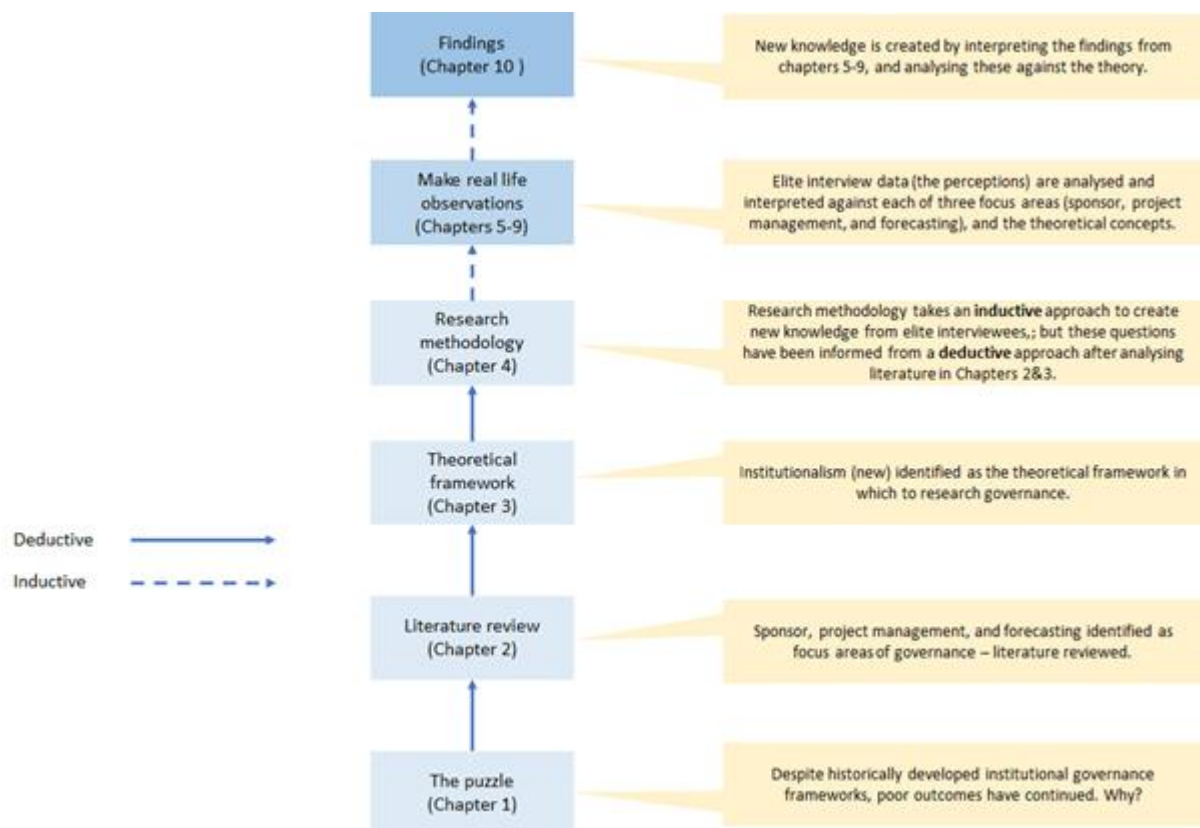


Model adapted from Furlong & Marsh (2010, p. 186) & Raadschelders (2011, p. 920).

However, prior to the inductive methodology detailed above, it is important to note that there was also an element of deductive analysis, and this occurs in chapters two (literature review) and three (theoretical framework). This dual deductive and inductive approach is summed up

by Gerring (2012, p. 173), who argued that a deductive approach is used to derive ‘indicators from the defining attributes of a concept or large descriptive argument’. Alternatively, Rosenthal (2018, p. 18) argued that a quantitative interpretive method requires existing theoretical concepts ‘in order to be able to develop standardized instruments, such as an appropriate questionnaire or observation system. We cannot prepare an appropriate list of questions if we are not familiar with the lifeworld to be studied ...’. Therefore, the inductive approach then begins with these ‘indicators’ or ‘concepts’ to question, observe, and interpret ‘patterns of data against’. To explain this, in relation to this thesis, in chapter two, three core focus areas for large ICT projects were analysed and core themes identified. In chapter three, the new institutionalism theory was also analysed, and key concepts identified. These identified ‘indicators’ then formed the basis for the interview questions, the later analysis of this data, and the findings in each chapter (displayed diagrammatically in Figure 4.ii).

Figure 4-ii: Deductive approach



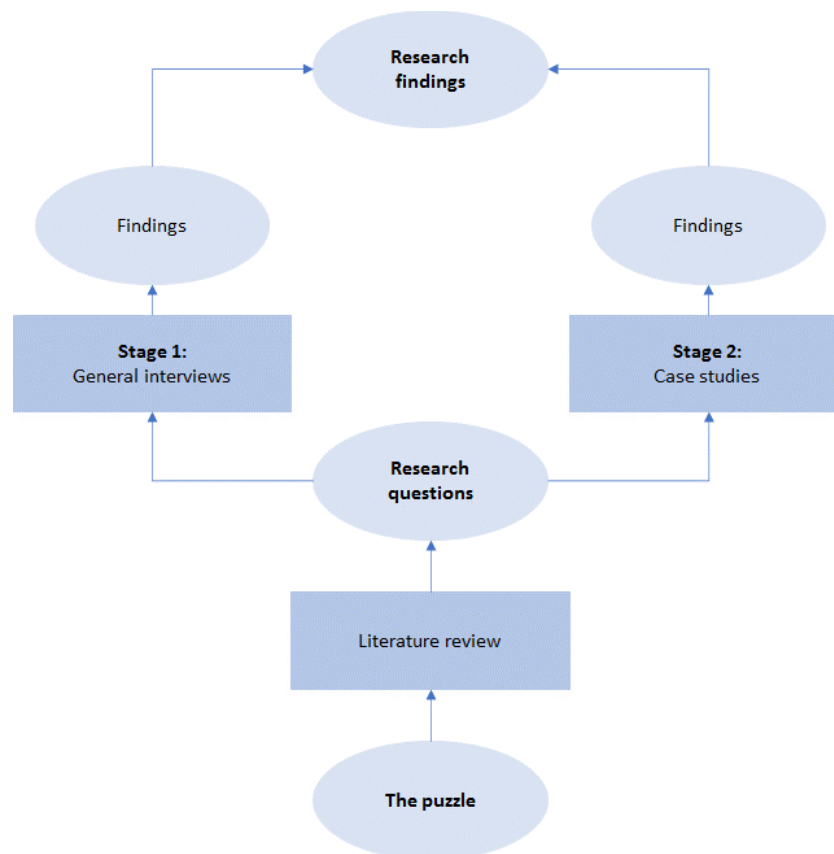
In summary the choice of a qualitative interpretive research methodology was driven by the research questions (Chapter 1) and the identified means of measurement to answer these questions (Chapter 3). This is linked to the basic philosophical difference between a qualitative interpretive method and a quantitative positivist method. A quantitative positivist approach is argued to suit research that seeks to ‘prove’ something (Leitch et al 2009; Creswell 2012, pp.15-18), or when it seeks to use ‘numbers and statistical measures’ (King et al 1994, p. 3). A qualitative interpretivist approach is argued to suit research that seeks to ‘discover’ something (Leitch et al 2009; Creswell 2012, pp.15-18). This thesis does not have a hypothesis that it is seeking to either prove or disprove, nor does it utilise any numerical or statistical measure. It starts with a puzzle, and to answer this puzzle two research questions were identified. Then in Chapter 3 the measure by which to answer the questions was documented. This is not via a quantifiable measure with a focus on statistics, nor does it seek to determine a causal link (Skarbek 2020). This thesis is exploratory as whilst there is a puzzle, it does not know the answer, and the use of a qualitative interpretive design is therefore argued to more suitable (Morse 1991). In addition, it is argued that the use of a qualitative interpretive approach is more suitable than a quantitative approach when the objects of research are not single measurable variables, but instead are to be studied ‘in their complexity and entirety in their everyday context’, and where the goal is not about testing what is known, but instead to ‘discover the new’ (Flick 2020, p. 5). This research is answering the unknown from the perspectives of a large number of elite interviewees, and from that data the stories are interpreted and analysed, and the research questions answered. In addition, and linked to an earlier argument, it is also argued that the use of qualitative methodology supports research into institutionalism — the theoretical framework of this thesis — claims as it highlights patterns of behaviours and action to institutional patterns (Parsons 2007, pp. 91-92). For example, how does a particular guideline in the institutional framework impact on the elite and how effective do they perceive this impact to be, and why?

Finally, it is also worth noting that whilst quantitative and qualitative traditions can sometimes be seen to be ‘at war’ in academia, King et al (1994, p. 3) argue this not the case as it simply comes down to a choice of the differing style and techniques required to answer the research question, or alternatively a difference in personal preference for a type of epistemology and methodology (Becker 1996). Hence, whilst there are many methods available in social and political science research, the argument in this chapter is that the research method undertaken is a suitable match to provide answers to the research questions.

4.3 Research roadmap

Figure 4-ii is a diagrammatic representation of the research roadmap. From the initial puzzle a literature review was undertaken, and from that the research questions formulated. A two-stage analysis was undertaken to provide the data to answer the questions. Stage 1 was a general collection and interpretive analysis of data related to the governance of large ICT software projects across the Australian and New Zealand public sectors. A series of extensive interviews were conducted with key stakeholders and selected experts with experiential involvement in large ICT software projects. Stage 2 however was case study based, related to two specific large ICT software projects. From the interpretation of this data findings are made for each stage. In the final section the findings from each stage are compared with each other, an overall narrative emerges, various implications identified, and a conclusion made. This roadmap is complementary to the methodology detailed in the previous section and highlights the qualitative, interpretive, inductive bottom-up approach.

Figure 4-iii: Research roadmap

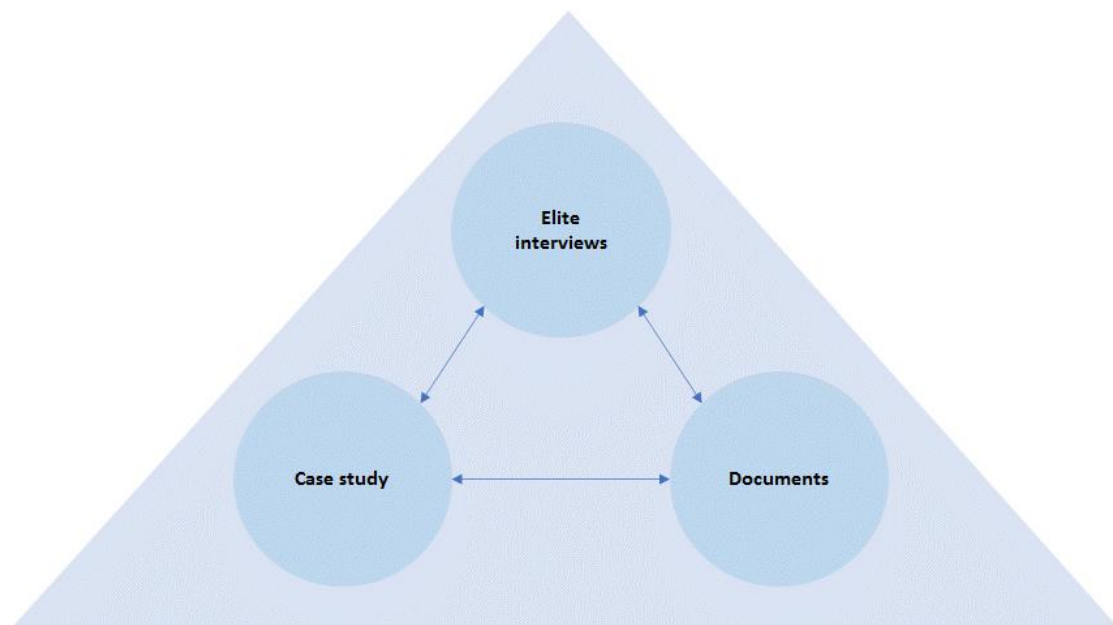


4.4 Qualitative data collection methods

4.4.1 Triangulation of data

There were three methods of qualitative data collection utilised in this research: elite interviews, case studies, and documents (see Figure 4-iii), in effect an adaptation of the principle of triangulation of data (Denzin, 1970). Whilst they are three distinct methods of data collection, there is an interrelationship (Bowen 2009), as triangulation can underpin knowledge by gaining additional knowledge (Flick 2004). Triangulation can be thought of as collecting data using differing methods, possibly at different phases of a research project, and the results ‘can be linked, compared, and used as complementary information’ (Flick 2018, p. 532). This is exactly the aim of the triangulation of data methods applied in this thesis at different stages. For example, a review of documentation influenced elite interview questions. Elite interview data from Stage 1 can be compared to Stage 2 elite interviews, with various documents complementing this data.

Figure 4-iv: Triangulation of methods



4.4.2 Elite interviews

Elite interviews were the primary source of data. Dexter (2006, p. 19) argues that elite interviews target a specific social group, consisting of ‘influential’ or ‘well informed’ representatives, or those with some special knowledge garnered by being part of that group (Bottomore 1993). In the case of this thesis that group refers to those actors who were and or still are important stakeholders in the management of large ICT software projects across the Australian and New Zealand public sectors. That means the interest is not in the ‘person’, rather their capacity as an elite in the group, and the interest is not as a single case study, but rather what they add as representatives of this elite group (Flick 2002). The elites will provide the interpretive knowledge that is critical to this thesis. Interpretive knowledge entails ‘the points of views and interpretations’ of the actors in these groups; their view on the ‘reality’ (Dexter 2006, p. 18; Bogner et al 2018, pp. 658-659). Therefore, this thesis is not seeking ‘right’ or ‘wrong’ answers, as elite interviews by their nature do not seek to establish a positivist ‘truth’, they assist in interpreting a situation from the narratives (Richards 1996, p. 200).

The interviews are seeking to elicit from the elite group their personal interpretation on the effectiveness of governance in these large ICT software projects. This is based on their very personal experience in these projects and is information not available elsewhere. It is the data from the interviews, and the interpretation of that, that provides the critical data to answer the research question. This aligns to the Bevir and Rhodes (2010) research that argues a socio-cultural or ethnographic approach through the stories of relevant actors can provide a narrative, identify traditions, and highlight dilemmas. That is, the perspective provided is one based on context driven personal experience. In the case of this thesis, what is the reality of working with the institutional governance frameworks? Data that Bevir and Rhodes argue is rich and relevant.

4.4.2.1 Participant identification

Stage 1 (General) interview participants were identified due to their involvement as key actors in large government ICT software projects, that is a ‘group of people’ that can answer the research question (Nikander 2012, p. 406). It was a key aim of the research to ensure that these actors were identified across jurisdictions, agencies, sectors, with an important stake or role in large government ICT software projects, and that this was not restricted to ICT professionals, or to make the research ICT centric.

A total of 57 interviews for Stage 1 were completed. This number was effective in reaching the saturation point, one large enough ‘to allow for discursive repetition and recurrent patterns of argumentation to emerge’ for further analysis (ibid). A similar process was undertaken for the case study interview participant identification, excepting, the targets were direct stakeholders in the case study project. The total number and category of participants interviewed for the case studies was 16 (see Table 4-1). Refer to Appendices A, B and C for a full listing of participants.

Table 4-1: Summary of elite interview participants

	Executive	CIO	Assurance	Snr Project Officer	Politician	Consultant	Academia	Union	Datacom	Talent2	Total
Stage 1											
NZ	3	5	3	4							15
APS	2	2	2	2							8
NSW	2		3		1	1					7
VIC		3	3								6
NT	4		6	2							12
TAS	1		1	1							3
Anonymised	1										1
Private Sector		1		1			3				5
<i>Total</i>	<i>13</i>	<i>11</i>	<i>18</i>	<i>10</i>	<i>1</i>	<i>1</i>	<i>3</i>				<i>57</i>
Stage 2											
Novopay	2	1		3				1	1	2	10
EPDP	1		2	5							8
<i>Total</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>8</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>18</i>
Total	16	12	20	18	1	1	3	1	1	2	75

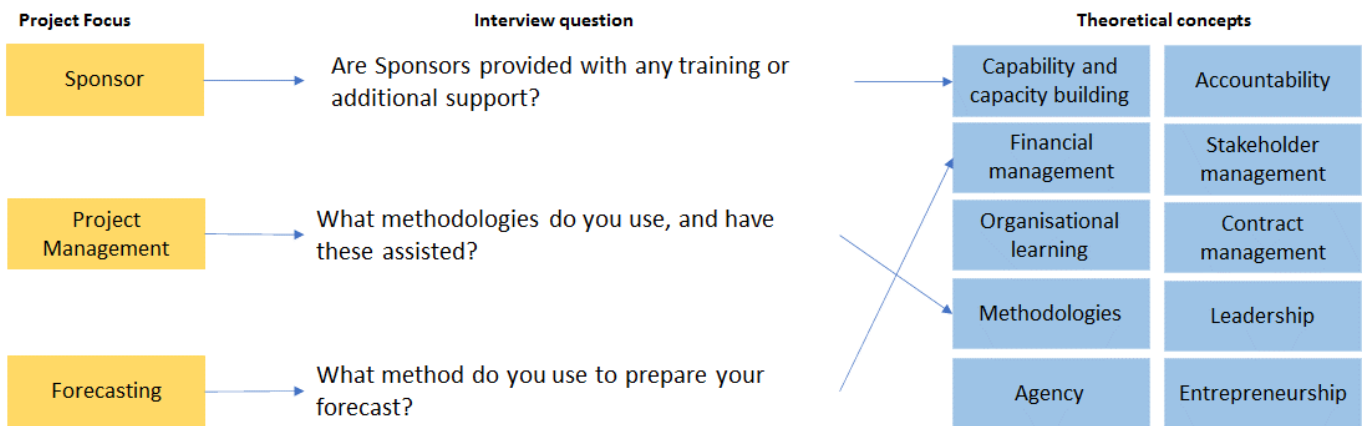
4.4.2.2 Interview questions

4.4.2.2.1 Stage 1: General interviews — semi-structured

Interview questions were open-ended, semi-structured, and aligned the project focus roles/disciplines — sponsor, project management, and forecasting — and to the theoretical concepts identified in the theoretical framework chapter, such as financial management, and capability and capacity building (see Figure 4-iv). Each participant then provided their personal perspective. The semi-structured approach provided flexibility during the interview. Whilst the interview may have started with a defined question, the conversation naturally flowed and allowed for additional information and perspectives to be provided, and some great quotes to be captured. This is an argued advantage of the semi-structured approach as the interviewer ‘is able to come away with all the data intended but also interesting and unexpected data that emerges’ (O’Leary 2010, p. 195). However, whilst semi-structured

interviews enabled this flexibility, they also provided the structure to provide the consistency and commonality in questioning required to aid the later analysis and thematic coding of the data (Flick 2002). Refer to Appendix D for details of the interview questions.

Figure 4-v: Aligning questions to theoretical concepts



4.4.2.2.2 Stage 2: Case studies — semi-structured

As with the Stage 1, semi-structured interviews with questions targeted to the research focus roles/disciplines and theoretical concepts were used. The difference with Stage 1 interviews was that instead of the questions seeking general perspectives based on the participants past experiences in various projects, the Stage 2 questions specifically related to the case study project. The intent was to gain, from the interview participants, a personal perspective based on their role as an actor in the project.

4.4.2.3 Interview transcripts

Where the participant agreed to having the interview recorded a full transcript of the interview was produced. The advantage of which was that each response was framed by the question and a full and accurate recount of the interaction between the interviewee and the interviewer was documented. Another advantage of this approach was to address a concern raised by Roulston (2013, pp. 297-312) who argued ‘transcription practices that focus only on the topic of talk invariably omit features of talk that have important implications for how talk is understood’. To address this, the transcriptions included utterances such as ‘um’, pauses, and

profanities. A good example of this is in the interview with a Snr Executive (Person X, NZ) who was asked about what value an imposed assurance process had added. The reply was a raucous outburst of laughter. That non-verbal response helped interpret and situate that interaction.

The interviews not recorded were summarised as key themes, with some verbatim quotes. These transcripts whilst providing details of the key interaction, were not of the same detail as the transcripts from the recorded interviews.

4.4.3 Case studies

4.4.3.1 Why the use of case studies and a comparative approach?

There is not consensus on a definition of a case study (Kaarbo & Beasley 1999; Levy 2008), however Gerring (2017, p. 8) defines it as ‘an intensive study of a single case or a small number of cases....’. George and Bennett (2005, p.5 & p. 17) define it as ‘the detailed examination of an aspect of an historical episode ...’. However, and albeit aligned to these earlier definitions, the argument that case studies are a method of providing a ‘structured, focussed comparison’ (George 1979) is the primary reason for the use of case studies in this thesis¹³.

A comparative case study approach was adopted for Stage 2 of the thesis. Through the use of two case studies, it is the intent to provide a ‘systematic comparison’ (Kaarbo & Beasley 1999, p. 377) between the two. These case studies are specific large ICT software projects within the Australian and New Zealand public sectors. The case studies will be an intensive study and observation of each project. This allows for the discovery of ‘contrasts, similarities, or patterns’ (Campbell 2010, p. 175-176) across the cases/projects; this would not have been possible using a single case.

There is a final reason why case studies and the comparative approach has been utilised in this thesis. It is not just the intent to compare the two case studies with each other, it is also the intent to compare the Stage 2 case study findings, with the earlier Stage 1 findings. Stage 1

¹³ It should be noted there is much literature on case studies in research including the works of Kathleen Eisenhardt and Robert K. Yin. However, my perspective with both is that they have a preference for using case studies in positivist research; a view supported by Piekkari & Welch (2018, pp. 345-358), and Blatter and Haverland (2014). The authors cited above arguably are more interpretivist in their thinking and supportive of qualitative research in the social sciences.

identifies a series of general findings on the governance of large ICT software projects. Stage 2 is a detailed examination of two specific large ICT software projects. To provide the structure to enable the comparison between the case studies and with Stage 1, an identical interview process was applied. Did the findings from Stage 1 match those in the case study findings, if not, what could be the explanation? The use of the comparative case study approach in this manner is argued to provide additional validity and rigour to the research (Eisenhardt 1989).

4.4.3.2 Case study selection (and the comparative approach)

The case selection needed to have control to enable a systematic investigation (Kaarbo & Beasley 1999), that is, the case selection was not random but instead deliberately selected to enable a valid comparison.

The research questions seek to assess the effectiveness of the institutional governance of large ICT software projects in the Australian and New Zealand public sectors. Therefore, it is argued an appropriate means of comparing this was to identify two similar projects that have differing outcomes and use this comparison to identify the reasons why. This logic follows the principle of Mill's 'method of difference' or the related 'most similar systems design' logic that differences — in this case project outcomes — can be explained by comparing similar cases with varying outcomes and aid in the identification of the reason why it is so (Meckstroth 1975; Van Era 1997; Bleijenbergh 2010).

The chosen case study projects have many similarities, but one major difference. Both are large ICT software projects that operated within the New Zealand public sector and therefore governed under the same jurisdictional institutional framework. Both are large payroll projects. Both targeted the delivery of the payroll solution to the same customer base, namely the staff within the New Zealand schools' system¹⁴. Therefore, both would have been presented with similar environmental and stakeholder management issues. The two also have a direct relationship, as one resulted due to a need to address weaknesses in the other. The difference is that given all of these similarities, one has been classified publicly as a 'disaster'

¹⁴ Person U (NZ) was a past Snr Executive in the NZ Ministry of Education (MoE). They stated that the MoE is primarily responsible for schools' policy and funding, with the schools themselves being largely autonomous entities. Each school has a *School Board of Trustees* who in effect employ the principal and teachers. Each school determines their own staffing based on available funding. However, the MoE retained responsibility for the payroll of the schools' staff. The two case studies relate to the provision of that payroll service.

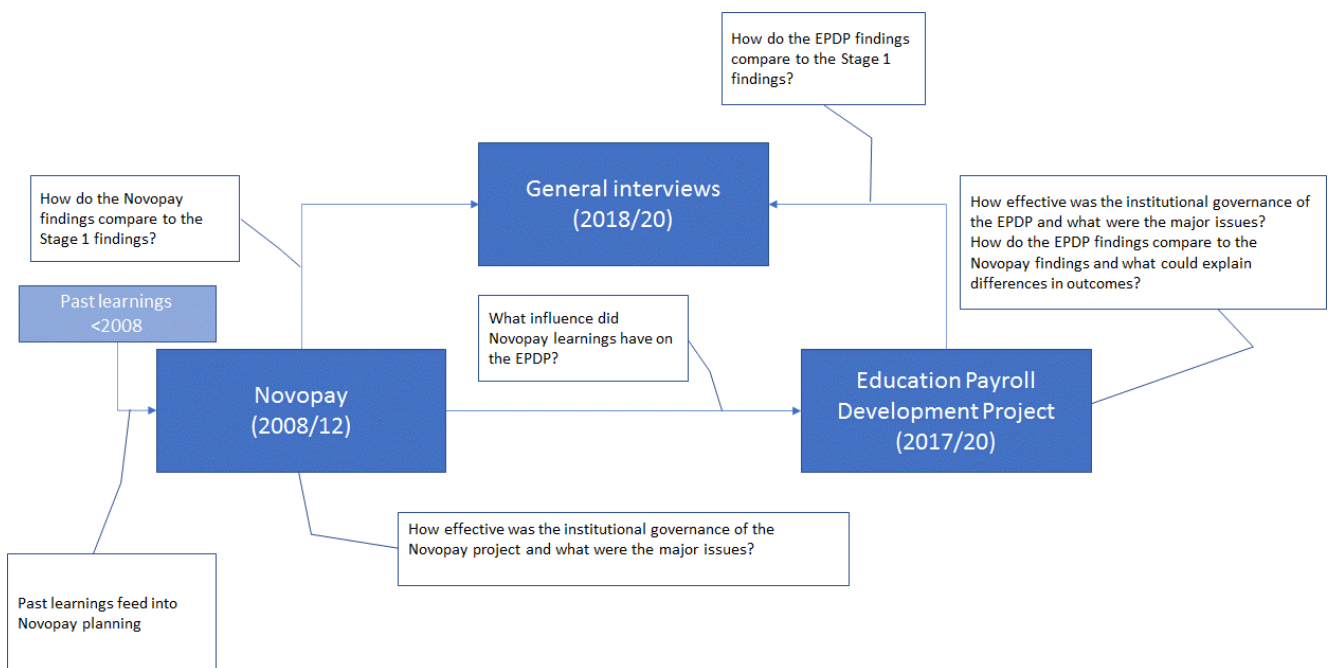
that led to a national apology. The other is being cited as an ‘exemplar’ for its successes. Why are the two project outcomes so different? What explains this?

The two case study projects are:

- The New Zealand Ministry of Education’s (MoE) *Novopay* payroll project (from 2008 to 2012): this is the project deemed to be an abject failure.
- The New Zealand Education Payroll Limited’s (EPL) *Education Payroll Development Program* (EPDP) Program (from 2017 to 2020): this project is cited as an ‘exemplar’.

The comparative relationship between each of the case study findings and with the Stage 1 general interview findings is diagrammatically displayed in Figure 4-v.

Figure 4-vi: Case study comparative relationship



4.4.3.3 Case Study 1: Novopay

4.4.3.3.1 Initiation

The MoE's Education Service Payroll is cited (MoE 2012a, p. 7) as the largest payroll in NZ, paying NZ\$3.4b to 120,000 plus employees across 2,500 schools. The origins of what was to become the Novopay project began in September 2004 when the MoE issued an RFP¹⁵ as an initial step in replacing the then current solution. However, with technology upgrades a claimed urgency was removed and the MoE in 2006/7 changed approach to a BPO¹⁶ model, argued on claimed benefits. The approach was approved by Cabinet in November 2007 (MoE 2012b). It was at this stage that the forecasted cost was set. Talent2 was the preferred BPO supplier¹⁷, with the contract negotiations completed in May 2008 (MoE 2012b).

4.4.3.3.2 Commencement to go-live

The project was named Novopay and officially commenced in October 2008. A staged implementation from May 2010 was planned (MoE 2012a, p. 16; MoE 2012b). In November 2008 it was reported Talent2 were on schedule and within budget (MoE 2012c, Meeting #88). One-month later Talent2 were reporting initial schedule slippages (ibid, Meeting #89). The Project Board meeting minutes from August 2009 (MoE 2012c, Meeting #97) through to December 2009 (ibid, Meeting #100) highlighted a series of escalating issues, new and old, that impacted on project deliverables and schedules. However, it was reported in January 2010 that the first go-live was planned for the first week of **July 2010** (MoE 2012c, Meeting #101). Whilst the Project Board was reporting this, an independent external review was reporting 'all indications are that the original transition dates are not achievable' (Extrinsic 2010, p. ii.). On 1 March 2010 (MoE 2012c, Special Board Meeting) a revised go-live date of **18 October 2010** was proposed. In May 2010, the go-live date was approved to move to no later than **30 June 2011** (MoE 2012a, p. 8), this also included a change from a staged

¹⁵ **Request For Proposal (RFP)**: 'a formal means of seeking proposals from the market for goods or services where the public entity is open to supplier innovation – that is, where the outputs and outcomes are important, rather than the process the supplier follows to deliver them': Controller and Auditor-General, NZ Government, viewed 9 July 2020, <https://oag.parliament.nz/2008/procurement-guide/glossary>

¹⁶ **Business Process Outsourcing (BPO)**: 'an overarching term for the outsourcing of a specific business process task, such as payroll'; CIO 2017, *What is outsourcing? Definitions, best practices, challenges and advice*, 7 November, viewed 3 March 2020, <https://www.cio.com/article/2439495/outsourcing-outsourcing-definition-and-solutions.html>

¹⁷ The software solution/package to be provided and managed by Talent2 to meet the requirement was based on an ALESCO application built in Oracle Forms and PL/SQL, using an Oracle database (Deloitte 2013, pp. 18-19).

implementation to a big-bang approach. By February 2012 there were further slippages, and the project plan was again re-baselined, with a revised go-live date of **14 August 2012** approved by Cabinet. This in effect signified the death of the any fall-back options (Jack & Wevers 2013, p. 42).

In mid-August 2012 with a substantial number of defects remaining, and an awareness of call centre readiness issues, the Project Board granted conditional agreement for the go-live (MoE 2012h, Issue 12). On 15 August 2012 all Project Board members, including the State Services Commission, independents, and PwC participants supported a go-live decision (Jack & Wevers 2013, p. 49). The MoE Secretary, Lesley Longstone and the Project Sponsor, Anne Jackson, on 17 August 2012 gave final approval for a 20 August 2012 go-live despite testing cycles not being completed (ibid) and indicated outstanding defects would be treated post-go-live and any unidentified defects would be managed as business-as-usual issues (MoE 2012h, Issue 13). As a result, Novopay was officially live on 20 August 2012 (MoE 2012b).

4.4.3.3 The go-live experience from August 2012

Shortly after go-live there were 3,200 unresolved issues prior to the first pay-run (Jack & Wevers 2013, p. 50). After the first payroll there were 5,000 underpayments, 700 overpayments, some of which were substantial (Jack & Wevers 2013, p. 49). Data entry was blamed, with Talent2 saying there was no ‘systemic failure’ (ibid). Problems continued into future payroll runs (MoE 2012h, Issue 17). The Principal’s Federation stated they could not think of a worse year in New Zealand education where things have gone so badly (Drummond 2012).

4.4.3.3.4 The consequences and fallout

In January 2013, the *National Business Review* quoted the Minister, Steven Joyce, as saying steps were being taken to address the outstanding issues. Joyce was also quoted as saying that whilst the problems were unacceptable, warned they would continue. The Minister also announced the Terms of Reference for a *Ministerial Inquiry into the Novopay Project* (National Business Review 2013). The *Ministerial Inquiry* (Jack & Wevers 2013) was released in late June 2013, the findings were many and arguably identified a systemic lack of capability within the MoE to undertake Novopay. The MoE Secretary, Deputy Secretary/Sponsor, and CIO all resigned.

The remediation efforts continued (and still are to this day). In July 2014 Talent2 paid a reported NZ\$22m, to remove themselves from the payroll (Cowan 2014). Aligned to this outcome, the formation of the Education Payroll Limited (EPL) organisation was announced by the Minister. This enabled the transfer of ownership and management of the schools' payroll service from Talent2 to this newly formed government owned company. The transition was completed on 17 October 2014 (EPL 2020a). That reflected the total failure of Novopay to implement the BPO model that was the centrepiece for the business case.

4.4.3.3.5 Novopay timeline

The table below (see Table 4-2) outlines the timeline for key milestones throughout the Novopay timeline.

Table 4-2: Novopay timeline

Date	Milestones
30-Sep-04	MoE issues RFP for new Schools' payroll system
28-Feb-05	MoE selects Synergy/Talent2 consortium as preferred vendor
2-May-05	Cabinet approves Synergy/Talent2 approach
31-Dec-06	MoE considers changes (during 2006) approach to a full BPO approach
11-Jun-07	MoE agree to change to a BPO approach
8-Jul-07	Initial Cabinet approval for BPO approach
5-Sep-07	ROI for BPO approach issued
7-Nov-07	Cabinet approves MoE Business Case with BPO as the preferred option
12-Dec-07	RFP for BPO services issues (to shortlisted firms)
22-Apr-08	Talent2 chosen as preferred vendor from the RFP
11-Aug-08	Minister (Carter) signs off on the BPO/Talent2 agreement
6-Oct-08	Official start date of Novopay
31-May-10	Go-Live moved to 30 June 2011
12-Nov-11	Go-Live date moved to no later than 3 July 2012
31-May-12	Go-Live moved to August 2012
17-Aug-12	MoE approval for Go-Live
20-Aug-12	Go-Live

Date	Milestones
19-Dec-12	MoE Secretary (Lesley Longstone) resigns
9-Feb-13	Peter Hughes starts at MoE - begins remediation plan and review
19-Mar-13	Deloitte Novopay Technical Review completed
11-Jun-13	MoE Deputy Secretary (Anne Jackson) resigns
30-Jun-13	Ministerial Inquiry into Novopay report released
31-Jul-14	Education Payroll Limited (EPL) established to take over Schools payroll services from Talent 2

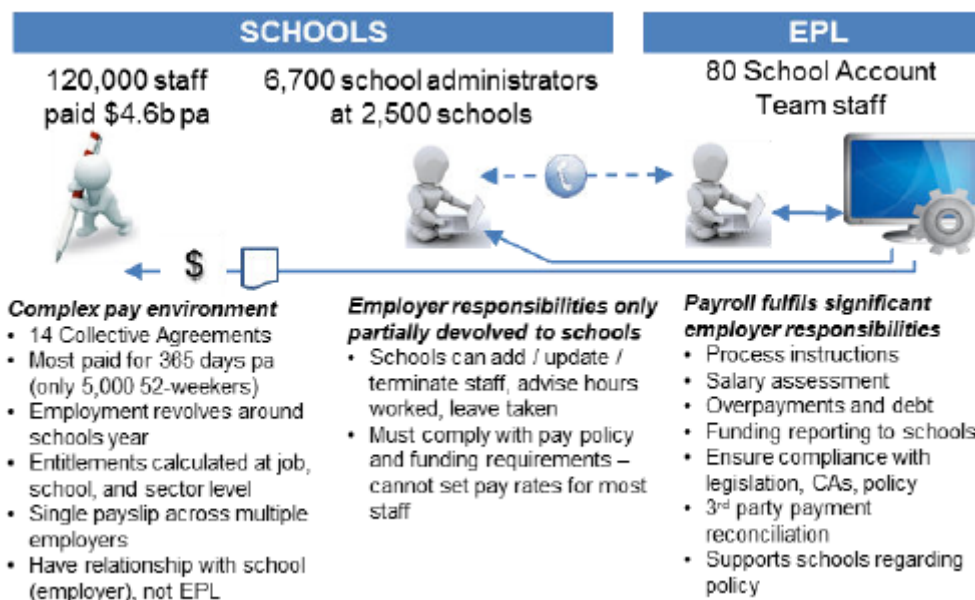
4.4.3.4 Case study 2: The Education Payroll Development Program (EPDP)

4.4.3.4.1 Education Payroll Limited

As detailed above one of the outcomes of the Novopay, following the departure of Talent2, was the formation in 2014 (EPL 2020a) of a separate crown entity called the Education Payroll Limited (EPL). With this change the MoE purchases payroll services from the EPL (EPL 2016, p. 8) instead of the previous contractual arrangement with Talent2.

The schools' payroll is described as a non-standard payroll, where employer responsibilities are only partially devolved to schools. Hence the EPL provides additional services, including 'compliance monitoring and enforcement, salary assessment, overpayment debt recovery, school payroll support and sector communications, payroll data and reporting, and management of banking staffing and staffing funding for schools' (EPL 2016, p. 8). This is detailed diagrammatically in Figure 4-vi.

Figure 4-vii: The schools' payroll and the EPL



4.4.3.4.2 The Novopay legacy and the origins of the EPDP

After the 2012 Novopay go-live the underlying ‘standard’ COTS¹⁸ payroll system was in fact 60 per cent customised (EPL 2016, p. 8). This together with the many outstanding system issues resulted in the EPL spending in excess of NZ\$40m on continual and significant improvements (EPL 2016, p. 8). However, despite this and amongst other major issues, the core payroll infrastructure was not sustainable, and the critical on-line component was proving impossible to maintain and enhance, and would be unsupportable from December 2019 (EPL 2016, p. 9).

As a result of these concerns, in late 2015 Cabinet requested that the EPL advise how they would move the schools’ payroll to a ‘steady state including achieving cost efficiencies and long-term sustainability’ (EPL 2016, p. 20). In February 2016 planning commenced and culminated in a *Detailed Business Case* (DBC) being finalised in October 2016 (EPL 2016, pp. 22-25). The preferred option was to provide a new digital on-line interface/solution for

¹⁸ Commercial Off-The-Shelf (COTS)

interaction between the schools and the EPL, in effect to replace the existing Novopay on-line component¹⁹.

The program of work was estimated to cost NZ\$64m over 10 years. The DBC also highlighted three key considerations in both the planning and future management of the project. Firstly, a series of work packages would drive the program of work (EPL 2016, p. 123). Secondly, there would be a heavy emphasis on implementing effective change management processes (EPL 2016, pp. 149-157). Thirdly, there was no appetite at any level for a repeat of the Novopay outcomes (EPL 2016, p. 15, pp. 92-96 & p. 157).

4.4.3.4.3 EPDP initiation

Following EPDP approval the EPL concentrated on mobilisation in preparation for commencement of tasks; to hit the ground running (EPL 2017, p. 5). The project implementation was due to be finalised by December 2019. The program also changed the delivery approach to a Scaled Agile Frameworks (SAFe)²⁰ methodology (EPL 2017, p. 15). It was successfully argued that by doing so the program would benefit from accelerated delivery, progressive and staged delivery of products and benefits, improved quality practices, reduced risk and greater flexibility to accommodate changing priorities and requirements.

4.4.3.4.4 Current status

As of September 2020, the program deliverables had not been finalised as per the DBC forecasts. However, that does not necessarily equate to the program being ‘unsuccessful’. All available documentation, and lack of any negative media publicity, indicated that the program had performed extremely well. An independent *Investment Review Report* (IRR) by NZ Treasury in July 2020 stated (The Treasury 2020, p. 3):

‘The Review Team finds that the EdPay programme should be commended as it has effectively delivered capability to the Education Sector, in-line with the Business Case

¹⁹ The underlying Alesco (Oracle) database was to remain; the focus was on providing a new on-line interface to this solution.

²⁰ ‘SAFe is designed to help businesses continuously and more efficiently deliver value on a regular and predictable schedule. It provides a knowledge base of proven, integrated principles and practices to support enterprise agility.’: Scaled Agile, viewed 14 September 2020, <https://www.scaledagile.com/enterprise-solutions/what-is-safe/>

... as a result, the Review Team sees that EdPay has delivered the primary intent of the Business Case ...’

This is quite different reading to that in the Novopay *Ministerial Inquiry* (Jack & Wevers 2013) which arguably found nothing to praise. The IRR also found that the use of the Agile delivery method had been beneficial (The Treasury 2020, p. 9) and that the EPL had successfully enabled mature in-house Agile capacity and capability to finalise the project and to provide future support (The Treasury 2020, p. 10).

4.4.3.4.1 EPDP timeline

The table below (see Table 4-3) outlines the timeline for key milestones throughout the EPDP timeline.

Table 4-3: EPDP timeline

Date	Milestones
2014	The EPL established
Late-15	Cabinet request that the EPL move the schools’ payroll to a ‘steady state’
Feb-16	<i>Indicative Business Case</i> (IBC) prepared, after which Cabinet requested a <i>Detailed Business Case</i> (DBC) be prepared
Oct-16	DBC prepared – preferred option to provide new digital on-line interface (to replace Novopay on-line)
Late-16	DBC approved
Late-16 to 17	EPL concentrate on mobilisation in preparation
Oct-17	EPDP <i>Program Initiation Document</i> (PID) approved – changed approach to Agile
Nov-17	Commenced delivery of products
Dec-19	Original planned completion date
Sep-20	60% of functionality delivered

4.4.4 Documents

The third data collection method is the identification and analysis of relevant documents. Documents were identified and collected, with the text then reviewed, interrogated, and analysed (O’Leary 2010, p. 223) to be the third source of data for this thesis. This

documentation was used as a means to complement and interpret data obtained via the interview and case study processes and to build on data from the literature review.

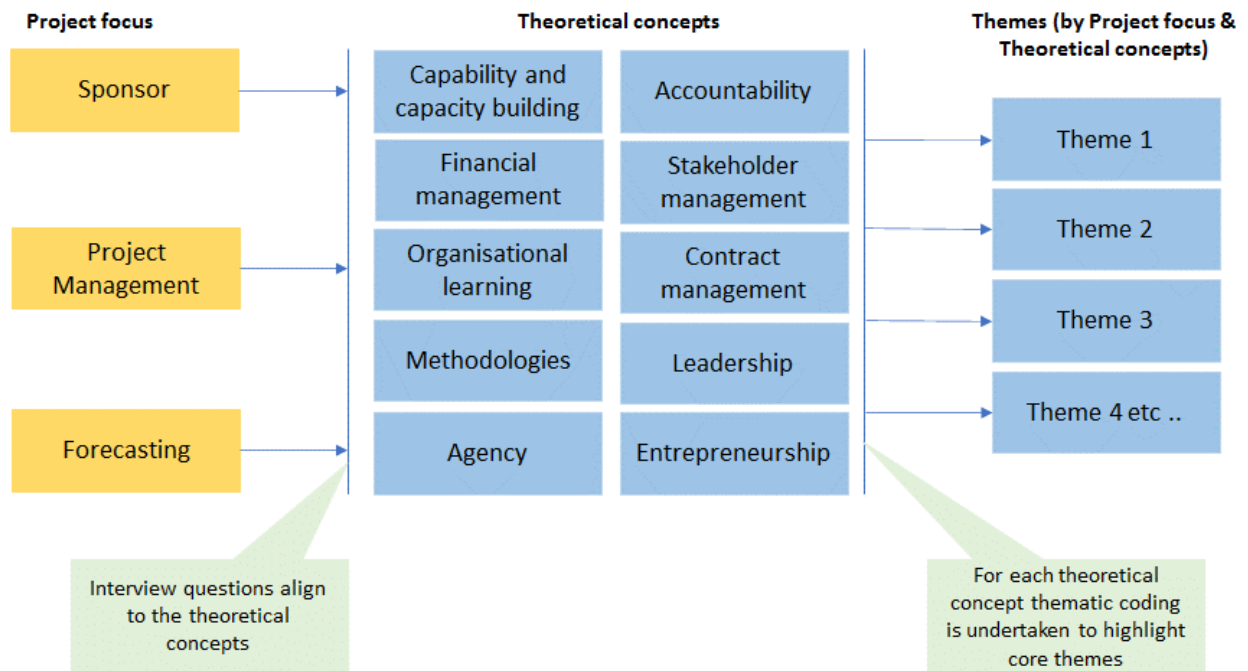
4.5 Qualitative data analysis methods

4.5.1 Thematic analysis (interview data)

Thematic analysis was utilised to interpret interview data. Thematic analysis is defined (Braun & Clarke 2012, p. 57) as ‘a method for systematically identifying, organising, and offering insight into patterns of meanings (themes) across a data set’. Applying this definition to this thesis and the intent of the research design, the analysis is not focussed on identifying what is unique within a single interview, but a means of identifying what is common across all interviews for the topics under discussion. It is about ‘making sense of those commonalities’ (ibid), and to identify themes in the data (Castleberry & Nolen 2018). Thematic analysis is also argued to be complementary to the use of open-ended semi-structured interviews. This is because the method enables the identification of themes across a wide variety of topics and subjects (ibid).

An identical process was used for both Stage 1 and Stage 2 elite interviews. A ‘pragmatic’ (Aronson 1995) simple hierarchy of thematic analysis was employed (see Figure 4-vi). For each of the three research focus areas — sponsor, project management, and forecasting — interview questions and discussion focussed on the theoretical concepts. Interviews were then transcribed and entered into NVivo where they were reviewed and thematically coded due to identified common ‘patterns’ (Aronson 1995). This resulted in the identification of the core themes for each theoretical concept. From these findings an overall story on the institutional governance of large ICT software projects in the sectors emerged.

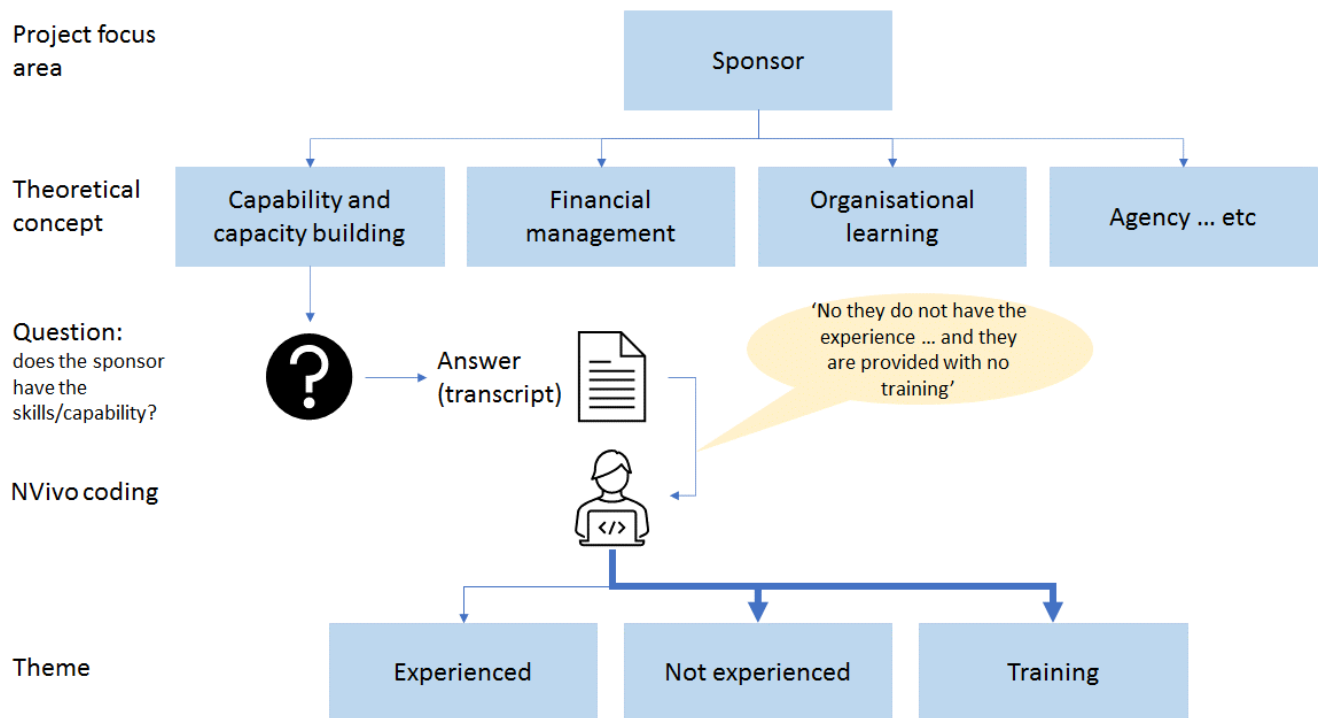
Figure 4-viii: Thematic analysis hierarchy



To provide a practical example of this, all elite interviewees were asked a similar question about the sponsor, that was, ‘do you believe that sponsors have the required skills/capability?’ This question was specific to the ‘sponsor’ project focus area. The question was also specifically addressing the ‘capability and capacity building’ theoretical concept; does the sponsor have the skills, the capability, to undertake the role?

On completion of the interview a full interview transcript was produced and uploaded into NVivo. From there it was coded according to the hierarchy detailed above. The response to the question ‘does the sponsor have the skills?’ was reviewed and from that response parts of the transcript were coded according to themes that emerged. If the response was ‘No they do not have experience’ then that text was flagged with a thematic code of ‘Not experienced’. Given the semi-structured nature of the interviews the conversation may have continued with the elite interviewee positing views on why this was so. In this example, it was stated that ‘they are provided with no training’, hence that text was coded with the theme ‘training’. This is diagrammatically represented in Figure 4-vii.

Figure 4-ix: Example of thematic coding



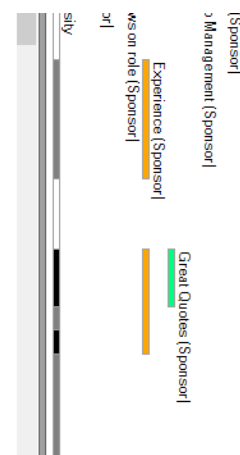
An example of how the interview transcripts were coded in NVivo is provided in Figure 4-viii. This is an extract from an interview transcript related to the sponsor, and the capability and capacity building theoretical concept. The text has been coded against several themes. Part of the text has also been highlighted as ‘great quote’ for potential use as a highlighted quote in the thesis.

Figure 4-x: Example of coding in NVivo

Question: Do you think they have the skills to be a good sponsor?

Answer: Often they don't, and I think over time some of them get those skills ... (as an example) ... <sponsor> by the time he/she got to the end of the program knew exactly what was needed of a sponsor, and possibly at the start of the program ... he/she possibly didn't have the experience to understand what it was and what needed to happen. I think know if you were to pick a role model for someone who understands how a sponsor should operate in a large program then it is <sponsor> but he/she learnt that the hard way. However at the same time <sponsor> was very open to the role of the assurance function, and using this to guide and help him as the program went along. <sponsor> also learnt because of all the scars and experience along the way.

I'd imagine now that if <sponsor> was starting on a new large ICT program he/she would be an extremely effective sponsor because he/she has done it before. I know that in central agencies in <jurisdiction> there is a view that they need to lift the capability of sponsors across <jurisdiction> by educating them about what they need to do when running large programs. The central agency has realised that it is an area in which they could help by getting the capabilities of the sponsor lifted up.



To then analyse what was said regarding sponsor capability, to enable interpretation and documentation of the data, a report was generated from NVivo. This report was generated along the hierarchical lines and it was possible to see all coded text against the theme. From this a summary of, for example, perspectives on sponsor training could be documented, and if applicable a particular ‘great quote’ from an elite interviewee may have been cited to highlight or support the summary or analysis. For example, for the sponsor -> capability and capacity building -> ‘training’ and ‘great quotes’ themes, after review and analysis of all data may have been summarised as:

All elite interviewees perceived that the public sector sponsors are not provided with the required training before undertaking the role²¹. Person X stated, ‘there is no thought to providing sponsors with training²²’.

This was a simple and practical approach to coding that enabled a full analysis and interpretation of the data for each project focus area and to have this aligned to the theoretical concepts. The analysis of the coded text for each theme enabled an overall narrative to be extracted.

²¹ A summation of the collective responses.

²² A specific quote coded as ‘great quote’ as it would add to the analysis.

4.5.2 Thematic analysis (documents)

The same thematic analysis approach used for the interview data was applied to document analysis. The documents were read, and then if relevant, stored in NVivo where text was coded using the same process as the interview data. This provided consistency and comparability of data and aided in later interpretation and reporting. In effect this process provided a ‘systematic procedure for reviewing and evaluating documents’ (Bowen 2009, p. 27).

4.6 Ethics and limitations

4.6.1 Ethics

Prior to the commencement of the interviews an application (Protocol 2017/518) to undertake research was approved by the ANU Human Research Ethics Committee. The major ethical concern was to ensure that the targeted interview participants were provided with appropriate information about the research project, their role, and how confidentiality would be addressed. In addition, signed consent had to be obtained prior to the interview.

To comply with these ethical conditions all participants were sent, either via email or via mail, an introductory letter, a *Participant Information Sheet* (PIS) and a consent form. No interview commenced without a signed consent form, which specified if the interview could be audio-taped or not, and if the participant agreed to be named in the thesis or not.

Interview recordings and transcripts were kept in a secure location and restricted by password. Access was restricted to the researcher, the exception being that a copy of the transcript was provided to the interviewee if requested. Where data was directly attributed to a named interviewee — and this person had agreed to be named on their consent form — the thesis text was checked with and approved by the interviewee.

Naming standards for anonymised elite interview participants employed in this document are: Person <alphabetical identifier>, <Role>_<Jurisdiction>. For example: Person A, CIO, Victoria. Appendices A, B and C detail the full list of participants and their anonymised identifiers.

4.6.2 Limitations

This study did not include interviewee participation from all Australian and New Zealand jurisdictions or agencies. Nor was participation representation equal in those jurisdictions that did participate. Given time and resources this was impractical and not possible. However, the majority of jurisdictions were represented. Those jurisdictions not involved in interviews were included in document analysis. Interview participation logically was limited to those willing to participate, however a broad net was cast, with the majority of participants approached agreeing to be interviewed. There were also limitations in which projects could be analysed without publicly available data or organisational consent to participate. For example, NZ Police declined to be involved citing confidentiality reasons.

However, the breadth and volume of interview participants, and publicly available documents ensured that this thesis provided a range of data that is missing from previous similar research.

Chapter 5: Sponsor – the career limiting role

'It is career-limiting to damage your reputation with a big IT project.' (Person AH, CIO, Vic)

5.1 Introduction

The sponsor is the first of the three core roles/disciplines to be analysed across the next three chapters. The literature review (Chapter 2) highlighted the critical importance of the sponsor to project success, with a PMI (2018, pp. 6-7) study concluding that 41 per cent of all project failures can be attributed directly to poor sponsorship. However, despite this impact, the literature also indicated that organisations continue to misunderstand and simplify the role rather than addressing its complexity and diversity (Crawford & Brett 2001, p. 1; Labuschagne et al 2006; Bryde 2008, p. 800; PMI 2012).

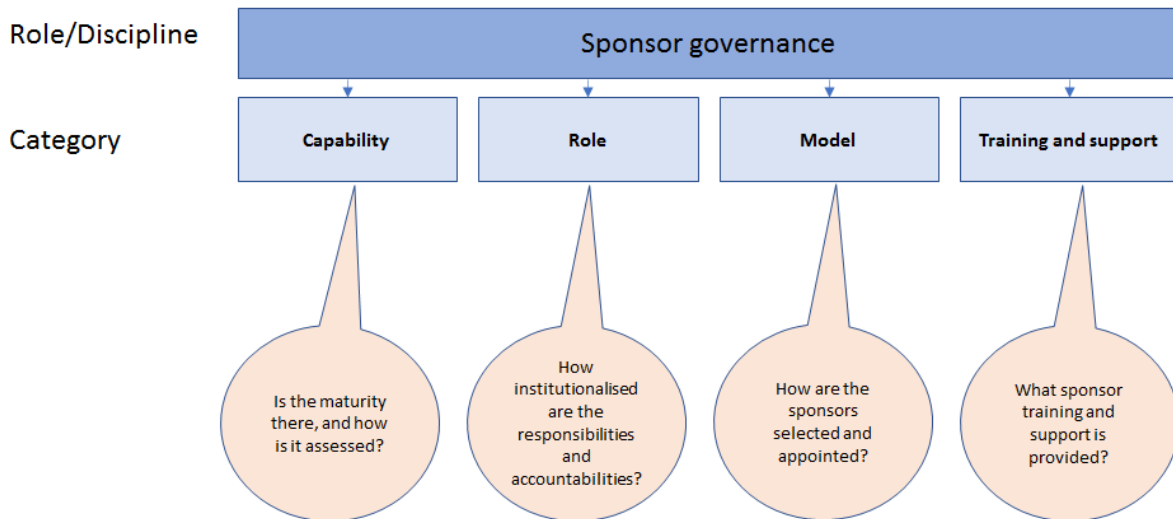
This arguably indicates a failing in institutional governance and as a result, organisations encounter the two 'pitfalls' of the sponsor role. Firstly, organisations fail to define, recognise, and support the role, and to make the role 'visible' organisationally. Secondly, this then results in the sponsor failing to understand the role, not having the capability to undertake the role, and being left to fend for themselves (Crawford & Brett 2001, pp. 4-5). A double-barrelled recipe for poor project outcomes.

Given the findings from the literature review this chapter aims to, via the interpretation of the elite interviewee perspectives, analyse the sponsor governance within the Australian and New Zealand public sectors. The interview questions were aligned to four categories identified in the sponsor literature review (see Figure 5-i). They are:

- Capability: does the sector have sponsor capability and is an assessment of this capability part of project planning and initiation?
- Role: how institutionalised is the sponsor role, its responsibilities, accountabilities, and how well is this understood by the actors?
- Model: how are sponsors selected for and appointed to the project role?
- Training and support: What training and support is provided to the sponsor?

For each of the above categories, perspectives from the elite interview data are analysed, supported by vignettes from those interviews. These findings are then summarised and aligned to the theoretical concepts, followed by a short conclusion.

Figure 5-i: Categories for sponsor analysis



5.2 The elite interviews

5.2.1 Capability: is the maturity there, and how it is being assessed?

The elite interviewees were asked if they believed sponsors within their jurisdiction had the required capability to undertake the role for a large ICT software project. It was a direct question that received direct answers. Across all jurisdictions the dominant perspective was that the capability does not exist. This can be evidenced by the following vignettes:

'No, they don't have the skills' (Person AK, CIO, Vic)

'Ah, shit no.' (Person AB, Snr Project Manager, APS)

'... the sponsor would be the first to tell you they don't' (Person Q, ICT Assurance, NZ)

'I've rarely seen that to be the case [capable sponsor]' (Person AA, ICT Audit, NSW)

The other consistent perspective was that there is a reliance on written guidelines to up-lift sponsor capability, with a supporting perspective that documentation alone does not uplift capability. More is required. An APS CIO (Person G) sums this up by stating:

‘... it is not just about reading, I can read all that, but if I have never done it before, gosh!’

Where there were stated exceptions to this lack of capability, the factors for this were also consistent across the jurisdictions. Capability can be present as a result of past experience, by chance, luck, or in effect, ‘random’ (Person AH, CIO, Vic). The argument for past experience being a factor was that these sponsors have learnt as a result of doing the ‘hard yards’ and ‘have the scars’ (Person C, Snr IQA, NSW) to prove it. A Snr ICT Assurance Officer (Person AG, Vic) argued without this past experience sponsors were left floundering whilst they:

‘... try to come to terms with what [the role] means.’

However, this was tempered by a Senior Executive (Person E, NSW), who argued that past experience was in itself no guarantee of improved capability, and that this was dependent upon the actor actually learning from past experience. They cited an example where a sponsor, in their view, had not learnt and had simply carried forward poor practices from a past project to the new project. This was supported by a CIO’s (Person O, NZ) perspective that the ability to learn from past experiences:

‘... has not been a skill always displayed by sponsors.’

Adding another twist to this perspective, a CIO (Person W, NZ) posited that Sponsor capability has not improved, despite the volume of past projects in the sector, due to ongoing poor project outcomes which has resulted in senior executives wanting no involvement. They sum this up as:

‘... [the sponsors] get so burnt and destroyed over them they will always refuse to do another one. So, there is never a lesson learnt because there is never an experience you take forward’.

This was argued by Person W to be an organisational loss of ‘learned capability’. Person W claimed there can be a tendency to punish a sponsor instead of supporting this person and saying we understand what you have been through, it was hard, but you have learnt a lot, we value that experience and hope that you will now be a valuable organisational asset for future project capability. As a result, the actor says ‘... not on your life’.

A final factor that can contribute to existing sponsor capability was where the agency is a project-based organisation²³, one that has a ‘demonstrable’ (Person AF, Snr ICT Assurance, Vic) culture of running large projects. However, there was also a perspective across all jurisdictions that there are very few government agencies can be classified as such. A Snr ICT Assurance Officer (Person T, NZ) argued that private sector project-based organisations understand the difference between an organisational operational role and a project-based role and that the public sector did not. With the ability to view and compare across sectors, a past Victorian Government CIO, now a private sector CIO (Person AI), adds to this by stating private sector project-based companies have entrenched and mature project delivery capability and consequently sponsors understand what is involved and therefore are more likely to have the capability required. They argued this is different in the Victorian public sector, where:

‘... the sponsor of that program, that's not really what they do, and so they do not really understand what is involved.’

The perspective that jurisdictions fail to understand the sponsor role, was argued not only to be a result of agencies lacking project-based maturity, but also related to the lack of senior executive level commitment in acknowledging the sponsor role, its importance, and the need to have this as an organisational capability. A CIO (Person AK, Vic) highlighted the sponsor as one of their top three large project capability issues for the public sector to address, and argued that capability will only be addressed when:

‘... there is genuine intent to have executive sponsorship as part of the organisational culture’.

A reason for this lack of organisational intent, one highlighted in other jurisdictions, was made by a Senior Executive (Person AN, NT) who stated that improving sponsor capabilities:

‘... will always play second fiddle to day-to-day operations capabilities.’

²³ ‘An organisation that manages functions within a temporary project organisation setting. Firms that conduct the majority of their activities in project mode and/or privilege the project dimensions over functional dimensions in their structure and processes’: Thiry, M 2007, Creating project-based organizations to deliver value, paper presented at the *PMI® Global Congress 2007—Asia Pacific, Hong Kong, People's Republic of China*. 31 January 2007, Newtown Square, viewed 10 August 2020, <https://www.pmi.org/learning/library/project-based-organizations-deliver-value-7330>

The common perspective was that improving senior executive sponsor capability takes a back seat to operational capabilities. However, there were also views that this is not acceptable and entrenches the attitude. A CIO (Person AH, Vic) argued that sponsor capability should be a pre-requisite for all senior executives, part of their skills-set, just as financial management is.

This meant claiming:

'I do not know how to manage a technology project ... [would be akin to stating] ... I do not know how to manage money'.

A consequence of this argued lack of organisational understanding of the breadth and diversity of the sponsor role and responsibilities, was that jurisdictions focus on one particular skills-set such as project management, instead of the full required skills set, and believe this is the 'panacea' (Person AI, CIO, Vic). Linked to this lack of organisational understanding, there was also a popular perspective that actors undertaking the sponsor role have a misguided assessment of their own capability; or as a CIO (Person S, NZ) stated:

'... [being capable] in your day job does not mean you will be a capable sponsor.'

Person S argued this was just human nature as these executives are not willing to admit:

'... that I do not know what I am theoretically supposed to know.'

Another CIO (Person O, NZ) summed this up as:

'... they do not know what they do not know, they struggle and do not always have the humility to learn from people that have done that before'.

Despite these comments, interviewees also commonly made it clear that the sponsors want the project to succeed with good outcomes. They do their best, but simply do not have the capability or understanding required. For a personal perspective on this issue a Snr Executive (Person AM, NT), who at the time of the interview was also the sponsor of a large ICT software project, was asked about their capability to undertake the role. They stated:

'Whether I have got all the knowledge and capability, I do not know, but we certainly put in the effort ...'

Whilst Person AM hopefully becomes an effective sponsor, this quote reinforces earlier views that the sponsor role and required capability is not understood organisationally or jurisdictionally, so an effective sponsor is open to chance.

Whilst the jurisdictions were perceived as failing to address the current sponsor capability requirements, several elite interview participants raised the spectre of the public sector being left further behind due to exogenous and endogenous changes in the way large ICT projects are managed. The issue being that whilst the sectors have not yet addressed the current capabilities, new ones have emerged. The two examples raised by several jurisdictions were Agile development and digital transformation. Both were argued to lead to a change in approach, delivery, and project management over traditional methods. A Snr Executive (Person AD, APS) stated that the APS did not currently have a plan to address this, and that these new capabilities will not be a simple matter of ‘flicking a switch’.

The interviewees confirmed a lack of awareness of a need to undertake a formal sponsor capability assessment prior to appointment. A CIO (Person O, NZ) argued that it was the responsibility of the agency’s Chief Executive to ensure that a sponsor, with the appropriate capability was appointed. There was a common agreement across all jurisdictions that a capability assessment should be a requirement, and that this should happen as part of the selection process. The argument was in fact, if the capability does not exist, then the project should not start.

However, there were a couple of examples, one more advanced than the other, of jurisdictions starting to address the sponsor capability assessment requirement. In NSW, a Senior Executive (Person Z) in an ICT Assurance Group with jurisdictional-wide responsibilities, stated that the need to uplift sponsor capability was now recognised as a key area where they could assist the agencies and projects. As part of this the unit has implemented a capability review of the designated sponsor prior to appointment, and this will continue to be assessed throughout the project lifecycle. In New Zealand, a Snr ICT Assurance Officer (Person Q), also with jurisdiction wide-assurance responsibilities, stated the assessment process was something currently being discussed with a target delivery date of two years (from 2018).

In summary there was much similarity amongst the elite interviewees and across jurisdictions on the perceptions of sponsor capability. At best, sponsor capability was perceived to be dependent on past experience, or luck, not due to institutional governance. However, the dominant perspective was that the capability is lacking and that it is not an organisational priority to address the issue. There was also a dominant perspective that sponsor capability is not assessed as part of project initiation.

5.2.2 Role: how institutionalised are the responsibilities and accountabilities?

There was a clear understanding by the elite interviewees of, and agreement on, the importance and criticality of the sponsor role. A Snr Project Manager (Person AB, APS) stated for project success, the role was ‘fundamental’. A Snr Executive (Person K, NZ) perceived the role to be a ‘huge responsibility’. A CIO (Person L, NZ) described the sponsor as ‘a key [project] role’. A Snr Project Manager (Person BM, Tas) argued that the sponsor is the project’s champion, and that the project was reliant on the sponsor to ensure that all in the organisation is ‘on board [with the project’s aim].’ These perspectives were perhaps best summed up by a CIO (Person AI, Vic) who stated:

‘... anybody who has ever been on a project management course, paragraph one on page one says the most important person in the project is the sponsor.’

Whilst there was a general awareness of criticality of the sponsor role to project success by the interviewees, it was also a common perspective that the actors, typically the executives who fill the role, do not. They also fail to understand the full role, responsibilities, and accountabilities of the role. It was the opinion of a Snr ICT Auditor (Person AA, NSW) that senior executives in the sponsor role see themselves sitting above the project as a figurehead rather than being an active and critical part of the project. This was a perspective supported by an Snr Project Manager (Person AB, APS) who argued as a consequence, sponsors fail to manage project issues, instead ‘they fester’ with negative impacts. Supporting this perspective, a Snr Executive (Person E, NSW) cited as an example, an instance where the sponsor failed to show at a project governance meeting. The meeting was to make a critical project decision. The sponsor was also the chair and the ultimate approver of the decision. However, Person E stated, not only did the sponsor not attend:

‘No notice was given, and no apologies received.’

The meeting was leaderless and the left the project floundering. This was not only argued to be a lack of understanding by the sponsor of their responsibilities, but also an avoidance of accepting responsibility for the decision. A similar story was provided by a Snr Project Manager (Person N, NZ) for a troubled project. They stated, even with an institutional framework providing guidelines for sponsors, such as the need for a steering group and their role as head of this, the new sponsor stated up-front:

'I do not see why we have the need for steering groups.'

When this lack of understanding issue was discussed with a Snr Executive (Person K, NZ), they posited:

'... there has been naivety by some sponsors in regard to their role ...'

A senior and very experienced IQA (Person C, NSW) with past roles in many large government ICT projects, supports these perspectives and adds that in some instances sponsors have ignored their advice and tried to transfer the responsibility, as evidenced by the following quote:

'... sponsors did not really want to hear about problems, or they would just say to the Program Director, you have to solve it somehow.'

As a result of these issues, a Snr ICT Assurance Officer (Person AD, APS) with jurisdiction wide ICT capability responsibilities, acknowledged that there is a 'desperate need' for the sponsor to be aware of and fully understand their responsibilities. Similar to other jurisdictions, they posited this lack of understanding is sometimes due to sponsors seeing ICT projects as an IT technical project, rather than a business transformation project, and therefore believe they can absolve themselves of the responsibility and are content to 'let the IT guys deal with it'. Person AD added that there are plans afoot to potentially form an APS 'community of practice' to address these issues. That seems prudent, as a CIO (Person A, APS) stated that within the APS there needed to be more clarity on the roles, responsibilities, and accountabilities of the sponsor to ensure jurisdiction wide consistency.

The elite interviewees perceived that there was an unwillingness of sponsors to accept responsibility and to be held accountable. A CIO (Person AH, Vic) argued that sponsors use the history of poor large ICT software project outcomes as a reason why they should not be held accountable. Person AH argued there is a 'bullshit construct' within the public sector that 'big IT projects always fail' therefore they are 'absolved of responsibility' as what could they possibly have done to change it. I did my best, but it was inevitable. Another perspective, by a CIO (Person AI, Vic), was that the avoidance of accountability by the sponsor in the public sector was abetted by government lifecycles. The reasoning being that large ICT software projects typically extend across government terms, and it was Person AI's perception that this resulted in the agency and sponsor pushing a problem onto a new administration to deal with:

‘... all I have to do is go slow this year and then it will be somebody else's problem’.

Part of the stated issues for the sponsor with these approaches, is that avoidance can become a trap. A Snr Executive (Person E, NSW), citing a past large and troubled project, stated that despite the best efforts of a Snr Executive in the sponsor role to be ‘very removed from the [project]’, and to view it as ‘somebody else’s problem’, inevitably they failed to do so as due to the ongoing problems the project simply just got ‘closer and closer’ to the sponsor. There proved to be no escape. To address this avoidance of accountability, a CIO (Person L, NZ) argued it required a sponsor ‘being brave enough’ to take appropriate action, but then posited due to organisational factors such as a culture of punishment, finding a brave executive can be difficult, particularly if that action could be perceived as being career limiting.

One particular responsibility was raised consistently by interviewees, across all jurisdictions, as being poorly understood, accepted, and managed by sponsors. This was the stakeholder management role and responsibility, particularly when a third-party vendor is involved. It was argued that it was quite common, in fact the norm, to have a vendor or vendors as part of large ICT software project either in delivering the software solution, or as partners in providing delivery of the solution, including providing the skilled resources required. The consistent perspective was that this vendor management role is poorly understood, and that sponsors generally lack the capability to undertake this role. A CIO (Person O, NZ) argued that sponsors lack this vendor management capability as:

‘...they have never had to do it.’

They go on to argue that this capability means understanding they need to own the vendor relationship role. As an example of what sponsors should be doing, but have not been, is provided by Person O in the following quote:

‘... [sponsors] are the ones that are supposed to pick up the phone and say, I did not think I was going to have to pick up the phone, but we are not in a situation where it looks like neither of us is going to come out of this looking good.’

There were several references made by interviewees about sponsors trying to abdicate responsibility for the project to the vendor. A CIO (Person G, APS) was clear on this, they stated that it is the sponsor who is responsible for ‘leading the project’, even if delivery involved a third-party. In those instances, vendor relationship management becomes key, as the sponsor cannot, even if they try, absolve responsibility or accountability to the vendor.

Providing a vendor perspective of this, a private sector CIO (Person AW, NT), with experience in large government projects, argued that from a vendor's perspective this is typically poorly done and the sponsor rather than seeing this as a collaborative win-win arrangement has often seen it as an opportunity to 'screw the vendor', or think it is a strength to be seen to be tough on vendors.

Vendor relationships are of course not the only relationships to be managed by a sponsor in a large ICT software project. There are internal project team relationships, and other internal and external stakeholder relationships. As a positive example of a sponsor acknowledging the importance of this responsibility, a Snr Executive (Person AM, NT) currently a sponsor of a large program, stated they were aware of the importance of engaging with stakeholders and were also clear that it was their responsibility to do so.

A final perspective concerned the role of the sponsor at the project initiation and planning stages. The argument was that this was a critical time in the project life cycle that required active sponsor involvement to undertake the responsibilities required at that stage. A CIO (Person G, APS) stated this included, but was not limited to, the project structure, contract, relationship management, governance structures and funding. This view was supported by a Snr Executive (Person BL, Tas) who stated past project successes were a result of having the sponsor support and involvement from the initiation stage, where they set realistic expectations on deliverables, budget, and time within the organisation.

In summary, whilst there was a common perspective on the criticality of the sponsor role, there was also a common perspective that sponsors themselves do not generally understand or accept the role, responsibilities, or accountabilities, and that this is critical from the initiation of the project.

5.2.3 Model: how are sponsors selected and appointed?

As highlighted in the capability section (see Page 80), the sponsor selection process does not generally include a capability assessment of the actor to assess their maturity to undertake the role. A Snr ICT Auditor (Person AA, NSW) stated as a result, based on their extensive experience, that they had never seen a Sponsor chosen based on capability. A consequence of which is argued by a Snr Executive (Person K, NZ) to be that this immediately hands the agency and project the challenge of how to equip that person to undertake the role.

The elite interviewees perceived that, whilst not exclusively the case, the common default across the Australian and New Zealand public sectors was to assign the sponsor role to a senior executive in the agency. For large ICT software projects, this typically was at the Deputy Secretary level with portfolio responsibility for the project outcomes. The perspectives on why this is typically the default were also aligned. These can be summarised as allocating the role to a lower organisational level would diminish organisational oversight, that these executives have the authority to implement organisational change, they can make decisions on factors such as budgets and resources, they give the project visibility and importance in the organisation, and that they are accepted by the business as an appropriate person to lead and drive change. Having said all that, there were also some elite interviewees, such as a Snr Executive (Person BM, Tas), who acknowledged that this default option is not always the best or most appropriate selection method.

There however was a common perspective on who should not be the sponsor, and that was an ICT representative such as the CIO, an action that an experienced NSW IQA (Person C) stated ‘is a waste of time.’ This was argued to be the case because these large ICT software projects are business transformation projects, need to be seen and recognised as that and therefore the CIO is not an appropriate sponsor. The CIO may form part of the project with responsibility for technical delivery or the supply of other ICT services into the project, but they do not own the business transformation outcomes. Selecting a sponsor from the business at project initiation, was identified as the number one priority of a CIO (Person AI, Vic), as the actor has:

‘... the vested interest in the outcome of the project.’

A final perspective on sponsor selection is aligned to earlier views that there is a poor organisational understanding of the sponsor role, and the lack of priority this is given by senior executives. There were arguments that given these factors organisations blindly follow a process, in policies such as Gateway or PRINCE2, firstly to have a sponsor and secondly that this is to be a ‘senior officer’. A Snr Executive (Person E, NSW) argued this typically led to the wrong person being appointed sponsor as they do not focus on an appropriate selection process but rather a procedural step in initiating a project, or as they succinctly put it:

‘All we look for is names [to fill boxes].’

Disturbingly, the consensus from the elite interviewees was that the sponsor role was seen as a role to avoid, and there was a general reluctance to take on the role by senior executives, or as a CIO (Person W, NZ) stated, they have even ‘refused to do so.’ A CIO (Person AI, Vic) argued even those that consider taking on the role choose not to once they find out what is involved. There were perspectives that this reluctance was due to a view that the risks inherent in a large ICT software project are large, yet the perceived upside is small. If I fail, I will be accountable. If I succeed there will be no reward. For executives who have carefully established a career in the public sector, with hopes or expectations of greater things, being a sponsor of a high-risk large ICT software project is seen as a possible end to that plan, or as another CIO (Person AH, Vic) puts it:

‘It is career-limiting to damage your reputation with a big IT project’.

Interestingly there was an argument that the various lessons learned reports and project reviews produced to assist in improving outcomes for future projects in fact contribute to this reluctance to take on the sponsor role by putting a sense of inevitable failure into these executive’s minds. A CIO (Person AH, Vic) argued the 2011 Victorian Ombudsman (2011, pp. 11-13) report, was such an example, and stated that:

‘... ever since that report came out, really, senior executives in the VPS²⁴ anyway ... they have lost confidence that it is possible to manage these things.’

They went on to describe this as a ‘learned helplessness’, one where instead of taking the positives from the lessons learned, all they learn is they are powerless to achieve positive outcomes and they will be held accountable. The CIO posits that this can only be addressed by executives seeing a pattern of improvement in project outcomes to gain confidence, and therefore more inclined to support and sponsor projects. Their argument is that this can only be achieved by not undertaking large ICT projects, and to break the project into less risky and complicated components. Their logic being:

‘... because if they [large projects] always fail, if the medicine kills the patient repeatedly, then doubling the dose is not the right thing. What you need to do is think about a different medicine.’

²⁴ Victorian Public Service

A political argument for this unwillingness to take on the role was also highlighted. A Snr Executive (Person BM, Tas) argued there is reluctance to be part of government-imposed initiatives, or ‘brainwaves’, as they can be seen internally as:

‘... not important, not needed, and high risk of failure.’

Person BM argued in these instances sponsors fear they will end up ‘carrying the can’ for that political decision. To counter this, Person BM also argued there are cases where sponsors have been very willing. These tend to be those projects they classify as ‘sexy’, such as a new innovation that has wide internal and external appeal and has the additional attraction to the sponsor of being associated with the outcome; a possible career enhancing factor rather than a career limiting one.

When discussing the resource model for the role, such as part-time or full-time, all jurisdictions were aligned. The default is that the sponsor role, for the large ICT software projects, is undertaken part-time on top of the substantive role. It was argued by a Snr Executive (Person BL, Tas) that this is typically because there is an ‘underestimation of the time required to be a sponsor’, and therefore these executives believe they can manage the project ‘from arm’s length’, but they soon find out this is not possible.

That ‘arm’s length’ assumption is supported by a Snr Executive (Person E, NSW), who cited a past large project that was having substantial challenges, yet the sponsor insisted on remaining in their senior substantive role. The project issues continued to mount until, they argued, jurisdictional executives acted ‘almost as a punishment’ and advised the sponsor to relinquish the substantive position and become a full-time sponsor. From this discussion it is important to note that Person E was not being critical of the sponsor, nor that they were not committed, or that they were the wrong person, the argument was that for these large ICT projects the sponsor should have been full-time ‘from day one’ as these projects ‘are not things that can be run on the side’. For the organisation not to do so, not only endangers the project but is unfair to the sponsor who is immediately challenged due to the competing demands of organisational and project responsibilities.

However, it was argued by a Snr Executive (Person BL, Tas) that executives who undertake the sponsor role on a part-time basis due to an inability to relinquish their substantive position, such as a Chief Executive, have implemented a model that has been effective. In these instances, the executive has realised the constraint and addressed this by implementing

additional project positions and roles that, which whilst not removing accountability, relieved time constraints. This is a similar approach to that undertaken successfully by Michael Carmody at the ATO (see Box 5.1).

A final narrative concerned the timing and selection of the sponsor, and similar to earlier views, the perspectives were clear in that the sponsor needs to be selected at the time of the political mandate, and take on responsibility then, not after the project has commenced. That is, at very beginning of the project initiation stage. They are to be front and centre throughout the planning process.

In summary, the elite interviewee perceptions are that the sponsor selection process is flawed, as is the model in which they are engaged. Part of the ongoing issue is that there remains a reluctance to accept the role, for fear it will be career-limiting. The role comes with a bad reputation, little reward but high personal risk. Perspectives on the current selection process are perhaps, if a wee bit cynically, summed up in the following quote from a CIO (Person W, NZ):

'I talked to one other government department who said one of the criteria for starting a project is that there is a passionate person in the business that is willing to lose their job over whether it succeeds or not, and you make them the sponsor for it.'

A model not based on capability or suitability but on being an enthusiastic risk taker. Perhaps not the best approach.

5.2.4 Training and support: what sponsor training and support is provided?

5.2.4.1 Training

There was a consistent perspective across all jurisdictions that formal training for sponsors would be of benefit, there were no disagreements. A Snr ICT Assurance Officer (Person T, NZ) argued that training for the sponsor prior to appointment should be mandatory, something that an ICT Assurance Officer (Person R, NZ) claimed was the case in the UK. A Snr Executive (Person AD, APS) argued a major and obvious benefit of sponsor training would be that it provides the sponsor with the:

'... right skills up-front; they know what to do and be aware of their role.'

Adding to this view, a CIO (Person A, APS), argued that sponsor skills can be taught, just like project management, the issue being it is not happening. Associated with this, there were also strong opinions expressed that if a training course is to be developed it needs to be targeted at the sponsor role and the range of capabilities required in large ICT projects and not just, as examples, Gateway or project management training, or as a Snr Project Manager (Person P, NZ) stated:

‘... and I do not mean just go and do PRINCE2 training or whatever it is, the flavour of the month for New Zealand Government methodology ... you cannot do that.’

However, there were perspectives that there would be a problem in getting executives to firstly acknowledge they need the training and secondly to attend. A perspective of a Snr Executive (Person BM, Tas) was that senior executives are resistant to this type of training, believe that they do not need it, and that they do not have the time to do it. A Snr Project Manager (Person AS, NT) argued that getting a Chief Executive to attend sponsor training ‘was never going to happen’.

A Snr Project Manager (Person N, NZ), based on experience with sponsors in past government projects, stated the ability to get senior executives to participate in any training was a serious issue and had impacted negatively on those projects. They gave an example of a past jurisdictional initiative to provide formal training to sponsors on project governance, which resulted in an uptake of around 50 per cent. The remaining half:

‘... who were invited to it were horrified and insulted that it was felt that they needed this training. They go “I have reached level X in this organisation, therefore I understand governance”, and in fact ... they were the ones who needed it most. So, I think that was a problem with the culture of the organisation.’

A review of the institutional frameworks revealed that Victoria and NSW are the only jurisdictions to have some form of sponsor training within their framework. The Victorian course is non-mandatory, one and a half days in duration. A Snr Assurance (Person AG, Vic) officer stated that the Victorian course mainly discusses ‘processes’ and was of the view that this alone was not suitable for sponsor training. Two Victorian CIOs (Persons AI & AK) supported that perspective and added that it is not suitable to uplift capability to the required level. Person AK’s perspective was that the training:

‘... does not guarantee an understanding and awareness of their obligations and role.’

The NSW course is also non-mandatory, and a half day in duration. Most NSW elite interviewees were not aware of the course. This may well be due to the course being relatively new at the time of the interviews, with the course itself commissioned by a relatively new jurisdiction-wide assurance team. A Snr Executive (Person Z, NSW) from that unit stated that the intent of the course was to provide a half day ‘sponsor masterclass’ for senior executives. They stated at present the course was more a ‘conversation’ about the role and what has been experienced in the past and to provide some structure to this. It was also acknowledged that this is a starting point, and the plan is to develop this training further.

There was evidence in several other interviews that the establishment of a formal sponsor training course had been raised, but all confirmed that to their knowledge had not progressed any further. For example, in Tasmania a Snr Executive (Person BM) stated there was some earlier talk of developing a targeted course with the AIPM²⁵, but that seems to have ‘dropped off the radar’. In New Zealand, a Snr Assurance Officer (Person Q) with jurisdiction-wide responsibilities, confirmed that the need for such a course had been raised. When asked why this had not progressed, Person Q stated:

‘I have been wanting to for several years, but again we have not had the support, or the funding support to do this ... I am doing what I can with this Grant’.

This issue of capacity, funding, and support to address the sponsor training requirement was also raised in the Tasmanian interviews. It is arguably relevant to other jurisdictions. In Tasmania it was classified as being limited due to the size of the Tasmanian sector, size was argued to limit the ability to develop and maintain any detailed training course.

In summary the elite interviewees perceived training to be important, even made mandatory, but few options exist largely due to a lack of organisational priority or ability to address gap. There was also a perceived reluctance to undertake the training required, and a view this is unlikely to change until sponsor skills are recognised organisationally as other senior management skills are.

²⁵ Australian Institute of Project Management

5.2.4.2 Support

There were similarities identified with sponsor support models across all jurisdictions, with some exceptions including new initiatives in NSW. Commonalities were the inclusions of an IQA in some guise, the use of Gateway Reviews and PRINCE2, documented guidelines, commissioning of independent external reviews, and the mandatory or optional provision of assurance services by a central assurance team. No interviewees identified any support process outside these approaches. It is the application of these that can vary across jurisdictions.

As examples of some initiatives, two Snr ICT Assurance Officers (Person AG & AF, Vic) stated they review and assess a project's sponsor support structure. This includes the mandatory inclusion of an independent expert from industry or elsewhere to provide 'unencumbered advice'. A Snr Executive (Person Z, NSW) stated that they have compiled a 'highly experienced panel' of people to assist sponsors. An APS Snr Executive (Person AD), with jurisdiction-wide assurance responsibilities stated that the main source of support was via the Gateway Reviews, however, they also acknowledged that this process:

'... is not really providing assurance to the government as an investor.'

Person AD added as a result, their unit was currently looking at how to improve support, but that they could not 'pre-empt which way it is going to go'.

However, it was more common that it was the responsibility of the sponsor to seek jurisdictional assurance assistance rather than this being a mandatory part of the project structure. As an example of this, a CIO (Person S, NZ) stated that whilst options exist within the New Zealand institutional framework that can and do provide sponsor support, the issue was that this support is reliant on the sponsor asking for it, and this is not always something senior executives are willing to do, that is admit 'I need help.'

The NT has invested considerable effort in enhancing assurance for large ICT projects and deserve great credit for that, but it was confirmed by two Snr Assurance Officers (Persons AS&AT) that it is up to the sponsor to seek advice. However, two other NT Assurance Officers (Persons AO&AP) stated as part of their role they monitor the sponsor's performance and that 'if we identified a sponsor as low-engagement or low-ability, we would raise that as

an elevated risk and highlight' this upwards. Arguably assistance before it got to that stage by providing support from project initiation would be a better approach.

As indicated earlier, and whilst the model may vary, the use of IQAs as a support method for sponsors was common across all jurisdictions. These IQAs were stated to be sourced from various options, such as the large consulting firms like Deloitte and KPMG, or independent contractors. Whilst the inclusion of an IQA was common across jurisdictions it was not always mandatory to do so. For example, in Tasmania a Snr Executive (Person BM) stated this was up to the sponsor to decide. The New Zealand interviewees indicated that the use of IQAs has been a fairly common practice within that jurisdiction. However, there was an argument from a CIO (Person W, NZ) that there was a practice to bring them in after project issues arose, when in fact they should have been there prior to the troubles if they were to 'advance the project'.

There was also commonality across all jurisdictions that having an IQA in itself was no guarantee that the sponsor would get the support required, as the quality and engagement model of the IQA varied, as does the willingness of the sponsor to ask for, process, and accept that advice. At their best, IQAs were described as being 'key in training a sponsor' (Person L, CIO, NZ), one who 'creates value' (Person O, CIO, NZ), and one who is willing to be truly independent and 'challenge' the sponsor when required (Person R, ICT Assurance, NZ). At their worst they were described by a CIO (Person O, NZ) as:

'... someone who goes into the battlefield after the battle and stabs anyone on the ground who is still alive.'

These perspectives were not an argument against having an IQA as part of a sponsor support model, as there was general support for their role. The argument was that an IQA is just one part of an overall sponsor support structure and should not be the only part. The other argument was to be effective the IQA's role and timing of engagement needed to be established early if to be effective. Looking from the outside in, to gain a different perspective, a private sector Snr IQA (Person C, NSW) talked about the challenges faced in providing external independent quality assurance to government sponsors. Their perspective was it was difficult to get the sponsor and the project team to accept that they were there to independently help them in improving outcomes, and that they were not there to conduct audits. In a recent project Person C stated it took six months for the sponsor to understand this and to accept and trust them as an ally.

The provision of ‘peer’ support was an emerging concept amongst some interviewees. A CIO (Person G, APS) argued that jurisdictions identifying actors, either internal or external with past sponsor experience, that could ‘buddy’ up with sponsors was worth pursuing. This was claimed to provide a positive role model, and a timely and relevant sounding board, where the buddy could state:

‘.. this is what I did in my role.’

The interviewees perceived that this model acknowledges that a training course alone is not effective, and that a buddy/mentor provides consistent support to the sponsor throughout the project. A Snr Executive (Person X, NZ), a Sponsor themselves, supported this view by stating that whilst training would be beneficial:

‘... having someone coming along side us in the workplace would be more valuable’.

The provision of a buddy/mentor as highlighted earlier is already incorporated as initiatives in Victorian and NSW support models. In New Zealand, an ICT Assurance Officer (Person Q) stated they had been investigating such a model due to feedback from past sponsors but had it had lost internal priority and stalled. Whilst not part of an official support process, in Tasmania the jurisdictional size was argued to have advantages in providing peer support. It was argued that the smaller size enables informal support networks to develop quickly and easily (Person AM, Tas, Snr Executive).

In summary the elite interviewee perspectives indicate that whilst support is available in guidelines, it is variable in quality and effectiveness, not always mandatory, and more often left to the agency and sponsor to establish. This is a problem given the sponsor does not have the capability; a suitable support option is therefore critical.

5.3 The findings and their relationship to the theoretical concepts

5.3.1 Capability and capacity building

Firstly, it was perceived that the Australian and New Zealand public sectors do not have the sponsor capability to initiate and plan for large ICT software projects. It was also argued that if the capability is not there, then the project should not commence, however it was claimed that assessment prior to initiation is not a common practice, nor is that a decision point. Additionally, chance, or luck, was likely to be the major capability factor. The agency by

chance had an experienced capable sponsor available, or they were simply lucky in that the Sponsor was motivated and willing and able to learn as the project progressed. By implication, even being ‘lucky’ meant the project commenced without a capable Sponsor.

Secondly, it was argued that whilst present sponsor capability is lacking, the advent of digital and Agile delivery brings a requirement for new sponsor skills. This meant ‘letting go’ to encourage innovation and fast delivery whilst still maintaining responsibility and accountability. This was argued not only to be a new skill set but a cultural shift, and that given the public sectors have failed to address capability to this stage, there is a distinct new challenge in addressing emergent skills.

Thirdly, sponsors are not selected and appointed based on their capability or suitability. The general default is to select a senior executive who is organisationally aligned to the project outcomes. The stated problem with this was the actor is generally not suitable, as they do not have the experience, nor do they understand the role. They are not capable of the role but get a ‘tap on the shoulder’ regardless.

Fourthly, institutional frameworks across the Australia and New Zealand public sectors all have sponsor roles and responsibilities, albeit in varying detail, addressed in their institutional frameworks. These are generally documented roles and responsibilities, some dot points, and guidelines there for the sponsor to read. The claimed issue is, this is simply not enough to either address capability or to transfer the required knowledge of the role to the sponsor. Reading some dot points alone was deemed to be unsuitable as a capability building strategy.

Fifthly, there are generally no training options available to sponsors prior to their appointment, yet there is common agreement this would be of benefit, and arguably should be mandatory before appointment. Whilst the need has been acknowledged it has not been prioritised and funded accordingly, so there is little evidence that this will be addressed in the near future. There were exceptions in Victoria and NSW, but whilst better than nothing, these arguably are too short to cover anywhere near the range of skills required to undertake the sponsor role. Part of the problem was that to establish such a training option requires a lot of effort and cost. For jurisdictions like the NT and Tasmania this was simply not an option. Arguably, this is a factor across all Australian and New Zealand jurisdictions.

Lastly, regardless of available documentation and training, or even past experience, it was argued to be critical that the sponsor has an effective support structure in place. This has not

always happened. There was no preferred one-way to provide sponsor support, but instead a range of options based on the needs of the sponsor and project, it just needs to be available and fit the needs of the sponsor. There is growing support for the provision of ‘buddies’ to sponsors, a capable and experienced peer they can openly talk to, however that would require a cultural change across the jurisdictions.

5.3.2 Leadership

Addressing sponsor capability was perceived to be lacking in organisational priority and executive understanding of the role. The organisational culture required change to acknowledge and reflect sponsor capability as a core senior management capability, similar to a requirement for financial management capability, rather than as a ‘2nd fiddle’ capability.

Arguably the greatest example of a lack of senior organisational understanding of the sponsor role is the resource model utilised. Sponsors are generally expected to do the role on top of their substantive organisational position and fail to understand it is a commitment from project initiation through to completion. This model was argued to set the project and sponsor up for failure.

5.3.3 Accountability

Sponsors were claimed to not fully understand or accept the roles, responsibilities, and in particular the accountability of the position. It was argued that the sponsor needs to champion and drive the business change throughout the project. Sponsors are failing to do so and take a hands-off figurehead approach, and the project falters as a result. This has not been helped by a tendency to not hold the sponsor to account for outcomes, one of the reasons was argued to be a mind-set at the executive level that these ‘ICT projects’ always have problems, so ‘what could I do’. However, despite any attempt to avoid accountability, either deliberately or naively, if the project fails, there are also cases where the sponsor has been held accountable to their very personal cost. So, despite best efforts the accountability will possibly follow, so it is best to understand and address this up-front.

5.3.4 Stakeholder management

A key sponsor role and responsibility is to manage the key internal and external stakeholders. It was perceived that this has been done poorly. Sponsors have failed to understand that this is their responsibility, and a key one. Sponsors have also failed to demonstrate the capability to

manage these relationships. Vendor management in particular was highlighted as an issue. The lack of vendor management capability was stated to have led to a focus on hard negotiations, a ‘screw the vendor’ approach rather than looking to develop a win-win collaborative partnership. It was perceived this was due to vendor management being a role that many public sector managers have never had to do. Unfortunately, as a result, it was then perceived that the sponsor response has been to try and abdicate the project’s responsibility to the vendor, rather than understanding it was and would always remain a sponsor responsibility.

5.3.5 Organisational learning

The sponsor role was seen as a role to avoid. The reasons for this were termed as a ‘learned helplessness’. The litany of past and ongoing large ICT software project poor outcomes, understandably, situate the role as extreme risk, and potentially career limiting as the project is perceived to have little chance of success. Therefore, avoidance of the role becomes a strategy, as ‘I quite like the job I have and would like to keep it’. As a result of these factors, it was perceived that sponsor capability is not increasing as those lessons learnt are not taken forward to a future role, and consequently there is an organisational loss of learned capability.

5.3.6 Methodologies

In PRINCE2 the sponsor role (*Senior Responsible Officer* in PRINCE2 terminology) is a requirement in the methodology. That is, PRINCE2 outlines a project organisational and governance structure, and the sponsor is a key, if not the most important, role in that structure. PRINCE2 compliance recommends appointing a senior officer in the role. This was perceived as an exercise in ‘filling a box’ in a methodological process rather than a considered selection. There was a perception that by doing so there was a misguided organisational belief that the sponsor role had been addressed, typically resulting in a sponsor without the capability, awareness of the role, or time to undertake the responsibilities.

5.3.7 Entrepreneurship

It was argued the only way to improve acceptance of the sponsor role, is by having improved project outcomes instead of the ongoing litany of disasters, and the fear that instils in senior executives. This coupled with an ongoing lack of sponsor capability for large ICT projects, led to the argument that the solution is to de-risk these projects by not doing them as large

projects, break them down into components, deliver a different way where the chance of success is greater, and the risk of failure is lower.

5.3.8 Agency

Finally, a mini case study of a sponsor for a major APS ICT software reform program is provided in Box 5.1. The word serendipitous is used as the sponsor capability and selection does not follow the ideal approach, in fact you could argue that the program commenced without a capable sponsor — not trained, no past experience, maintained their very senior permanent role on top of the sponsor role — yet the sponsor garnered much praise from within the program, and the program itself was considered a success. However, the argument is that the approach employed was due to the agency of the individual, one who displayed excellent leadership, personal awareness, and entrepreneurial skills. The project benefited by chance of having such an actor, with the power, it was not the result of institutional governance or the institutional framework.

Box 5.1: Intuitive sponsor skills — a serendipitous counter example

Michael Carmody was the Commissioner of Taxation, Australian Taxation Office (ATO) from 1993 to 2005; the Australian Customs Service CEO from 2006 to 2009; and Australian Customs and Border Force Service CEO from 2009 to 2012.

At the ATO Carmody drove a large ICT reform program to implement the delivery of e-government services between the ATO and its customers. This was a major undertaking; a program of many interrelated projects spanning in excess of 10 years and is perceived as being successful. His role as the champion and sponsor of this program of work was praised several times by other interview participants, particularly his approach and the positive impact it had on the program and its outcomes. He was cited as an exemplar. An assurance lead on the program (Person AB) described him as an ‘amazing man’.

I interviewed Carmody, told him of these positive comments, and asked him questions about his approach.

Interviewer: Why did you take such a visible, strong leadership role in that program from the start?

Michael Carmody (MC): Well, it was about the future of the tax office and tax administration. I guess it comes back to the fact of what I wanted to achieve out of

it... I wanted to take the opportunity to... change the experience with taxpayers. And so, I think the biggest thing that I did and that committed me to it was to talk about the outcomes we were going to achieve, what was going to be the difference in the experience of people dealing with the tax office... and, to me, that is about the whole of tax office and so, if I was not going to take leadership, who should? It was really as simple as that really.

Interviewer: And what would be the risk of you not doing that?

MC: Oh well, the risk of me not doing that is, I think it would languish. I think if people do not see the person at the top of the organisation committed and enthusiastic about what they are being asked to do, then it makes a complete difference to their commitment to their work.

This leadership, sponsorship, and championing from the top by the Commissioner and the success of the program as a result supports a finding that the higher the level of the sponsor in the organisation with an interest in the outcome, the greater the chance of success (Graham et al 1994; Buttle, 1997 cited in Crawford & Brett 2001, p. 3). There was no-one higher in the organisation than the Commissioner.

There were positive comments from interviewees about Carmody's approach to relationship management, particularly between the internal staff and the external implementation partner involved in the program, and the independent support process he instigated.

Interviewer: How did you [as the Sponsor] go about setting up a program governance structure that would be appropriate?

MC: The project teams had their steering groups, [designated ATO officer] met with them regularly... and then, on a regular basis, I chaired a meeting which had all the major project managers and [implementation partner] people there, which we went through where we were at according to the plan and what were the barriers we had. But important to that ... we also engaged another company... to sit in on those meetings and deliver their perspective of how the project was actually going. So, I was not just hearing from the people engaged in the projects, I was hearing from what would be judged as independent reviewers and that gave me a lot more confidence. I mean, there was a bit of tension created by that, I will not kid you.

Interviewer: That is natural.

MC: Yeah, but I thought it was a particularly valuable way of going about it.

Person AB stated that Carmody:

'... chaired twice a month, twice a month.... it ran right through to the end. So, you have got that drive from the top, that ownership at that top executive level... he wanted the people in the room that could help advise him ... then he would call people in, what is hot... bring them in for those topics/issues ... it is mind blowing and works well.'

A Snr Project Manager (Person F) stated:

'For big program changes we would not have gotten as far as we did without the absolute commitment from the Commissioner ... 100 per cent behind it ... he also ensured the organisational resources were made available. Cannot overstate how significant this was to the program, otherwise the program would have, I think, fallen apart due to all of the pressures.'

The above indicates the sponsor model employed by Carmody. As the most senior executive, he was the sponsor, project champion, and a very visible and involved one at that. However, he was not full-time on the role. He employed a model of releasing a senior executive on a full-time basis to manage, for the ATO, the day-to-day role reporting directly to himself. He then engaged a third-party firm to provide both specialist capability and capacity, and as additional support separately engaged an independent advisor to report directly to him. Carmody maintained a relationship management role with all parties, and religiously attended all meetings. Compare this to comments in NSW where an example was cited of the sponsor not attending critical decision-making steering committee meetings.

Carmody was not a formally trained sponsor, and he was asked about the capability of public sector staff to undertake a sponsor role for a large complex ICT software project.

MC: 'I cannot comment on other organisations, I can only comment on what I experienced in the Tax Office ... I don't know anything about coding or the technology or whatever ... but if you can focus on what you are trying to achieve in a real business sense, then it gives you something to measure your success by and gives the stakeholders a reason to be enthusiastic about it'.

Interviewer: 'Do you think that providing more training, support and guidance for people in these leadership roles around these large ICT software projects is of any benefit?'

MC: 'Oh, of course it is, yeah.'

This mini study highlights that despite Carmody not being an experienced or trained sponsor, he was aware of this and his limitations in the role and implemented strategies to provide the support and capability required. Whilst he did not release himself full-time to undertake the role, which is understandable in this case given his Commissioner role, he did assign a 2nd in command on a full-time basis. However, he never abdicated accountability. He led from the front, was a visible champion of change, gave it priority and resourcing, and had clear outcomes focus which he instilled across the organisation. Carmody arguably addressed the key issues identified in the earlier analysis, without any real reference to an APS framework, he built his own. The issue is for the public sector, not every agency will have a Michael Carmody, and therefore a framework to address the sponsor role remains central.

5.4 Conclusion

The perspectives of the elite interviewees for the various sponsor themes indicated there is much commonality across the Australian and New Zealand jurisdictions. There were no wild divergences. The governance of the sponsor role, via the institutional framework has been highlighted as being ineffective, reflected by a dominant perspective that the capability does not exist in any jurisdiction, and that sponsors do not fully understand the role and its responsibilities and accountabilities.

This was perceived to be due to a failure by the senior executive leadership to address the sponsor role and to recognise its speciality and complexity; the sponsor remains, organisationally, a '2nd fiddle' role. This in itself was argued as evidence of a failure to learn from the past, where the sponsor role has been highlighted as a key issue in past poor outcomes. Nothing much was perceived to have changed. The key lesson learned, worryingly, was argued to be a 'learned helplessness' of the role and therefore actors try to avoid the role as it is seen as career limiting with little chance of success, with punishment awaiting. A role seen as the proverbial 'hospital pass'.

There is a small group of entrepreneurs who perceive the issue to be the complexity of large ICT software projects undertaken by traditional delivery methods. These projects were argued to require a very skilled, specialised, and experienced sponsor, who except by chance do not exist in the public sector. Therefore, the argument is to change delivery methods and stop doing large ICT projects traditionally and look at component-based delivery to remove that specialised capability from the equation. This was claimed to improve chances of success, lower risk of failure, and provide the sponsor with some hope and encouragement, not fear. However, this required an actor with the agency to do so, as in effect they are required to step outside the institutional governance framework.

In conclusion these findings can be compared to key points in the literature review (see Table 5-1). Whilst this is a simplified summary, it does serve to highlight a disconnect between what literature argues as good governance for sponsors, and the perceptions of the elite interviewees on the effectiveness of institutional governance for sponsors in the Australian and New Zealand public sectors. They are not aligned.

Table 5-1: Comparison of literature review and findings

Literature review (Chapter 2): key points	Sponsor findings
Sponsor role has evolved and matured historically to be the critical organisational project role (Briner et al 1990; Morris 1994; Stretton 1994; Kerzner & Kerzner 2013)	The elite interviewee perceptions are that the public sector has not evolved in sync.
The sponsor role is critical to good project outcomes (Bryde 2008; Kloppenborg & Tesch 2015; PMI 2018)	The criticality was clearly understood by the elite interviewees, yet it was perceived not to be an organisational priority to address the capability.
The sponsor role can be misunderstood and simplified (Bryde 2008; PMI 2018; APM 2019b)	It was perceived this is exactly what happens in the public sector.
The sponsor needs to be capable and be able to commit time and skills to the role (OECD 2001; APM 2019b)	The sectors were perceived to lack the required capability, and additionally sponsors generally underestimated the time and skills required.
To build sponsor capability organisations need to avoid two pitfalls. Firstly, the executive fails to recognise, support, and make the role organisationally visible. Secondly, a lack of	It was the perception that the sectors do not avoid either of these pitfalls.

Literature review (Chapter 2): key points

Sponsor findings

understanding by the sponsor on the role, makes their contribution ineffective (Crawford & Brett 2001)

Sponsor training is ineffective when it focuses on the incorrect skills, and not on the breadth of disciplines required (Bryde 2008; KPMG & AIPM 2016; Chapman 2017)

Projects do not need a disconnected or reluctant sponsor (PMI 2012; APM 2018)

Sponsor training was perceived as either non-existent or limited in its range.

It was perceived that executives see the sponsor role as one to avoid.

Chapter 6: Project management – superhumans required

'I think for transformational programs, if you think you are going to be able to develop and retain people in-house, and they are going to sit around waiting on a [once in] 15-year project, you are absolutely dreaming.' (Person Q, ICT Assurance, NZ)

6.1 Introduction

Project management is the second of the three core roles/disciplines to be analysed. The literature review (Chapter 2) highlighted that effective project management is critical to the successful delivery of projects. For an organisation to be effective in project management it requires maturity in interrelated areas (PMI 2013b). For example, the organisation needs to have the knowledge of the portfolio/program/project process. Project management must be incorporated within the organisational strategy, as it is a means of identifying and delivering business objectives. It needs to have competent resources to undertake the project roles. Finally, it needs the processes that guide project management within the organisation.

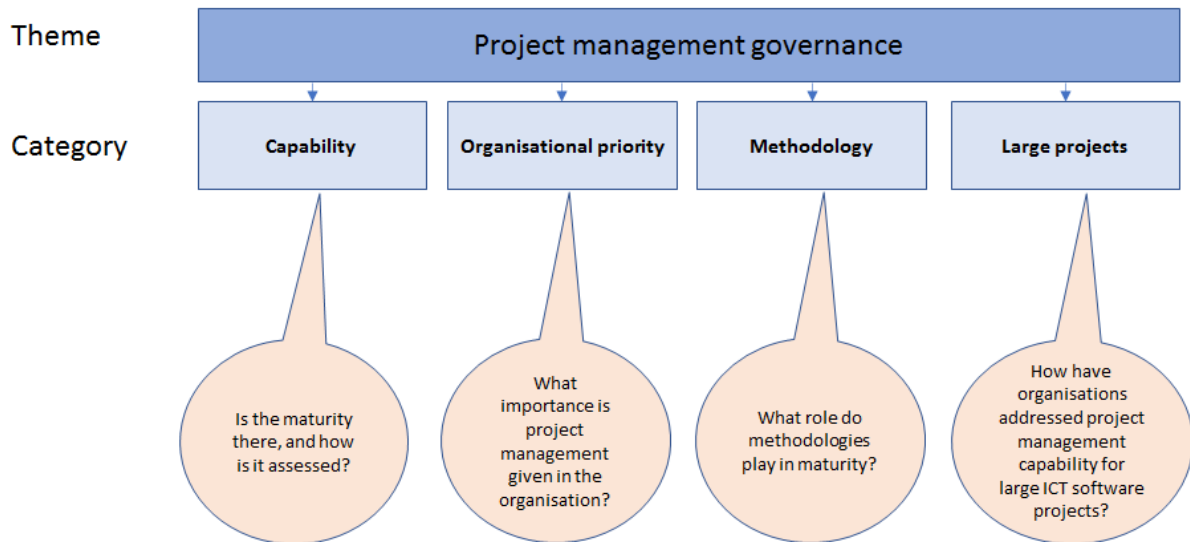
Given the findings from the literature review this chapter aims to, via the interpretation of the elite interviewee perspectives analyse the effectiveness of project management governance for large ICT software projects within the Australian and New Zealand public sectors. The interview questions were aligned to four categories²⁶ identified from the project management literature review (see Figure 6-i). They are:

- Capability: does the sector have project management capability, and is an assessment of this capability part of project planning and initiation?
- Organisational priority: what importance is project management given in the organisation?
- Methodology: what role do methodologies play in maturity?
- Large projects: how have organisations addressed project management capability for large ICT software projects?

²⁶ It is acknowledged that the discipline, roles, and functions of project management are many and diverse, too many to be covered in this section.

For each of the above categories, perspectives from the elite interview data are analysed, supported by vignettes from those interviews. These findings are then summarised and aligned to the theoretical concepts, followed by a short conclusion.

Figure 6-i: Categories for project management governance



6.2 The elite interviews

6.2.1 Capability: is the maturity there and how is it assessed?

The elite interviewees perceived that the capability for large ICT software projects does not exist within the Australian and New Zealand public sectors. No interviewee argued otherwise. Responses to the question, ‘Does your jurisdiction have the project management capability to undertake large ICT software projects?’, were generally a short and sharp, ‘no’. However, perhaps the following quote sums these views up:

‘...it is lacking. We do not have the [project management] skills.’ (Person E, Snr Executive, NSW)

Following on from these responses, the interviewees were asked if they believed this lack of capability had been a factor in past poor outcomes. The universal perception was, yes.

Responses included:

'... absolutely a factor, it is a major factor' (Person C, IQA, Private sector)

'Couldn't agree more.' (Person AD, Snr ICT Executive, APS)

'I've got to agree' (Person S, CIO, NZ)

There was little awareness from the elite interviewees of a jurisdictional requirement for a project management capability assessment to be undertaken prior to the commencement of a project, or a means to do so, at best there was vagueness. As an example, a Snr ICT Assurance Officer (Person AE, APS) stated:

'Probably best to ask the PM&C²⁷ ... they do have sort of whole government wide kind of initiative and capabilities, so they are probably best to answer that question, because I am not sure what is in place around that.'

This was a little disconcerting, given their role. Another APS Senior ICT Assurance Officer (Person AD) stated that several years ago there was a P3M²⁸ community of practice forum operational in the APS, which also undertook informal maturity assessments, but this had now stopped. They argued whilst that was operational, there was evidence of improvements in project management capability. The majority of interviewees argued that such an assessment should be mandatory prior to a project commencing, and that the project should not commence if the maturity and capability was lacking.

However, interviewees made a clear delineation between project management capability for large ICT software projects or programs of work, and project management capability for smaller projects, such as BAU²⁹ projects, which was argued to be much better. However, even for the smaller projects it was also a common view that this was not as a result of strategies within the institutional framework, but rather as a result of initiatives within individual agencies. An APS Chief Executive (Person AY) claimed within the APS this was necessary as there was no APS-wide capability development program. This was a similar perspective in New Zealand, with a CIO (Person L) arguing that project management capability development was:

²⁷ Prime Minister and Cabinet

²⁸ Portfolio, Programme and Project Management (P3M)

²⁹ **Business As Usual**

'... being left to individuals [within agencies] to take action ...[as] there is no over-arching approach to address the issue'.

Whilst there are, albeit independent, initiatives to address project management capability for the smaller projects, the interviewees claimed capability for the large ICT projects is being addressed separately, at the time of the project. An example of this was from a CIO (Person S, NZ), who stated:

'... we have an in-house team of reasonably capable people that are all well qualified in PRINCE2 and those things. Where my internal team tends to peter out is when we have got large-scale business change initiatives ... so we tend to complement that with some external.'

The use of external staff, typically contractors, was common across jurisdictions. These resources are typically used to either supplement existing capability and capacity, or to provide that capability and capacity, such as one large agency, where the Snr Project Manager (Person N, NZ) stated:

'... our whole team has been contractors.'

This mix varied from jurisdiction to jurisdiction and even between agencies in a jurisdiction, but a common argument for this approach was the flexibility that contractors provide in being able to readily increase and decrease capacity based on varying organisational factors and project complexity. A Snr ICT Assurance Officer (Person AT, NT) stated:

'... our resource pool is predominately external, contractors, this gives us the ability to scale up/down as required ...'

Tempering this approach of employing contractors were two common perspectives. Firstly, these contract resources can be quite itinerant, lack loyalty to the agency, which can result in a high staff turnover. A Snr Project Manager (Person N, NZ), themselves a contractor, posited this was because contractors themselves have flexibility and can leave to:

'... move with the money ... [and] follow the interesting projects ... [and] leave difficult projects.'

Secondly, being a contract resource in itself is no guarantee of capability, but rather availability. That is, agencies can become focussed on capacity, head counts, 'getting bums

on seats’, at the expense of capability. These factors were argued to in fact compound the capability gap, and as a CIO (Person AI, Vic) argued:

‘... using capacity in lieu of capability ... leads to sub-optimal outcomes.’

A common issue with these strategies, was perceived to be that there is a tendency to concentrate on building up a collective of capable project managers rather than to address the wider project management governance requirements such as the culture, tools, processes, structure, assurance, support and training across the agency or jurisdiction. A former public sector CIO, now a private sector CIO (Person AI, Vic) stated in their private sector role the entire organisation was project focussed with the supporting project management governance and resulting capability, whereas in the public sector role they saw:

‘... very few if any people in the organisation with that capability [or awareness]’.

Finally, it was perceived that agencies with an effective Project Management Office (PMO) were more likely to have better organisational project management capability. However, interviewees struggled to identify effective examples in their jurisdiction. Interviewees claimed whilst some agencies had tried to implement these, the outcomes were variable. The Centrelink PMO was cited as one exemplar (Person G, CIO, APS). A Snr ICT Assurance Officer (Person R, NZ) claimed that the existing PMOs failed to provide a quality service. A Snr Executive (Person B, NSW) argued from experience that NSW agency PMOs tend to concentrate on financials rather than aiding the overall dissemination of the project details to stakeholders and working collaboratively with the project team.

In summary project management capability was perceived to not exist for large ICT software projects, however it was considered better for smaller projects. Capability building is largely the result of individual initiatives rather than jurisdictional efforts, but this has concentrated on project managers rather than the broader organisational integration of the project management discipline. There is also a lack of awareness of any need to assess capability prior to the initiation of a large project, yet there is agreement this should happen, else do not start.

6.2.2 Organisational priority: what importance is project management given in the organisation?

There was a clear understanding from the interviewees that project management is not unique to the public sector, it is a world-wide discipline, the knowledge exists, and as stated by Professor Ofer Zwikael, Associate Editor of the *International Journal of Project Management*, as a result the public sector does not have to ‘reinvent the skills’ as they are transferrable between sectors and industries.

Given the discipline and skills are well defined, the common perspective on a public sector failure to address project management capability was that it simply was not an organisational priority to do so. Reasons for this varied, but some vignettes from the interviews include:

‘... I do not think we as the public sector have recognised that project management is a core [organisational] capability.’ (Person A, CIO, APS)

‘[Executives view] that project management is easy, and any sensible person can do it ... it is not undervaluing, it is not understanding’. (Person C, IQA, Private sector)

‘The focus I saw in the organisation was the business of government ... fulfilling the priorities that the government of the day has established, and therefore [little priority was given to the role of project management in delivering these]’ (Person AI, CIO, Vic)

‘At a senior organisational level there is a lack of experience in driving organisational change, which leads into issues with recognising the discipline of project management and implementing strategies to address skills gaps.’ (Person L, CIO, NZ)

Similar to perspectives in the Sponsor chapter (Chapter 5), it was also argued that this lack of priority is because public sector organisations are not project-based organisations. In Victoria, two Snr ICT Assurance Officers (Persons AF&AG) argued project management capability varied across agencies due to their project-based culture or lack thereof, with *VicRoads*³⁰ argued to be quite mature as projects to build roads are a core part of their business, whereas this project culture is not the case in other agencies. However, even here there were cautionary perspectives. A Program Director (Person F, APS) with experience in projects

³⁰ ‘VicRoads is a statutory corporation within the Victorian Government. Our purpose is to manage a safe, reliable and sustainable arterial road system as part of an integrated transport network.’: *VicRoads*, viewed 12 August 2020, <https://www.vicroads.vic.gov.au/about-vicroads/our-customer-charter>

across the APS, argued that despite some agencies touting maturity in project management and being project-based, this in fact did not meet the requirements of the project. A private sector CIO (Person AI, Vic), who was a past public sector CIO, argued that their current employer was an example of a project-based organisation, as projects are critical to the delivery of their services and infrastructure, hence internal capability is a priority. In comparison they argue during their time in the public sector this was never the case.

Also similar to the sponsor role, there was a common perspective that senior executives fail to understand the project management discipline and its organisational role, hence a lack of executive commitment to drive this change. Two Snr ICT Assurance Officers (Persons AF&AG, Vic) claimed that there is:

‘... no recognition upstream that project management is a discipline and is a current gap.’

A CIO (Person G, APS) argued that executives are aware of project management needs but fail to prioritise this as they do not perceive any professional gain in addressing the issue, and they therefore prioritise other organisational issues they deem will provide greater personal benefit. That is, they fail to see any ‘real benefit in it for me’ in addressing project management capabilities.

It was further argued that senior executives still assume that a skilled staff member could adapt to a project management role. A Snr Executive (Person E, NSW) argued this is evidence of senior executives not understanding the discipline, and as a result view project management as:

‘... easy and pretty much a lot of sensible people can do it.’

Aligned to this perspective, a Snr Executive (Person X, NZ) claimed in their experience that agency project management staff are in these roles by default, and that approach has had negative impacts on projects. They stated:

‘... people would morph into project management through sort of a leadership section head type route and some of them had never had formal project management training, but just learned by doing ... it is very obvious to us those ones as opposed to the professional project managers ...’

A CIO (Person, APS) argued that this ‘rebadging’ of staff to suddenly become project managers is a major organisational failing. Aligned to this there were perspectives that until

project management capability was an organisational pre-requisite for career advancement, the capability will never be addressed. A CIO (Person G, APS) argued, this status quo would continue, as it will not gain senior executive buy-in until:

'... [project management capability is a] pre-requisite for me to get to the next level.'

There were also perspectives that this failure of senior executives to understand project management is a legacy of viewing these ICT projects as IT projects rather than the business change projects that they are. A Snr Executive (Person E, NSW) argued that being a technically competent IT manager is quite a different skill set to 'running a business project' and that the public sector still has not understood this. This led to organisations appointing the CIO as the project manager/director. As evidence that this remains an issue, a CIO (Person W, NZ) confessed they had recently taken on the sponsor role of a large ICT project in their organisation. They admitted that this was 'wrong', as it was a business project not a technology project, however justified this by stating currently the capability did not exist elsewhere in the organisation.

The differences between public and private projects were also argued to be another factor in making project management capability an organisational priority. Private projects were argued to be driven by a market imperative, delivering its core services, leading to a culture of project management being built to support this delivery. On the counter-side it was argued this imperative is missing in the public sector hence it is not given organisational priority. The lack of organisational priority was also argued to be reflected by a lack of appropriate funding to support capability development initiatives. This was evidenced in the following quote from a Snr ICT Assurance Officer (Person Q, NZ), who when asked about organisational capability development initiatives, stated:

'Although we have an appetite for it, when money is scarce, capability is the first thing to go. I would say really the only capability things that we do here are running communities of interest, which are largely self-help.'

To counter the common perspective of a lack of an organisational priority there was an example of an acknowledged need to address this at a jurisdictional level. Within the APS, the

Digital Transformation Agency (DTA)³¹ was created, and a Snr Executive (Person AD, APS) stated that the DTA was to take on a central role in addressing this capability across the APS. However, at the time of writing there is little evidence available of what has been achieved, nor were any of the other APS interviewees aware of any DTA initiatives in this area.

The other issue highlighted was that to implement initiatives is challenging and long-term, it is not an easy task, and takes continued organisational commitment; factors that may arguably impact on the DTA plans. A CIO (Person G, APS) argued that these initiatives can happen whilst so much other change is underway, and as a result ‘fatigue’ sets in as it becomes ‘administratively burdensome’, and the initiatives then become a victim of organisational capacity constraints. There was also a perspective that leaving agencies to independently implement strategies to address capabilities leads to a disparity between how it is applied and even prioritised within the agency, which then does not address jurisdictional capability. A Snr Executive (Person BM, Tas) stated:

‘... approaches vary across the jurisdiction due to agencies largely tackling the issue independently, not a consistent approach’.

A CIO (Person G, APS) provided this perspective:

‘... you could have a quite a disparity in terms of what is applied ... what one agency may see as B-level quality, could be a C or even less for another ... [you need to be] looking at whole of APS capability...’

Political influence was also perceived to be an additional organisational factor limiting, and indeed changing the ability to address capability. The argument was, for example, the jurisdiction’s staffing policy could vary within as well as between government terms. One government may support the use of contract staff instead of a permanent head count, the next may not. There may also be caps placed on either or both permanent and contract recruitment. The perception was this creates a moving target and makes long-term capability planning and retention difficult. A Snr Project Manager (Person N, NZ) citing past experience in resourcing a team for a large project that ran across government terms:

³¹ The DTA ‘oversee significant ICT and digital investments, assurance policy and framework, and the whole-of-government (APS) digital portfolio’, *Digital Transformation Agency*, viewed 12 August 2008, <https://www.dta.gov.au/about-us>

'The National Government, they reduce the public sector head count right down. So, anything that is project linked, they will not have permanent jobs for it. They will just bring in contractors as and when they need them. Then once we changed to a Labour government, it goes the other way.'

The perceived impact was that agencies who have carefully built up a capable team of contract project managers may lose this capability and capacity overnight due to these policy changes. The other political factor raised was that the agencies and their executives prioritise a focus on political initiatives, in delivering the business of government; this was argued to come at the expense of actually addressing the capability required to deliver those outcomes. This is perhaps best summarised by a CIO (Person AI, Vic) who argued that a focus on political initiatives has led to a lack of organisational focus on the:

'... mechanics of running the organisation that needs to underpin that capability.'

The assumed cost of project management capability was also perceived to be an organisational limitation. An external consultant specialising in large government ICT projects (Person C, NSW) argued the norm is to expect about 20 per cent of project costs to be the result of project management. Based on their past experience they stated agency senior executives have declared that this overhead is unacceptable and therefore was reduced, resulting in less capacity and capability, which they argued inevitably led to poor outcomes and the resulting cost of those, neither of which were not factored into the executives' logic.

Raised in all jurisdictions, excepting the NT as a factor in being able to address capability was the public sector limitations on pay scales, grades, and the relationship of hierarchy to these. This was argued to limit the ability to compete with the private sector to obtain and retain senior and experienced permanent project management capability. A CIO (Person S, NZ) stated in their experience this has always and will always be a factor in obtaining the most capable project management resources as no competent contractor in a market short of supply is ever going to take a '\$100k pay cut' just to join the public sector. A perspective on this issue from a past NSW Government Minister (see Box 6.1) highlights this is not just an issue for project management capability, but for the public sector in general.

Box 6.1: A problem with getting the required capability — A Minister's perspective

Adrian Piccoli was the NSW Education Minister from 2011 through to 2017, resigning from Parliament in late September 2017. Shortly after this he was appointed to the role of Director of University of NSW's Gonski Institute for Education. During his time as Minister, Piccoli was the Minister responsible for the exceptionally large *Learning Management and Business Reform* (LMBR) program. In an interview with Piccoli the problems with addressing project management capability for LMBR and other large ICT software projects was discussed.

Interviewer: Does the public sector have project management capability for these large ICT software projects?

Piccoli (AP): I never saw a lack of trying, I never saw they took it less seriously, I just do not know they have the capacity to get the people they need ... what does KPMG pay for an IT guru, more than AUS\$300k, which is more than the maximum salary band for an IT guru in the public sector.

Interviewer: How can the public sector build and maintain these skills internally, particularly when even large private firms possibly would not have these people sitting in the organisation?

AP: That is right, and look they tried to get people with varying degrees of success. People came in and people went out. It just got too much. It does not just apply to IT, the head of finance is a Deputy Secretary on an AUS\$300k salary running an AUS\$12b organisation, is it any wonder they cannot give you an accurate monthly finance report at the right time, they try their best but ... I think the constraints of the public service are part of the reason why this does not happen ... if you are the CEO of Health and getting paid AUS\$350k, people who run Snowy Hydro get paid more than that. Hospitals have bigger budgets than Snowy Hydro. I think this is a genuine problem ... if you want these public sector organisations to run like businesses you have got to pay to compete.

GD: Do you think the public sector will ever resolve this limitation?

AP: It is a genuine question. You are asking the CFO of an organisation to look after an AUS\$12b budget and you are offering AUS\$350k, so she/he is not in it for the

money. They are absolutely vulnerable to public scrutiny ... this goes to that capacity issue. What capacity do you have to manage a big IT project like that when you cannot compete to get resources, when you are competing against whoever such as SAP to get the same resource. They have lots of money and of course they are going to do you over in negotiations.

This mini case highlights the limitations across roles, of which project management is one, in the public sector being able to compete with private sector remuneration rates. The size and complexity of many public sector organisations and their projects is greater than many large private sector organisations which offer greater remuneration without the additional political complexities.

In an interesting anomaly there was one exception to this organisational issue, and that was in the NT. The NT interviewees claimed that its size and geographic location has resulted in ongoing difficulties in attracting skilled project management staff. Therefore, the usual approach is to source from outside of the NT, using incentives. This has led to the NT paying its skilled project management staff rates above those in other states, or as a Snr Assurance Officer (Person AQ, NT) stated, these people can:

'... simply name their price.'

However, a NT private sector executive (Person AW) argued that whilst this strategy may attract resources initially it has failed to address the long-term retention of those skills. The argument was money was attractive in the short-term but gaining commitment to stay in the NT was more difficult, hence capability and capacity ebbs and flows with these people. To try and address this the NT Government has a program underway called the *'Welcome to the Territory' incentives*³² that provides monetary rewards for relocation to the NT, AUS\$7k initially and then another AUS\$7k after five years. ICT Project Managers and ICT staff are in the highest priority skills set.

In summary the public sector was perceived to not prioritise, support, and fund the development of project management as a core organisational discipline, and had a focus on a

³² Northern Territory Government, viewed 13 August 2020, <https://nt.gov.au/employ/for-employers-in-nt/skills-existing-and-needed/hard-to-fill-jobs-in-the-nt>

role rather than the discipline. In addition, it was claimed to be left to agencies to independently address the issue, leading to disparities within and across jurisdictions. There was also a claimed reliance on skilled external staff, but even then, capability and capacity were stated to be hard to obtain.

6.2.3 Methodology: what role do methodologies play in maturity?

The widespread implementation of project management methodologies or practices such as PRINCE2 across the Australian and New Zealand public sectors was surprisingly topical, with some interviewees becoming rather agitated.

The interviewees understood PRINCE2³³ to be a series of processes, steps that you should have in a project, and as a result you progressively deliver certain products/artefacts. The common perspective was that as a result of implementing PRINCE2 there has been a claimed organisational uplift of project management capability within the jurisdictions. However, the elite interviewee argument was that PRINCE2 does not manage a project, with all of its tasks, daily challenges, personal and vendor relationships, twists and turns, all that encompasses the discipline of project management. Therefore, the elite interviewees clearly perceived that any claimed uplift in project management maturity as a result to be incorrect. In fact, they strongly stressed that point. Some relevant vignettes are:

‘... as soon as [I hear someone say PRINCE2 says this or that] ... those are warning signs ... my alert goes here, my alarm goes there, because that means someone is trying to hide behind a methodology ...’ (Person E, Snr Executive, NSW)

‘We pay too much attention to methodology ... it is almost like we are paying lip service rather than genuinely applying project management disciplines.’ (Person R, Snr ICT Assurance, NZ)

‘... my view is that sometimes people get too caught up on the methodology as opposed to the basics. Basics meaning, how do you put the controls in place to monitor and deliver a project as opposed to following PRINCE2.’ (Person AF, Snr ICT Assurance, Vic)

³³ Refer to the Glossary for a description of PRINCE2.

'... people do not do it well; they do not know how to do project management and the number of people who will tell you that they are PRINCE2 trained; well PRINCE2 training has a lot to answer for in my view.' (Person J, Program Director, NZ)

Maintaining these methodologies was also argued to require specific expertise. For large complex ICT projects, an APS Program Director (Person F) stated the jurisdiction lacks expertise in how best to apply PRINCE2. A Snr Executive (Person E, NSW) argued that whilst it was claimed PRINCE2 was mandatory in NSW to apply consistency, this in fact does not happen, and there is no consistency across projects. They stated:

'... [PRINCE2 practitioners] trained, probably in the same organisation, they will apply the methodology in a very different way ... I'm saying it is irrelevant [the methodology].'

The use of Gateway Reviews also came in for criticism as a claimed method in addressing project management maturity. Similar to the PRINCE2 comments the argument was clear, it is an assurance process and one that can be valuable, but it alone does not provide the organisation with project management maturity. A Snr Project Manager (Person AB, APS) with extensive experience in past APS projects, when asked about Gateway Reviews and their effectiveness in addressing project management maturity, put their head in their hands, sighed, waved their hands and through gritted teeth answered:

'No. Bloody Gateway Reviews.'

In summary, the argument was that the methodologies cannot alone be claimed to uplift project management capability, they assist in project assurance.

6.2.4 Large projects: how have organisations addressed project management capability for large ICT software projects?

The elite interviewee perspective was clear and consistent when it came to the selection of the Project/Program Manager/Director for a large ICT software project. For these large, complex projects such as payroll implementations, they are generational. Once every 10 to 15 years or so. Therefore, it was claimed they have particular skill sets, not only gained from formal training and qualifications but from past vast experience in these projects, including the required experience in vendor management. An IQA (Person C, NSW) with decades of experience in providing an assurance role for large government projects posited:

‘... most agencies will only ever do those [large projects] once every 10 years. So, when they are about to start it, who inside the agency has any experience in running a project like that, probably no-one. So, therefore the smart agencies go and get an experienced contractor, or some heavy hitting Program Director who has done it before.’

No public sector interviewees believed that their organisation has these skills in-house, and revealingly, none believe they should have them. These were argued to be specialised skills, so in the 10/15-year duration between large projects, what is this person to do if they were in-house? Supporting this view, a Snr Executive (Person AM, NT) stated they recently hired an external resource specifically for a large new project as they:

‘... could not sustain a person like that in a normal office environment.’

A CIO (Person AH, Vic) argued it is simply not practical to have these resources in-house, as retention of those people becomes a problem. They defended this argument by stating:

‘... the idea you could spend years training people to be ready for something that might happen in two or three-years’ time is good in theory but unlikely to happen in practice. The very people you have invested in are unlikely to still be there ...’

A Snr ICT Assurance Officer (Person Q, NZ) argued it not only impractical to have such a resource in-house, but it was also delusional. They argued:

‘.. for transformational programs, if you think that you are going to be able to develop and retain people in-house, sit around waiting for a once in 15-year project, you are absolutely dreaming.’

The common argument was that these skills should not be in-house but purchased externally at the time required, buy them in as a capability and then dispense with when finished. An APS Program Director (Person F) argued that the APS would ‘never be big enough to have the skills required’ and therefore needed to look externally for the expertise. However, they also posited relevantly that this is not an approach specific to the public sector, and claimed many large private firms follow the same approach for the same reasons.

It was also argued that even with the many commonalities of the project management discipline, large ICT software projects are not all the same, and depending on the solution the experience and skills required may differ. Therefore, buying in experience specialised to the project was another advantage over any notion of having these project/program manager skills

in-house. As an example, it was argued that the project manager skills and experience required for a SAP payroll replacement differ from an Oracle financial solution and by buying capability, there is the advantage you purchase capability targeted at the solution.

Additionally, it was argued as ensuring the currency of project manager skills, for example payrolls evolve over 15 years, and buying in a resource with current skills removes the need for the organisation to maintain those skills internally. A Snr Executive (Person E, NSW) with extensive experience in large ICT projects provided this argument in support of these perspectives:

'... that is why you do not deal with that; you buy that experience.'

However, there was also a common perspective that this resourcing approach is not always applied. There were examples cited in the interviews where the agency has continued to appoint an internal resource even though that person was not deemed to be capable, and that this was done despite the risk being acknowledged. A CIO (Person AK, Vic) expressed the view of many interviewees with this approach by stating:

'Giving someone internally an opportunity can set the project, and that person, up for failure.'

This was argued largely to be due to a cost issue. The purchasing of the required specialised skills-set and expertise does not come cheaply, and agencies have balked at the cost, which in turn resulted in resorting to internal resourcing or cheaper external options. Both of these were argued to ignore the capability requirement and also be false economy. The cost of failure is severe compared to the cost of a capable Project Manager. These perspectives were supported by an IQA (Person C, NSW), who stated that from their experience in past large projects:

'... those guys and girls cost money and agencies can balk at paying that sort of money for people ... [they then] try to keep those roles internally and get into trouble.'

New Zealand interviewees argued this was and still is an issue, with senior executives and government not supporting the engagement of a suitable and capable resource, which a CIO (Person O, NZ) posited was because of a fear the media will find out the cost and:

'... splash it across the front page of a paper.'

Instead, it was claimed they force the project into engaging a cheaper less capable option and immediately endanger the project, with executives and politicians simply not understanding the cost benefit that capable resources bring to a project. A CIO (Person L, NZ) added that the willingness to pay can also ‘depend on the mindset of the organisation and leadership’ at the time and reflects their understanding of the importance of having these skills.

For the broader project team, the overwhelming consensus from the elite interviewees was that it is just a simple fact that for these large complex ICT software projects the project management capability will be a mixture of external and internal capability and capacity. A Snr Executive (Person BL, Tas) stated:

‘... all projects I have been involved in have had a mix, typically staff minimum viable project size internally ... and buy in the rest.’

Another Snr Executive (Person AD, APS) claimed this was just the ‘nature’ of these projects as there will always be a need to supplement internal resources with external. Two CIOs (Person AI, Vic & Person S, NZ) claimed their agency concentrated on developing and maintaining capability to support core business processes, and always bring in external resources for larger projects. This was confirmed by private sector elite interviewees to be exactly the same blended process that they have used, although these interviewees, differently to the public sector interviewees, also stressed the importance of internal project management resources retaining responsibility and accountability for the project and typically fill the Project/Program Manager internally. David Boyle, a former CIO of the Commonwealth and National Australia banks, described their approach as:

‘... I prefer to put a blended team together of existing people who know the existing environment and augment them with skills and capabilities around the targeted [system] ... but, invariably I like it to be led by somebody who [is not going to] pick up stumps and leave at the end of a so called delivery day ...’

The perceived need for this blended team was argued for a number of reasons. Firstly capacity. These large projects can require major capacity boosts across a wide range of project tasks. Secondly, the capability to provide the specialised project management discipline. A Program Director (Person F, APS) stated this is acknowledgement of the different capabilities required for ‘project and program expertise’. There are examples of this being undertaken successfully after an agency realised, they neither had the capability or capacity to undertake

the project, this was the model successfully employed by Michael Carmody for the ATO change program (see Box 5.1).

Jurisdictional size, as was the case in the Sponsor chapter, was also raised as an issue. Across all jurisdictions there were perspectives that finding a suitably qualified and experienced external Project/Program Manager within their jurisdiction may not be possible and the only option may be to source from other states or even internationally. This was argued to be another factor in why any notion that the sector should have this in-house capability is flawed. In addition, obtaining the overall required project management capability and capacity to fill the required roles for these large ICT projects was also perceived to be impacted by jurisdictional size. The New Zealand interviews confirmed that all agencies struggle to find the required capability and capacity. The argument was Wellington is small city with heavy demand and New Zealand government agencies end up fighting for the same resources. One undesired outcome of this reduced talent pool is that agencies end up with less than capable project management capacity. To counter this New Zealand agency interviewees stated once they found a good contract resource, they tried to keep them from other agencies as best they could. It was also argued by a CIO (Person W, NZ) that given this demand for contractors, an impact is that it is very hard to attract people to a full-time permanent position, which reinforces the need to rely on contract staff.

This is an interesting conundrum, for regardless of jurisdictional size, a large ICT software project will have the same demands, complexities, and resource requirements wherever this is undertaken. The NT is the smallest jurisdiction with a population of 245,000³⁴, Darwin is remote from the major centres, and as identified earlier, the NT interviewees stated attracting the required project management capability and capacity is a major challenge. The impacts of this challenge in planning for large ICT projects in the NT is discussed more in the Forecasting chapter. The Tasmanian interviewees stated this issue also impacts them, with a Snr Executive (Person BM, Tas) stating they are always impacted by capability and capacity constraints and is a reason why they use large organisations such as Deloitte to meet requirements.

³⁴ Department of Treasury and Finance, Northern Territory Government, viewed 13 August 2020, <https://nteconomy.nt.gov.au/population>

When asked if there were any solutions to this problem, there were mainly shrugs of the shoulders, whilst a small number of interviewees suggested some internal-jurisdictional or cross-jurisdictional ‘talent pool’ may be a viable option. For the APS, the notion of an internal jurisdictional capability pool was not supported by a CIO (Person A, APS) who argued that given the APS is missing this capability, options of looking to gain expertise from another APS agency do not exist. A CIO (Person O, NZ) with previous jurisdictional wide responsibilities argued that any notion of the public sector agencies building ‘a cadre’ of highly skilled project managers would not work well in either Australia or New Zealand. They argued that all jurisdictions across Australia and New Zealand would not be large enough individually to warrant such an effort, nor is there that culture of collaboration across jurisdictions or even within jurisdictions. Person AA (Snr ICT Auditor, NSW) is uniquely placed to provide a perspective this issue (see Box 6.2).

Box 6.2: An ICT Auditor’s reflection — scheduling delivery and repurposing project management capability

A NSW ICT Auditor (Person AA) has extensive experience in auditing large government ICT software projects. Due to this lengthy experience, they have had the advantage of seeing many similar projects being run in the same jurisdiction. For example, SAP financials has been implemented in several NSW agencies. Whilst there were organisational differences in each agency, in essence it is the same solution. Assuming these agencies need to do this at the same time or with some cross over, each has to form their own team, finding the internal and external project management capability. This means they are competing for already limited resources, and each of these teams need to go through their own learning curve.

As has been identified in the interview perspectives, it is commonly argued that capability is uplifted due to past experience. Therefore, throughout these projects as they progress with their own varying degrees of success the team builds that experience of implementing SAP financials in a NSW government agency. Person AA used an example of a successful implementation in one agency after which the team disbanded and the knowledge left. At the same time a new project was commencing, and they recruited a totally different project management capability, and this project had to learn from scratch and in turn encountered many of the same issues yet had poorer outcomes.

Reflecting on this, Person AA posited that project management resources engaged for a project in one agency, who successfully delivered that solution, could be then repurposed, and

move on to the next. That obviously requires some asset replacement planning and scheduling within the jurisdiction, however the principle is simply that with this foresight, experience and capability can be built on and retained and is a jurisdictional coordinated approach rather than an agency by agency, ‘do the best you can with what is available’ approach.

This thinking is aligned to a proposal put forward by Mayhew et al (2013, p. 6) following research into the New Zealand public sector. They argue the sector spends time building up capability for a project ‘often at a painful cost’ then they let them go, so in effect organisational capability is not improved. They argued for the creation of a central New Zealand organisation to improve long-term capability.

Interestingly this notion of retaining the services of a skilled and experienced project management capability for large ICT projects also found a voice in a very experienced and senior executive (Person AL) from a firm with vast experience in providing project management capability into large government ICT software projects. They also argued that one strategy to provide consistent and proven capability and experience for these types of projects is for government, whether that be by jurisdiction or national, is to create a contract pool and ‘ring fence them’ and have them move between projects. Their argument was this maintains capability and an ongoing incentive to remain part of that pool. A New Zealand Snr Executive (Person K) argued that there is also a case for Australia and New Zealand to address this together and share resources. However, given earlier interviewee perspectives that cooperation and collaboration within jurisdictions is hard enough, the implementation, management, and maintenance of a cross national/jurisdictional team would arguably add a whole new layer of complexity.

To solve all of these issues a perspective from the Sponsor chapter was also present in the project management capability interviews. That is, do not attempt to do large projects. Avoid them and think of other ways to deliver. A CIO (Person AH, Vic) stated that by undertaking smaller component based, or Agile³⁵ project delivery, their organisation had been able to build both project management capacity and capability and had resulted in the recent successful delivery of multiple projects, with no failures. They classified this as ‘compounded

³⁵ ‘Agile approaches to project management aim for early, measurable ROI through defined, iterative delivery of product increments. They feature continuous involvement of the customer throughout the product development cycle’: Project Management Institute (PMI), viewed 18 May 2020, <https://www.pmi.org/learning/featured-topics/agile>

organisational learning’ and used an example of child’s schools saving program as a simile. The logic being at school you put a dollar in a month and then at the end of the 12 months you have AUS\$12 and the child has learnt the value of compounded saving (learning), and that they are not required to put in AUS\$12 at the end of the year. If this is applied to smaller, Agile projects, then by doing a number of small projects at a fast pace using project teams and managers, the capability to deliver is compounded and capacity builds accordingly. The capability was argued to be iteratively developed as is the awareness of the project management discipline and Agile approach in the organisation. An example of an agency successfully using Agile delivery is provided in Box 6.3.

Box 6.3: An example of a successful Agile experience in the Victorian Public Sector

This example is provided from a paper written by Dr Stephen Hodgkinson (Hodgkinson 2019), the CIO of the Victorian Department of Health and Human Services (DHHS), and the Director of the Business Technology and Information Management (BTIM) branch within the DHHS.

In 2014 in a response to low IT project capabilities, poor project outcomes, internal frustrations with IT, and inadequacies with traditional project management and development methods a different approach to project delivery was developed, called Platform + Agile. This was trialled on a new on-line system for *Social Housing Applications*, which won industry awards. The second relating to *Family Violence* was successfully delivered within nine months. Since these early successes, the approach has continued to evolve and been applied to additional DHHS projects such as the *Victorian Health Incident Management System* and the *Personal Hardship Assistance Program*. This was claimed to lessen capability required for traditional ‘large’ projects by breaking the project in to manageable components enabling a claimed successful delivery of ‘over 40 new business systems ... over the past three years’. In addition, there is evidence of ongoing learning and capability development within the DHHS/BTIM as each project progresses.

The use of Agile delivery was not restricted to Victoria, there was evidence its use was growing across jurisdictions, such as a Snr Assurance Officer (Person AE, APS) who stated its ‘use was growing’ within their agency. A Snr ICT Executive (Person AD, APS), with jurisdiction-wide responsibilities, stated they review proposals for projects and look for evidence of alignment to digital strategies, such as Agile delivery options. The other factor

claimed by the public sector interviewees to be common to this approach was that typically the initiative was agency driven and not the result of a jurisdictional-wide initiative, such as the Victorian examples cited earlier. There was also a common perspective on the benefit of undertaking projects via Agile delivery rather than as a large project. It was argued to help de-risk large project resourcing, in both the obtaining and retention of resources. For smaller, component-based projects, where the project management capability was largely in-house, it was argued to improve loyalty, interest, commitment, and retention (Person AH, Vic, CIO).

In summary, the dominant perception was that Project Manager/Director capability for large ICT projects does not exist internally within the public sector, and that it should not, it needs to be sourced externally. The project team was argued to require a blend of internal and external resources to temporarily boost capability and capacity. Problems were stated to exist in all jurisdictions in acquiring and retaining the resources. To negate these issues, it was perceived that component based/Agile delivery was an alternative.

6.3 The findings and their relationship to the theoretical concepts

6.3.1 Capability and capacity building

Firstly, it was perceived that the Australian and New Zealand public sectors do not have the project management capability to undertake large ICT software projects. It was argued that if the capability is not there, then the project should not commence, hence agencies should be assessed prior to commencement. However, project management capability for smaller projects was stated to be better as this has been the focus of the various jurisdictional efforts to uplift capability. This was claimed not to be as a result of a coordinated jurisdictional approach; hence agencies have to deal with this independently and as a result capability varies from one agency to another. However even for the smaller projects, capability was claimed to have a heavy reliance on contract staff so the permanency of that capability and capacity is always at risk. In addition, these strategies have largely concentrated on project manager capability rather than addressing the full suite of project management capabilities required.

Secondly, it was perceived that politics and government policy have, and will continue to do so, impact on the ability to address project management capability, particularly when there is a focus on capacity, as a prime strategy in uplifting capability. Policies on both permanent and contract staffing levels were claimed to potentially change almost overnight leaving current

capability initiatives suddenly unsupported. Agencies as a result can suddenly find carefully established capability walk out the door.

Thirdly, capable project management resources, particularly for large ICT projects, were claimed to be in demand and in short supply, hence they are expensive. It was argued that the public sector can be either not willing or able to compete on price leading to recruiting less capable resources who do fit a price range, or even looking internally instead. These decisions based on cost were claimed to immediately put the project at risk of failure, with the extraordinary financial and organisational costs of failure being ignored.

Fourthly, a different perspective, is that the public sector should not and need not have the project management capability and capacity for large ICT software projects in-house. These large projects are not the norm, they come along almost generationally, every 10 to 15 years. It was claimed they not only require specific experience, but a specific skill set for the solution. They also require a substantial boost in capacity for the duration of the project. To expect these to be available in numbers or skills within an agency, and to maintain the currency of skills during this period was described as ‘crazy’. It was perceived that whilst agency project management staff should and do form part of the overall project team, the required project management capacity and capability should be sourced externally for the duration of the project to form a blended team.

Lastly, and to put a slight damper on the preceding paragraph, interviewees across all jurisdictions, stated they have trouble meeting capability and capacity demands for large ICT software projects. Size and geographic location of jurisdictions were argued to be a factor particularly in the smaller jurisdictions, such as the NT. The problem is compounded when the issue of retention is applied. External resources can tend to abandon ship when a project gets tricky, leaving the project exposed.

6.3.2 Leadership

Similar to the Sponsor findings, uplifting project management capability across all disciplines was perceived as not being an organisational priority as it is misunderstood by senior executives. This has meant executives fail to identify, target, support, and fund initiatives to address capability. It was also claimed that executives fail to understand that project management is a whole system of roles, skills, processes, and guidelines that collectively form capability. This has led to a tendency to concentrate on the role of the Project Manager,

at the expense of the others. Due to all of these factors there remains an executive belief that skilled organisational staff can be ‘rebadged’ as a project manager, and they cannot. This sets the person and the project up for failure. In summary, the executive leadership to acknowledge the need for change, and to drive this change, was perceived to be missing and will continue to be so until the senior executive recognises project management as a core organisational capability requirement.

6.3.3 Methodologies

There was a perceived belief that the use of methodologies such as PRINCE2 has been claimed by agencies as evidence of project management capability and maturity. This was argued to be naïve, wrong, and further evidence of an organisational lack of awareness of the project management discipline. PRINCE2 and other initiatives such as Gateway Reviews were argued to be assurance tools not methods of improving project management capability across the diverse disciplines required. The argument was akin to an executive stating ‘oh, we have a Project Manager, they will follow PRINCE2, and we will do a Gateway Review as well, so we have got project management covered!’

6.3.4 Entrepreneurship

Firstly, large ICT software projects were stated to be complex and high risk, even with substantial and specialised capability. These projects were stated to be also dependent on external resources to meet the capability demands, at serious cost. Therefore, there was an argument to remove both the risk of large projects, and the demands for extensive external capability and capacity, by not undertaking large projects. Break them down in to smaller components/projects, use Agile delivery, and use a reduced mixture of in-house and external resources. Capability was argued to then be improved at each deliverable and would continue to do so through progressive learning.

Secondly, given the similarities between many government projects, there were suggestions to form a ‘talent pool’ of resources either within a jurisdiction, nationally, or internationally, to have a team with proven capability that can move from one project to the next. This was argued to require a substantial cultural change in all jurisdictions.

Lastly, there was a proposal that if jurisdictions undertaking a sector-wide initiative to implement a common software solution were to make a long-term plan for this asset

replacement, a schedule could be developed that enabled the project team to move from one to the other to retain the capability. That was also argued to require a major cultural change.

6.3.5 Agency

There was evidence that within jurisdictions, agencies have not undertaken large ICT software projects in the traditional manner, and instead have broken them down into a series of smaller projects, component based, and delivered via an Agile approach. These were argued to lessen the capability and capacity demands and risks of a large ICT software project and to provide continuous learning benefits. However, it was argued these happened as a result of the agency of the initiating actor. For example, the ATO (see Box 5.1) change program, which was driven by the Commissioner, a person with the volition to drive and support the initiative.

6.4 Conclusion

Similar to the findings in the Sponsor chapter, there was much commonality and no wild divergences in the perspectives of the elite interviewees across the Australian and New Zealand public sector jurisdictions. The governance of the project management discipline and roles via the institutional framework has been highlighted as being ineffective, reflected by the dominant perspective that the capability for large ICT software projects does not exist in any jurisdiction. Also similar to findings in the Sponsor chapter, it was argued that this is due to a lack of organisational priority in addressing project management capability, with the senior executive failing to provide leadership.

There was a distinction made between capability for smaller projects and that required for the large ICT software project. Capability was deemed to be better for the smaller projects, however even here it was claimed there has been a focus on improving project manager skills rather than addressing the broader project management discipline requirements. Pertinently, for the larger projects there was an argument that the public sector is ‘crazy’ to think they should have those project management skills and that they are not required inhouse for a large, complex, and specialised generational type project. The dominant perspective was to source those skills externally as and when required.

Finally, there were arguments, albeit not universal, that the best way to address project management capability and capacity issues for large ICT software projects is to stop doing

them. Take the challenge and risk out of the equation. The proposal was to treat them as a series of smaller component-based projects that have reduce capability, more in-house options, and the potential for continuous learning. Where this has happened, arguably this has been due to the agency of the actor, rather than as the result of the institutional framework. Two cited examples have both had positive outcomes. An alternative proposal was to form something like a ‘talent pool’ within or across jurisdictions where resources with the experience and proven capability can be moved for project to project. That however was argued to require a major cultural shift.

In conclusion these findings can be compared to key points in the literature review (see Table 6-1). Whilst this is a simplified summary, it does serve to highlight a disconnect between what literature argues as good governance for project management, and the perceptions of the elite interviewees on the effectiveness of institutional governance for project management in the Australian and New Zealand public sectors. They are not aligned.

Table 6-1: Comparison of literature review and findings

Literature review (Chapter 2): key points	Project management findings
Organisational project management capability requires the organisation to understand what ‘project management-related practices, knowledge, skills, tools, and techniques have proven consistently to be useful.’ This also includes processes to compare against industry practices, the identification of capabilities, and ‘the establishment of a roadmap for achieving improvements specific to its needs of the organisation’ (PMI 2013b).	It was perceived that the public sector fails to understand the ‘discipline’ of project management and its integration within the organisation. An example is a focus on ‘project managers’ but excluding the framework in which they then are to operate.
Organisational project management requires the evaluation and alignment of initiatives to ‘a set of programs and/or projects that yield the appropriate value decisions and benefits for the organisation.’ These are then delivered through a series of projects or programs through to the realisation of the benefits (PMI 2013b).	The sectors were perceived to be poor in portfolio management, with large projects typically resulting from an ‘urgent’ need, such as to replace an aging payroll solution.
Organisations mature in project management can be classified as project-based organisations (PBO) (Miterev et al 2017) where the organisation ‘makes the strategic decision to	It was perceived that the public sector organisations cannot be classified as PBOs, nor is there an organisational push to address this. The argument was that large ICT projects are

Literature review (Chapter 2): key points

Project management findings

adopt project, program and project portfolio management as business processes to manage its work'. PBOs therefore treat project management as a 'strategic competency' (Green 2005). Developing and improving project management capability is therefore a priority of senior management in these organisations (Kwak et al 2015).

simply not the core skill or requirement of these organisations.

Even organisations with highly developed project management capability struggle to deliver large project successfully (Shenhar & Dvir 2007). This was argued due to the complexity of these projects. (Aucion 2007, p. 132).

The public sector was perceived to continue with large complex projects, compounded by a lack of project management capability.

Project management approaches should change to address the complexity issue to a more adaptive and agile approach (Fowler 2005; Haas 2008).

Whilst there were perceptions that the sectors should stop undertaking large projects as traditionally planned, this was not supported within institutional frameworks.

Chapter 7: Forecasting – a ridiculous nonsense of a process!

'I think everybody knows how to game the system ...' (Person A, CIO, APS)

7.1 Introduction

Forecasting is the final of the three core roles/disciplines to be analysed. The forecasting process is argued to be the 'front-end' of a project and is claimed to be 'the perhaps most important stage in the overall project cycle in securing the success of projects or avoiding failure' (Flyvbjerg 2013 p. 760). The forecast establishes factors such as how much will it cost, how long it will take, and the scope of work. The forecast provides criteria and guidance for the approval of the project and sets the benchmark for assessing project outcomes. Hall (1980, p. 4) in his study of great planning disasters argued that these projects were evaluated as disasters on the 'basis of forecasts that were later found inadequate and misleading'. Original forecasts can have lasting impacts.

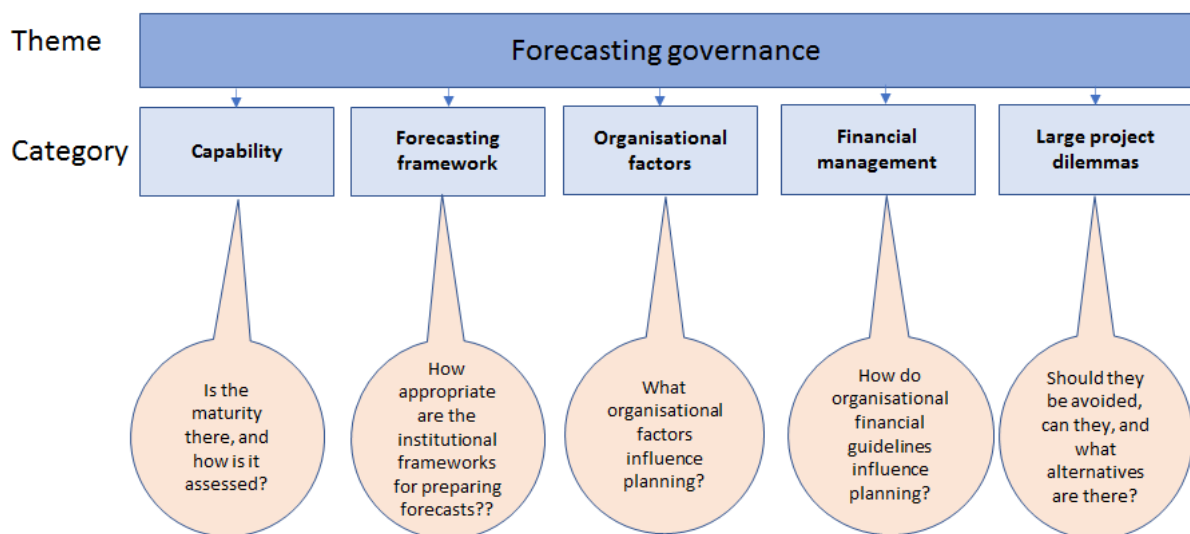
Within all jurisdictions, the institutional framework directly influences how and when these forecasts are made and approved, yet there is little research on the governance of forecasting within the Australian and New Zealand public sectors. This chapter aims to address the gap by interpreting the perspectives of a number of elite interviewees provided in response to questions aligned to five categories identified in the literature review (see Figure 7-i). They are:

- **Capability:** the sectors need to have capable organisational resources and analytical practices to undertake the forecasting, do they? In addition, the capability to undertake the task arguably should be assessed prior to the forecasting. Is it?
- **Forecasting framework:** in all jurisdictions there is an institutional framework that provides the guidance, processes, and rules for preparing and approving the forecasts. How effective are these frameworks?
- **Organisational factors:** in every organisation there will be internal and external factors that will impact on project plans and these need to be factored into the forecast. Are they?

- Financial management: financial maturity has a direct influence on how projects are funded, and thereby influence the frameworks for preparing forecasts. Does this aid the forecasting process or is it a contributing factor?
- Large project dilemmas: literature indicated the overwhelming majority of large projects will be judged as failures when assessed against original forecasts. Therefore, literature indicated a trend away from planning and forecasting these projects in the traditional manner. How are the sectors addressing this and are they supported by the frameworks in these initiatives?

For each of the above categories, perspectives of the elite interviewees are analysed and supported by vignettes from those interviews. These findings are then summarised and aligned to the theoretical concepts, followed by a short conclusion.

Figure 7-i: Categories for forecasting analysis



7.2 The elite interviews

7.2.1 Capability: is the maturity there and how is it assessed?

All interviewees perceived that the Australian and New Zealand public sectors do not have the analytical capability to prepare meaningful forecasts for large ICT software projects. There were no dissenting views. A common response was that of a CIO (Person G, APS),

who simply said ‘no’, or alternatively a rating was provided, such as that by another CIO (Person L, NZ) who stated that forecasting is done ‘very badly’. Also evident from the interviewees was a perception that capability in project financial and contract management has a major influence on overall forecasting capability. Unfortunately, and adding to the risk of these projects, the capability in these disciplines was also perceived to be lacking.

Financial management influences how costs are forecasted and approved. The perception was that the financial management capability to support the forecasting of these large ICT projects is a different skill set and requires alternative guidelines than those for normal operational financial management, and that is what is lacking. There were arguments finance executives skilled in normal public sector financial management do not understand how large ICT projects work and are managed, and that the roles are not transferrable. A Senior Partner (Person AL) in a major consulting firm, and with extensive past involvement in large government ICT projects, argued that the public sector:

‘.. cannot just take someone who is a Finance Manager in government and is used to yearly budgets and that sort of thing and put them into a program and expect success ... so you need that Project Financial Management expertise alongside project execution’.

This lack of required financial management capability and its impact on large ICT software project forecasting was also raised by Adrian Piccoli, a past NSW Education Minister. Piccoli argued even for operational financial management the capability was lacking and cited the following example:

‘When I became the Minister one of the KPIs was that we had to stay within our budget, fair enough. I said [to the agency] every month we needed an update, there is no good finding out in May that we are billion dollars in the red, so they did. But every month it was not particularly accurate, it was always sort of a best guess; so very-poor systems, so how can you make decisions on this data?’

The point being that if the capability does not exist for standard operational financial management and reporting, the unique challenges of large ICT project financial management and using that accurately for decision making is another gap altogether. Financial management is discussed in greater detail later in this section.

Contract management can have a critical impact on forecasts. A Snr Executive (Person E, NSW) stressed the importance of the contract at the initiation stage as it establishes the

relationship, roles and responsibilities, deliverables, schedule, and costs for the duration, and if you get that wrong ‘you have a major problem.’ A CIO (Person G, APS) agreed that the initial contract negotiation stage is critical to the project, as it is where the expectations are set between the project and the vendor. Another CIO (Person L, NZ) likened the contract between the agency and the vendor to a ‘recipe’ where each knows what to do at what time and for how long. However, for this critical capability the elite interviewee perceptions on this capability were consistently negative, with a CIO (Person AI, Vic) arguing it is just another capability critical to success that is missing.

This was argued to be the case even for large agencies who have many commercial arrangements, with a Snr Executive (Person E, NSW) arguing that this means they should have ‘absolute experts’, however ‘they do not’. A Snr ICT Assurance Officer (Person AD, APS) stated that it is a capability where ‘there is room for improvement’. This gap was perceived to put agencies/projects at a disadvantage to its vendors at contract negotiation stage. From a vendor perspective a Snr Partner (Person AL) in a large consulting firm, stated that contract management capability and focus was always a priority for their firm when involved in large government projects, and stated it was very important for there to be a ‘corresponding relationship’ within the agency/project, but this has not always been the case.

There was evidence that agencies have acknowledged this gap and had taken steps to address this for the project, largely by a mixture of central agency involvement and external expertise. The NT uses interstate legal experts for the complex projects (Person AN, Snr Executive). A New Zealand Snr Assurance Officer (Person Q) stated that a pool of specialists exists for agencies to embed within the project, or another option was for the project to recruit a commercial manager which they claimed, ‘had worked well in the past’. In NSW, a Snr ICT Assurance Officer (Person Z) stated that the procurement process is subject to a stage gate review by a panel of experts.

However, regardless of these approaches, the agency/project were perceived to retain substantial contract management responsibilities, such as in the APS, where a Snr ICT Assurance Officer (Person AD) confirmed the contract negotiation as an agency/project responsibility. Similarly, two Victorian Senior ICT Assurance Officers (Persons AF&AG) stated that whilst their unit provided support at various stages, ultimately it is up to the agency/project to undertake and manage that contract process.

It was also a common perception that the default position taken by agencies/projects during contract negotiations is not a focus on a collaborative ‘win-win’ outcome, but a more aggressive stance where it is viewed a win if they can ‘screw’ the vendor. A CIO (Person O, NZ) argued that this is reflective of a government mindset that vendors are ‘bad’ and ‘are always trying to put one over on us.’ They argued this will ultimately negatively impact the project.

Implicit in all of the above is the cost of the contract and its relationship to the project’s forecast. The interviewees argued earlier that predicting into the future for long-term projects is an impossibility as there is so much unknown. Yet, when long-term contracts are negotiated at the same time, the same logic applies, so immediately a major cost component is unclear. Following a similar theme by now, it was again argued that this commercial uncertainty and risk can be reduced by not undertaking large projects. A Snr ICT Assurance Officer (Person R, NZ) argued that iterative delivery, with contracts to match, enabled each to forecast, measure outcomes, and progress with less complexity.

As with both the sponsor and project management capability findings, interviewees were consistently unaware of any requirement to undertake a capability assessment of the organisation to plan and forecast for a large ICT software project. David Boyle, a past CBA and NAB CIO, stated the first step in preparing forecasts was always to undertake an analysis of the organisational capability to prepare a forecast and to later manage such a project. If that capability was not there organisationally, then the recommendation would be that the project does not proceed as a large complex project. If the project were to proceed, other planning and delivery approaches would need to be investigated to de-risk the project.

In summary, the dominate perspective was that forecasting capability does not exist for large ICT software projects, nor is this assessed prior to project initiation. This is not aided by the sectors also being perceived as lacking in both the required project financial and contract management skills.

7.2.2 Forecasting framework: how appropriate are the institutional frameworks for preparing forecasts?

7.2.2.1 *The forecasting requirement: compliance by gaming*

All jurisdictions have planning guidelines for large ICT software projects within their institutional framework, and a commonality is that an up-front forecast for entire project, cost, time, and so on remains a requirement. The interviewees perceived that this is a major contributor to why so many large projects have been assessed as failures. The argument was that the process is not appropriate for large ICT software projects.

A Snr ICT Auditor (Person H, NSW) argued the current guidelines force projects to plan ‘too big’ with the resulting risk and uncertainty. A CIO (Person AH, Vic) argued that requiring people to plan for a ‘big IT project’ is a major failing as there is an assumption, or expectation that it is possible to define something of great complexity in great detail now, yet at some time in the future believe that will be correct. This perspective found support with a Snr ICT Assurance Officer (Person T, NZ) who also argued that it is not feasible to do plans for large ICT projects that forecast ‘five years into the future’. They clarified that this did not mean you cannot have a five-year vision, just that doing a single detailed and accurate one-off forecast up front is unrealistic.

The political factor was used as an argument to defend why a full up-front forecast was required, ‘we have to do it this way as that is what the Minister requires, as anything else is too abstract’. To assess this perspective, Adrian Piccoli, a past NSW Education Minister was asked (Piccoli, 2020, pers. comm. 22 June) if he would expect and require a full up-front estimate for a large ICT software project. His answer was ‘yes’, and this was due to his ultimate accountability:

‘Ministers want greater certainty over something like an ICT upgrade that are notoriously expensive, i.e., if something goes wrong or it is a massive cost it is the Minister who cops it, not the public servants. So yes, I would have wanted to know what it would cost. I also cannot imagine that any organisation would just provide a blank cheque for an ICT upgrade.’

Given the requirement to prepare a full up-front forecast, there was also a perceived negative influence, one that directly impacts on its relevancy. Actors were argued to be extremely aware of the financial guidelines and what is required to have a project approved. The

perception was that this directly influences the forecast, particularly cost, and people deliberately under or over-estimate as a result. Actors are also aware of financial limits in the approval process. A Snr Executive (Person E, NSW) argued that the process leads to:

‘... people just playing with numbers.’

A CIO (Person AI, Vic) stated it led to people ‘sandbagging’ their estimates. A Program Director (Person J, NZ) had a similar perspective by arguing people:

‘... game around the margins, particularly when there is a boundary’.

An IQA (Person C, NSW) argued this was because if the true time and cost of the project was known up-front, then:

‘... the project may never have started.’

Finally, a CIO (Person A, APS) argued that the forecasting requirement is being exploited to document an outcome that will be known to be acceptable rather than realistic. Person A stated:

‘I think everybody knows how to game the system, so they know if they go over a certain money amount, they will incur more scrutiny, so they so they limit themselves and they know once they are 90% of the way through people will be unlikely to stop it.’

These factors all lead to, as a CIO (Person L, NZ) argued, a forecast that is forced to meet a figure, rather than being a calculated outcome based on project tasks. It was argued this can also lead to some ‘culling’ of project costs. Paul Barratt (ex-Secretary of Department of Primary Industries and Energy & Department of Defence) cited an example he was aware of where that at the behest of the Minister a multi-billion-dollar project had its forecast arbitrarily reduced as ‘cabinet would not accept a larger figure’. A Snr ICT Auditor (Person AA, NSW) cited an example where to meet monetary limits, the project’s risk budget was simply reduced. There was no reduction in scope or risk, nothing changed other than an arbitrary reduction in dollars to bring it within a limit. A Snr Executive (Person E, NSW) cited an example where a project did not include the substantial cost of the necessary hardware to support the software. Excluding it made the business case more palatable, however the need remained and had to be funded from somewhere. A Snr Project Manager (Person P, NZ) cited an example of a past project, where a decision was made to remove the replacement cost of internal staff required on the project to reduce the project to within

funding limits. The problem of course was that those resources were still required, as was the cost, it simply now undocumented and unfunded. They concluded by stating:

'... we write it [the plan/forecast] in a way that will get us the money.'

The requirement was also argued to lead to deliberate over-estimation. This was also common across jurisdictions. The premise was that at the planning stage you do not know the total cost with any accuracy, yet you know the project will be assessed against it. Therefore, there is a tendency to over-estimate, put in a contingency. A CIO (Person AH, Vic) expressed it as such:

'So, the way I think about that is if you ask me how much something that is ill-defined will cost, then I will give you a very big number because I do not want to trap myself by not having enough money, because I know that you will criticise me for overrunning the budget. So therefore, you have trapped me into a game where the game is played, where I have all the incentives on me are to over inflate all of the estimates. If I think I could do it for \$10 million, I will ask for \$50 million. That would be fine if I then had a series of motivations to deliver at \$10 million and give you back the \$40 million, but the problem is, as soon as everyone knows it is a \$50 million project because it is published in the budget papers, everyone manages it as if it was a \$50 million project, even if it could have been delivered for \$2 million. So, it is a ridiculous nonsense of a process.'

Others such as a Snr ICT Auditor (Person H, NSW) argued that the 'one off' funding process is a contributor to the view of:

'... get the money now or you may not get it later.'

It is difficult not to consider this under/over estimation as anything other than deception, yet despite the above vignettes, this was not the general perception of most interviewees who took a kinder view. A Snr ICT Auditor (Person AA, NSW) argued that these are 'good people' and that 'they want to do the right thing' and placed accountability on the framework that forces people down this path. This was a view supported by a CIO (Person L, NZ), who claimed the framework 'encourages optimism'. However, a Snr Project Manager (Person N, NZ) argued that this optimism has a rapid reality check once the project starts, leading to:

'My god, how did we end up in such a terrible space.'

Literature and the data from the elite interviews indicate that delusional optimism is considered almost a natural reaction when so much is unknown, and there is then eternal optimism that ‘we can do it’. Citing over 20 years of experience on large government ICT software projects, an IQA (Person C, NSW) argued that this has always been the case. They stated that regardless of how many times people have done it before, they:

‘... always come up with a time less than it will take, and always come up with a cost of less than it will cost.’

A CIO (Person G, APS) argued that in preparing forecasts people are:

‘... overly optimistic, ill-informed, or not informed, really, just a gut instinct’.

I was challenged by several interviewees on over optimism, they argued that it is important to be enthusiastic and optimistic, however as a Snr Executive (Person BM, Tas) stated, the problem is when optimism loses touch with the reality of the task ahead.

7.2.2.2 *Methods of forecasting: muddling through*

The interviewees were asked if they utilised any specific method when preparing forecasts. Two Snr ICT Assurance Officers (Person Z, NSW & Person AE, APS) and a CIO (Person G, NZ) argued there is no jurisdictional standard for preparing forecasts, instead these have largely been developed independently within agencies. A Snr Project Manager (Person N, NZ) claimed in absence of any formal jurisdictional method, the default was ‘past experience’. Part of the problem with this approach, as argued by a Snr ICT Assurance Officer (Person T, NZ), was a dependency on that ‘experience’ when it does not widely exist. They stated:

‘... and I have been doing this for 17 years in the public sector, we just do not have enough experienced people.’

A Snr Executive (Person B, NSW) who was involved in the planning and forecasting for a major HR replacement program, claimed that the process was not ‘sophisticated’ and was more to provide a figure within a timeframe than to be given time to investigate all aspects and then estimate based on that. A Snr Project Manager (Person M, NZ) utilises ‘brainstorming’. A Snr Project Manager (Person P, NZ) claimed that agencies when forecasting ICT projects were simply:

‘... left on the own [to work out how to do it].’

Where vendors are involved it was also claimed their propriety tools had been utilised. However, there was some evidence that agencies/projects had utilised various industry forecasting methods. These included, quantitative risk analysis³⁶ (Person R, Snr ICT Assurance, NZ), Investment Logic Mapping (ILM)³⁷ (Person P, Snr Project Manager, NZ), and the Monte Carlo³⁸ simulation method (Person O, CIO, NZ). Tempering this, a CIO (Person S, NZ) argued effective use of these methods required extensive experience and added another missing capability to the forecasting. Additionally, a Snr Executive, (Person E, NSW) claimed these methods commonly require past metrics to be useful, but these have not been kept, so in effect:

‘... nobody even knows if they have been getting it wrong for the past 10 years.’

A CIO (Person AH, Vic) argued that formalised forecasting methods in ICT have ‘never worked’ as there are just too many organisational factors that vary in their cost and complexity. This was an argued reason why Reference Class Forecasting (RCF) was also not suitable for use. A Snr ICT Assurance Officer (Person AF, Vic) claimed that the use of RCF on large ICT projects is impractical as identifying similar projects is difficult given these organisational variances.

There was one consistent perspective, and that was regardless of the forecasting method employed it remains an inaccurate science and is influenced by individual perceptions, organisational factors, and the data actually entered, meaning that the models can be played with to come up with a figure (Person G, CIO, APS). For a final word on the application and

³⁶ There are ‘three risk elements that concern project management: Schedule – will the project be completed within the planned timeframe? Cost – will the project be completed within the allocated budget? Performance – will the output from the project satisfy the business and technical goals of the project? Where possible, these risks should be quantified to enable the project team to develop effective mitigation strategies for the risks, or to include appropriate contingencies in the project estimate.’; *Project Management Institute*, viewed 1 June 2020, <https://www.pmi.org/learning/library/quantitative-risk-assessment-methods-9929>

³⁷ ‘Investment Logic Mapping (ILM) is a technique to ensure that robust discussion and thinking is done up-front, resulting in a sound problem definition, before solutions are identified and before any investment decision is made.’; The Treasury, NZ Government, viewed 29 May 2020, <https://treasury.govt.nz/information-and-services/state-sector-leadership/investment-management/better-business-cases-bbc/bbc-methods-and-tools/investment-logic-mapping>

³⁸ ‘Monte Carlo simulations are used to model the probability of different outcomes in a process that cannot easily be predicted due to the intervention of random variables. It is a technique used to understand the impact of risk and uncertainty in prediction and forecasting models.’; *Investopedia*, viewed 1 June 2020, <https://www.investopedia.com/terms/m/montecarlosimulation.asp>

suitability of forecasting methods, Ofer Zwikael, academic and Associate Editor of the *International Journal of Project Management*, claimed there was no common agreement on the effectiveness of methods and tools, nor was their sufficient evidence to support any effectiveness. Zwikael therefore concluded that given the effort required:

‘... for governments to take this on in earnest, they will need evidence that it actually will provide benefit’.

7.2.2.3 Collaboration: reluctance to consult

The interviewees were asked if they sought collaboration when planning, either internally or externally. The prevalent response was that collaboration is not common, and that competitiveness between jurisdictional agencies impedes collaboration. In Tasmania it was claimed earlier attempts to collaborate with larger jurisdictions, such as NSW, were resisted and NSW acted in an elitist ‘big brother’ manner (Person BM, Snr Executive) and as a result Tasmania tend to liaise with the smaller jurisdictions. A Snr Project Manager (Person AB, APS) viewed collaboration within the APS as almost non-existent and described the APS as ‘fractured and becoming more fractured.’ They cited an example of where they thought their project team was being pro-active by approaching another APS project team beginning a similar project and offered help, ‘just to share experiences’, and the response was:

‘... they didn’t want to know, in effect, told us to piss off.’

The only perceptions of regular, though independently initiated, cross agency collaboration came from within the Tasmanian and NT jurisdictions, who both argued due to their smaller size they tend to reach out to other agencies as a matter of course, with a Tasmanian Snr Executive (Person BM) stating this is something they always do at planning.

However, there was also some evidence that limited collaboration, external to the jurisdiction, had been a method employed and generally with positive impacts. The ATO used collaboration with other international Tax Offices to good effect in planning (see Box 5.1). *Stats NZ* were stated to participate in a collaborative quartet with the Australian, UK, and Canadian statistics agencies. They discuss various issues with their respective censuses to aid future planning. For example, the Australian team shared experiences from the troubled 2016 Census, which was then factored into New Zealand planning for their next census (Person X&Y, Snr Executives, NZ). A Tasmanian Snr Executive (Person BM) citing a current project implementing a service specific software, stated due to this commonality with several other

Australian agencies, they approached these to understand what went wrong and right, and to learn from that experience. They claimed these particular agencies were supportive and the lessons were applied in Tasmania to great effect and as a result it was planned to keep this collaboration permanently as a form of User Group. However, with all of these initiatives, it was confirmed these were due to independent actions rather than a standard guideline or process.

7.2.2.4 Outside view: looking for comparisons

The literature review highlighted the importance of seeking an ‘outside’ view to provide an external comparison when preparing forecasts. The interviewees were asked if this method was utilised. In the APS, a Snr ICT Assurance Officer (Person AD) stated that one of the recommended Gershon (2008) reforms was the introduction of IT benchmarking, but this had fallen by the wayside. A Snr Project Manager (Person P, NZ) stated ‘no, it is not normal’ and that:

‘We would be lucky to look outside the [agency], let alone outside the sector.’

Resistance to looking for outside comparisons, was claimed by a Snr ICT Assurance Officer (Person T, NZ), due to a view that the public sector, or even the agency, is ‘unique in some way’ so in effect there is no point looking elsewhere for comparisons as it won’t be of any benefit. They stated:

‘[this insular view] ... takes away some ability to think outside and think about all of the potential value you can capture from other views.’

However, there was also isolated evidence of individuals implementing strategies. A Snr Project Manager (Person M, NZ) stated on a previous project they had engaged the services of a ‘big five’ company to independently review estimates based on their experience in past similar projects. A Snr Executive (Person BM, Tas) stated that as part of the planning process they went to an international event attended by many organisations using the same solution. They used this time to meet with many and to discuss their experience, which was freely provided. These learnings were then claimed to have been incorporated effectively into the forecast. In NSW, a Snr ICT Assurance Officer (Person Z) claimed there is an intent to include an independent expert on the review panel, for example for a payroll project, they will include a payroll specialist, to provide that outside view.

7.2.2.5 ‘Lessons Learned’ reports: ticking the box

Lessons Learned (LL) reports are a common requirement, usually at the completion of projects, within both the Australian and New Zealand public sectors. A LL report is also a PRINCE2 requirement to enable the organisation to learn, and to reduce the chances of these issues being repeated in future projects.³⁹ As a result there has been a history of these reports, or similar, being produced throughout the sectors. They typically include lessons from the planning and forecasting process. The elite interviewees were asked about their use of these LL, and effectiveness on future projects. The common perspective was that they had not been effective, nor have they had a positive influence on forecasting future projects.

A common perspective was that LL are prepared to comply with a methodology, but then there was no organisational process to put these to effective use in future projects. A CIO (Person AI, Vic) stated them to be:

‘... simply a tick in a box [or a] bureaucratic necessity.’

They stated even the agency that produced the report is unsure of:

‘...what they are going to do with it.’

With regard specifically to applying the lessons into planning for future projects, and then actioning them as part of the project, a CIO (Person AK, Vic) argued that whilst there may be an intent it simply ‘just does not happen’. They cited a lack of a single source of information, and that the reports are viewed as a project artefact after completion rather than a tool for future projects to use, as the primary reasons.

A Snr ICT Auditor (Person AA, NSW) ‘was certain’ that the LL reports are not utilised in planning, and that no-one even makes a ‘serious effort’ to do so. They cited instances where a recent project’s LL report could simply be a replica of several past ones, as they all highlight the same issues. That view was supported by a Snr Executive (Person K, NZ) who stated that ‘people do not look at past reviews’ and that is evidenced by the same mistakes being made repeatedly. To support these perspectives of the same lessons being reported repeatedly, Table

³⁹ PRINCE2 wiki, viewed 5 June 2020, <https://prince2.wiki/management-products/lessons-report/>

7-1 highlights key LL related to planning/forecasting from three large New Zealand ICT projects spanning 17 years; there is much commonality.

Table 7-1: Comparison of New Zealand lessons learned over 17 years

INCIS⁴⁰ Lessons Learned (Small 2000)	Novopay⁴¹ Lessons Learned (Jack & Wevers, 2013)	JBMS⁴² Lessons Learned (Deloitte 2017, pp. 11-12)
Assurance (pp. 147-148): the timeliness and applicability of assurance advice should be critically reviewed in total by Monitoring agencies.	Assurance (p. 71): did not encompass the entire project, and it was not provided continually.	Assurance: plan and monitor effectiveness of your assurance.
Planning (p. 55 & p. 207): there was a lack of long and short-term planning, and there was a lack of an integrated technology and business change plan.	Lifecycle planning (p. 39 & p. 43): Neither the Ministry or Talent2 recognised the impact of the organisational change as the project started and progressed and were ill prepared for the expertise required. Sector readiness was poor.	Lifecycle planning: plan for how your methods, processes, skills, and resources need to change as you move through programme phases.
Contract (p. 140 & p. 53): A fixed or capped price contract for the whole of a large IT project should normally be avoided. The level of sophistication in the contract dictated a need for a formal, clear, and separate contract management function within Police.	Commercials/Contract (p. 36 & p. 67): The Ministry did not have the commercial experience to manage the project. There was poor practice in the management of project schedules and deliverables.	Commercials: agree a contract that allows you to regularly monitor real progress against business outcomes.
Requirements (p. 29 & pp. 133-134): Business process reengineering was critical to obtain INCIS benefits. The process was poorly managed, and the budget did not reflect the cost of the changes.	Requirements (p. 37): The process of gathering user requirements was poorly managed, and there was not an appreciation of all the requirements.	Requirements: it is vital to fully understand the scope across every agency and agree business outcomes and requirements before you both procure, and subsequently design and build the solution

⁴⁰ Integrated National Crime Investigation System (INCIS): a New Zealand Police project.

⁴¹ Novopay was the name given to the project to implement a payroll solution and services for the New Zealand Ministry of Education; it is the subject of a later Case Study in this thesis.

⁴² Joint Border Management System (JBMS): a New Zealand Customs project.

INCIS⁴⁰ Lessons Learned (Small 2000)	Novopay⁴¹ Lessons Learned (Jack & Wevers, 2013)	JBMS⁴² Lessons Learned (Deloitte 2017, pp. 11-12)
Delivery (p. 80): The life of the project should normally be limited to not more than one year. Any project planned to take a longer time needs to be in modules and, on the completion of each module, a decision can be made to modify technology to meet the then position.	Delivery (p. 39): the decisions to remove a staged rollout were ill advised and counter to good practice and exposed users to serious risks and issues.	Delivery methodology: a phased delivery approach should be considered to effectively mitigate scope and delivery risks.
Leadership (p. 109): Projects are more likely to suffer unless the Chief Executive oversees the governance and management of the project.	Leadership (p. 81): Found no evidence of the sustained and focussed attention on the project from the Ministry’s leaders that we would have expected.	Leadership commitment: it is vital for strategic transformation efforts to be actively led from the top.

The APS perspectives are interesting as the APS has been subject to two major reports into large projects, the Gershon (2008) and Shergold (2015) reports. Each made recommendations on how to improve planning for large projects. Hence APS staff were asked about those reports and how they had been factored into future planning. In summary, it seems they were ignored. A Snr ICT Assurance Officer (Person AD, APS) argued that Gershon ‘was done and dusted’ and that there was no monitoring of the reforms, and concluded by positing that:

‘... some might say we have actually gone backwards since.’

A CIO (Person AI, Vic), with both public and private experience, compared the difference between the sectors in the use of LL. In their private sector role LL are completed after a major incident, where the incident is analysed, causes identified and what to do in the future. This then becomes a requirement to be addressed in future projects. They argue that was not the case in their public sector experience. A Snr Partner (Person AI) in a large consulting firm agreed and stated that from each project experience a team reviews all aspects, including how effective their estimating tools were in the planning stage, and they adjust accordingly and apply these to future projects.

Another common perspective was that written LL reports on their own are ineffective, as there is a reliance on the project to independently locate and then read and interpret the findings. A Snr ICT Assurance Officer (Person AS, NT) argued:

‘... it is very difficult to put [experience] down on paper.’

Person AS stated they therefore tend to encourage verbal communication and explanation of the issues with the projects talking to each other. This was the case in Tasmania, where a Snr Executive (Person BM) stated the experiences and learnings are typically verbally communicated as it provides for better interaction and interpretation. This approach was supported by a Snr Project Manager (Person AA, APS) who argued that the true value of lessons learned is when that experience is via verbal collaboration with the project team, however they claimed this was not a common approach. However, there was evidence of initiatives to address this issue. A NSW Snr ICT Assurance Officer (Person Z) stated their unit, with jurisdiction-wide responsibilities, was ‘harvesting this information’ with an intent to eventually ‘systemise’ this and to begin sharing that information.

For a final word on the failure of LLs, David Boyle, Ex-CBA and NAB CIO, argued that LLs are typically produced at the end of a large project as part of a post implementation review. Therefore, they can be produced many years after the project started, and in effect reflect what went wrong. Boyle argues they did not actually aid the project at all, and potentially many others that may have started in the interim as the horse had already bolted. Boyle claimed this was another benefit of Agile delivery; learning is continuous and timely with each component.

7.2.2.6 Customisation: additional costs now and ever after

The customisation of a packaged software was also perceived to have a major impact on the ability to forecast with any accuracy. A CIO (Person S, NZ) argued that the cost of customisation is rarely considered or understood in detail during initial forecasts, and the future ongoing costs of support and upgrade as a result are also generally ignored. Hence, it was perceived that whilst the project starts out with an ‘intent’ to implement a standard software package and adapt organisational processes to suit, it in fact morphs into software to suit existing processes. The initial forecasts were made on the original intent. A Snr ICT Auditor (Person AA, NSW) added to this perspective by arguing that customisation in effect means that all you are really doing is changing technology, and you do that at additional cost

and complexity and ‘certainly reducing if not completely decimating any benefits.’ Adrian Piccoli argued that customising was one of the major issues with the LMBR program, he posited:

‘That is probably the mistake they made, they are making an IT system fit a complex system instead of simplifying the system and then bringing in an IT system that would fit this.’

To address this issue a Snr ICT Assurance Officer (Person T, NZ) argued that this requires the organisation to ‘standardise’ processes as much as possible up-front, pre the project starting so that customisations are reduced. However, other perspectives indicated that whilst this is a logical argument, it is difficult to implement. A CIO (Person AH, Vic) argued that whilst everyone acknowledges you need to minimise customisations it is difficult to actually do so as organisational change needs to happen within a timeframe suitable to the project. These time constraints, citing their involvement in a past HR/Payroll project, were also argued by a Snr Executive (Person B, NSW) as part of the reason so many customisations were made to that product, and that:

‘... it is easier to tack it on than change the organisation.’

However, a CIO (Person S, NZ) argued it is possible do address customisation impacts, and alternatives, if there is executive support. They gave an example of where an existing heavily customised integrated business package was replaced with a ‘pure-vanilla’ alternative package. This was described as ‘a bit tricky’, as some processes and existing features ‘disappeared’, and the business had to learn to operate with the new solution, but this was successfully achieved. There was also evidence in Tasmania that customisation impacts are managed. A Snr Executive (Person BM, Tas) cited a project where the customisation of the solution was discouraged from the outset, and a change to business processes was pursued. Where this could not be done, a configuration option was next. Only if no other alternative was possible was customisation considered and was claimed to have been kept to a minimum. These were the only two cited examples of successfully dealing with organisational change instead of customisation.

A final perspective on the unintended impacts of customisation, is the impact not on the organisation, but on the vendor engaged in the project. A Snr Executive (Person B, NSW) argued that part of the problem was that at the planning and forecasting stage neither the organisation nor vendor had full knowledge of the processes in the legacy system that had

been integrated over decades and this resulted in many unplanned changes, and the flow on impacts to cost and schedules. An IQA (Person C, NSW) cited an example where the software provider finished up having ‘over 300 people’ engaged just to deal with changes required by the agency/project to the solution. In the end the project collapsed under this weight, and the vendor walked away, happier to pay a financial penalty than to continue down this path.

7.2.2.7 Problems with assuring forecasts of large projects

Whilst there was evidence from the elite interviewees of an assurance process for the business case/project plan and its forecasts, there was also a common perception that this is poorly undertaken. This was for a number of reasons. Firstly, it was perceived that not only do organisational factors influence the preparation of the forecasts, but they also influence the assurance of these estimates. In a discussion with a Snr Partner (Person AL) of a large international consulting firm, an example was discussed where great effort by the firm had been put into planning and estimating for a particular part of a large project. Many hours work, and a detailed summary of time, resources, and cost as a result. It was peer reviewed within the firm as is normal practice, and also within the project team and was praised for its detail. On presentation to the program’s General Manager, after a quick glance at the total cost page, it was simply pushed back across the table, with a comment:

‘... it is too expensive, change it!’

The trouble was the same outcome was still required.

Secondly, the detail required in a plan for a large ICT software project was also perceived to be part of the problem in effectively assuring forecasts. An IQA (Person C, NSW) posited, how could anybody be expected to thoroughly review a ‘six-inch high document’, clearly understand all of the complexities and interdependencies, risks, and have a clear understanding of what is to be delivered at what cost and time frame.

Thirdly, the effectiveness of Gateway Reviews. Gateways are a common, though not universal, assurance process across the Australian and New Zealand public sectors and are arguably a much-hyped initiative. The New Zealand and Victorian sectors could also be argued to be world leaders in the implementation of Gateways. The perspectives of these reviews and their effectiveness as an assurance tool, particularly at project approval were varied, with a Snr ICT Assurance Officer (Person T, NZ) stating that ‘feedback had been mixed’. The general perspective was that whilst Gateways serve a purpose as an external

review method, there was also doubt as to their effectiveness in the assurance of large ICT project forecasts. Part of the problem was argued by a CIO (Person S, NZ) to be that the assurance of forecasts is based on the assumptions and information provided by the project team, and it is on that basis that feedback is provided. Person S, sums up this limitation as such:

'I mean there is a reasonable check ... but it is only as good as the information that is on the table on the day I suppose.'

Lastly, the role and effectiveness of jurisdictional central agencies in the assurance process, was perceived to be variable. The perceived issues with this central agency assurance role were twofold. Firstly, an understanding of the central agency role and initiatives varied. In New Zealand there was a common clear understanding. However, in the APS for example this was not so clear. A Snr ICT Assurance Officer (Person AD, APS) stated that a role of the Digital Transformation Agency (DTA) was to provide a third-party independent review on the plans and forecasts and to provide 'frank and fearless advice' on these. This claim about the DTA role was positive, however it is of some concern or interest that the other APS interviewees did not seem to know anything about this role. The role of the DTA as an assurance provider was highlighted by no-one else within the APS. The second issue with the effectiveness of central agency assurance in reviewing forecasts for large ICT software projects, is aligned to the earlier assurance problems. The argument was, how can anyone accurately review a forecast for a large program of work that spans many years with many unknowns and much complexity? This same dilemma impacts on central agencies as it does on the project team, Gateways, and independent reviews.

In summary the forecasting framework was perceived to be a major contributor to past and ongoing poor project outcomes. The common requirement to provide an accurate forecast for a large ICT software project up front and in full for the entire process was claimed to be misguided, as this is impossible to do with any accuracy. Therefore, the benefit of doing so was challenged, and it was deemed to be just another factor setting the project up for failure.

7.2.3 Organisational factors: are organisational factors considered at planning?

7.2.3.1 Are they considered and why not?

The interviewees were asked for perceptions on how organisational factors are considered when forecasting, and then factored into the plan, such as geographical issues, capability and capacity, industrial climate, award structures, culture, and so on. All of these have direct impacts on planning and the resulting forecasts. A Snr Partner (Person AL) in a large consulting firm, and with extensive experience in providing services into large government ICT projects, described this requirement in planning as ‘fundamental’. However, a Snr ICT Auditor (Person AA, NSW) citing past experience, stated:

‘... I cannot think of a single example at the minute where I have ever seen an organisational, cultural assessment factored into planning ... it is certainly a huge factor.’

A NSW Auditor General (2014) report on the *LMBR* program found that the business case did not reflect all project costs, that the ‘complexity of the project was not factored into costing’, and that impacts on departmental resources were not identified, and in fact were classified as ‘unknown’ (ibid, p. 16), yet this business case had passed other internal and jurisdictional reviews. In another example, a Senior Executive⁴³ cited that all change management responsibilities and budget were removed from a project to reduce project complexity, timeframes, and costs, however the problem was the project simply shifted the responsibility and cost to another business unit, who themselves, not unreasonably, had not planned for this. A CIO (Person G, APS) claimed that instances such as these were common in planning. A Snr Executive (Person B, NSW), a key business stakeholder in a major ERP project when asked about their involvement in the planning and the consideration of these factors, simply stated:

‘... we did not do that.’

Within the New Zealand institutional framework, *Better Business Cases* (The Treasury 2019), is a strong document for guidance when planning. However, even with these guidelines, within New Zealand there were contrasting perspectives. A Snr Project Manager (Person P, NZ) argued that ‘everybody knows you need to do it’, and a Program Director (Person M,

⁴³ Note: Identifier and jurisdiction have been kept confidential to avoid any possible identification.

NZ), stated it is ‘absolutely’ common for planners to take these factors into account. However, others disagreed. A Snr Executive (Person K, NZ) and a CIO (Person L, NZ) both stated that it does not usually happen, with another New Zealand CIO (Person O) arguing there is no jurisdictional standard, so it is independently dealt with by each agency/project. It was the view of a Snr Project Manager (Person P, NZ) that it is clearly ‘evident’ through all stages of the business case development that these organisational factors are not considered in planning. For a final New Zealand perspective, rather disappointingly, a Snr ICT Assurance Officer (Person T, NZ) claimed that even though projects may go through this exercise, once the impacts are added up and assessed for scope, time, and budget, this has resulted in financial shock and projects can be asked to remove certain aspects from the plan. Further evidence that institutional frameworks, and the best intents of the project team, can be overridden by other organisational factors. An example of this dynamic is provided in Box 7.1.

Box 7.1: Having planning guidelines is one thing, applying them is another

(Note: the interviewee’s jurisdiction has been kept confidential to reduce the likelihood of identification.)

At the time of the interview a Snr Executive (Person BQ) was in the midst of planning for a large ICT project in their jurisdiction. In addition, the jurisdiction had recently strengthened its institutional framework to support better planning practices. They arrived 15 minutes late for the interview, looking flustered, and apologised stating they were in a meeting with the Executive leadership. The following is an extract from that interview:

Interviewer: When planning, what organisational factors such as geography, resources, capability, culture etc. are considered up-front and allowances made accordingly?

Person BQ: <laughter> ... The meeting I have just walked out of it has been decided a paper will go to the Minister this afternoon advising them of cost, resources, and scope of the project. I stated we are not ready for that yet. We need to do research and investigation up-front first. The answer was no, it will be ready this afternoon. I know from experience whatever figure I put on paper we will have to live with. That is how planning is done and that creates a problem at the back end.

Having guidelines in this instance was of little use, the organisational and political imperatives overruled these and were perceived as immediately exposing the project to risk.

7.2.3.2 *The political factor: it is unpredictable*

Earlier literature indicated that one of the differences between large ICT projects in the public and private sector, is that in the public sector projects have to operate in a political environment. The interviewee perspectives indicated this is indeed a major factor in being able to forecast following proper disciplines, as politics can overrule any effort to plan and forecast for the best outcome.

A Snr Executive (Person BL, Tas) argued that political factors are rarely factored into forecasts, and questioned what control is even possible. A CIO (Person G, APS) posited that the driver of the project itself is a major organisational influence on planning. The example used was if the project was part of a ‘political agenda’ with imposed expectations, so therefore you immediately have imposed timeframes rather than a carefully planned and calculated timeframe. A Snr Executive (Person E, NSW) argued political influence leads to projects being planned for an outcome and timeframe perceived as being politically beneficial, rather than an assessment of whether it is a ‘good project’. A Victorian project currently in progress was stated by two Snr ICT Assurance Officers (Persons AF&AG) to have had ‘a very aggressive’ delivery timeframe imposed by government, rather than as an outcome of planning. They indicated early as part of a review ‘that there is a serious risk of delay’ to the project as a result, and went on to state that:

‘... sure enough, a delay has happened.’

This was described by a CIO (Person O, NZ) as a political requirement to see results quickly, with a disregard for what is required to effectively get there.

Governments can also influence by a change in agenda. As a Program Director (Person F, APS) posited, if the government changes superannuation legislation and imposes a date for it to be in place, agencies such as the ATO just need to do their best. Government change can also bring a change in priorities, and a CIO (Person K, NZ) argued:

‘... this can become a real problem for the public sector in long-term planning.’

This impact was also described by a Snr ICT Assurance Officer (Person R, NZ) as being unable to develop a strategic vision for the next five years with any confidence or surety as the government on the day is focussed on short-term deliverables. Political priorities can also be influenced rather quickly by the media and have resulting immediate impacts on projects and planning. A Snr Project Manager (Person N, NZ) cited an example where they were in the midst of a high priority project and then out of the blue carefully laid plans were jettisoned. The Minister had been doorknocked by a journalist who informed them of a current glitch in another system. Next day, the directive was to stop the project work and ‘fix it’. Paul Barratt (ex-Secretary of Department of Primary Industries and Energy & Department of Defence) argues this can be symptomatic of the ‘modern’ politician where ‘instant gratification’ is required, leading to situation where the ‘bright ideas’ override historically developed processes.

The role of the public sector and agencies in challenging these political directives, was also raised. It was argued by a Snr ICT Assurance Officer (Person T, NZ) that agencies have a role in explaining ‘what is required to achieve the outcome’ to Ministers, to provide that ‘frank and fearless’ advice, and whilst they also acknowledge it may not work, that was no excuse for not trying. However, Paul Barratt recommends putting this in writing, something that Shergold (2015, p. iv) also stressed.

There was no misunderstanding that these large projects operate within a political context, that is just the nature of the sector. The challenge however was perceived to be, how do you plan for politics? How do you know what is coming? It could also leave currently running large projects de-prioritised and de-funded overnight.

7.2.3.3 Jurisdictional size and location: small is beautiful but often impractical

Jurisdictional size and geographic location were once again raised as organisational factors to be considered in planning, this mainly concerned the impact of being able to obtain the capability and capacity required. This issue was raised as a factor in all jurisdictions, not just the smallest or most remote. For example, in Victoria, for a major project, it was stated there had been early slippages in schedule due to delays in obtaining a skilled Program Director (Persons AF&AG, Snr ICT Assurance Officers). This factor was argued by an IQA (Person C, NSW) to highlight a common failure in government planning for these large projects. That

is, there is an assumption that projects ‘will be singing from the outset’, and forecasts are then based on that. Instead, they argue, experience shows that it takes time to get the capacity and capability, and that it:

‘... takes anywhere from six months onwards for a large project to find its rhythm.’

As detailed earlier the Northern Territory has particular problems in attracting the required capability and capacity for large complex ICT projects. It has the double complexity of size and remoteness. Box 7.2 discusses the impact of this factor on their planning and forecasting for a large project.

Box 7.2: The Northern Territory’s CCSRP⁴⁴ project – how is it possible to accurately plan long-term for capability and capacity?

The NT in 2017 commenced the CCSRP, a \$259m Health system project of considerable size, complexity, and a challenge anywhere in the world. With the known NT issues in attracting both the required capability and capacity, to develop an up-front plan with a forecast based on the timely acquisition of these resources is arguably fraught with risk.

In 2018 relevant NT interviewees were asked about this issue. A Snr ICT Assurance Officer (Person AS) stated that it was already proving a challenge. Another Snr ICT Assurance Officer (Person AV) stated it was currently the ‘critical’ issue for the project. A Program Director (Person AU) stated it was starting to impact ‘terribly’ and that despite interstate marketing there was still a shortfall.

In the early stages of the project the resourcing issues were already impacting on schedules. There is little publicly available documentation on progress since the interviews, other than a 2019 update stating the design phase is complete⁴⁵, but there is no reference to progress against schedules, costs and so on.

⁴⁴In May 2017, the Northern Territory Government (NTG) funded \$259 million over five years to support the Core Clinical Systems Renewal Program (CCSRP). CCSRP is developing a single, secure, Territory-wide, electronic patient record that integrates multiple systems currently used NT Health, and replaces current aging clinical systems.’: Department of Health, Northern Territory Government, viewed 13 August 2020, <https://health.nt.gov.au/professionals/core-clinical-systems-renewal-program-ccsrp>

⁴⁵Digital Territory, viewed 17 August 2020, <https://digitalterritory.nt.gov.au/action-plan/build-phase-core-clinical-systems-renewal-program>

I can only wish the NT the best with this project, they were very welcoming to me and participated willingly and openly in the research. They were a very dedicated team. However, attracting resources to the NT is a wicked problem. If this is the case, how can they forecast over an extended period with any accuracy when the team will have both the required capability and capacity? Arguably the answer is they cannot. Should they be looking at alternative delivery models as a result to acknowledge this fact and to reduce the risk?

In summary organisational factors were acknowledged to have major impacts on the ability to forecast accurately over the long-term. Projects were claimed to not always include these factors in their forecasts, and even when they do, how can they possibly foresee the political and organisational state at that stage and to forecast accordingly?

7.2.4 Financial management: how does organisational financial management capability influence forecasting?

7.2.4.1 Suitability of financial management practices: fit for purpose?

The financial management guidelines across the Australian and New Zealand sectors generally require an up-front forecast for the entire project. An earlier finding was that this is a flawed and inappropriate process. When applying a project financial management lens to this requirement, the overriding perspective was that the financial management practices have not been able to adapt to improve forecasting for large ICT projects; instead, they have continuing negative impacts.

The first factor raised by several interviewees was a reminder that although projects may forecast for the entire duration up-front, and the budget approved on that basis, that does not equate to the money being granted in full at the beginning of the project. Typically, projects are funded by fiscal year, based on the forecast, up to the total budgetary limit. This, as argued by a CIO (Person S, NZ), as leaving the project to a somewhat ironic exposure. The framework forces projects to forecast for the entire project and have a budget approved for that and as a result the project commences, yet in fact there is no certainty that this approved funding will be available. Like large ICT projects, which have much future unknown, it was argued much can change in a few years with government finances. Economic times may change. The government may change. Hence although a figure of say \$100m was approved in

the business case there is no guarantee this will be the amount actually available. If you have planned your project via a traditional waterfall delivery, where does that leave the agency/project? Perhaps with a half-finished product.

A second factor raised was a prime focus within the framework on cost, rather than other benefits, or viewing it as a long-term strategic investment. In New Zealand, The Treasury was argued by a CIO (Person O), to take a very ‘myopic view’ of large ICT projects and become fixated with ‘cost’ rather than future benefits. A Snr Executive (Person E, NSW) argued that unlike the private sector the emphasis in the public sector is on trying to justify the project on a financial basis rather than an investment basis. The argument was that some projects need to be treated as investment strategies and funded on that basis, and not on a simple assessment of forecasted cost and how that fits within funding guidelines for approval. These perspectives were also supported by a CIO (Person A, APS), with both private and public experience, who claimed that the public sector focusses on the financial, as distinct from the private sector, where ‘scope drives everything’.

The third factor raised, was the perceived frequency in which projects request additional funding as the initial forecast and resulting budget was inaccurate. There were varying perspectives on how these requests are managed. However, a Snr Executive (Person E, NSW) argued these decisions are generally not made based on solid financial and project management disciplines. The propensity for troubled projects to be provided with additional funding, perhaps multiple times, was described by a Snr ICT Auditor (Person AA, NSW) as:

‘... non-stoppable inertia.’

Others just had the view that the public sector does not ever consider the ‘stop option’ (Person H, Snr ICT Auditor, NSW), or ‘people do not want to say stop’ (Person R, Snr ICT Assurance, NZ), and that even though projects can be planned with stage gates as nominal off ramps, that a mindset exists where this is seen as acknowledgment of ‘failure’, so they ‘flog that dead horse’ and hope to make up the lost ground in the next phase (Person S, CIO, NZ). Hence, deciding to stop is not simply about having the power to do so, but having an awareness that this is the best option, and the fortitude to do so.

The alternative perspective was that there are valid reasons to provide additional funding and to let the project progress and is in fact an informed decision rather than ‘non-stoppable inertia.’ This is arguably an important perspective as the funding correction was argued to be

an acknowledgement that the initial forecast was insufficient to deliver the outcome, and even with a revised budget the project remains supported. There were also other perceived organisational factors that can influence the provision of additional funding. A private sector CIO (Person AD, Vic) argued that even in the private sector decisions to stop funding large ICT projects can be rare as they are typically delivering an important asset. Therefore, the cost of stopping and starting again, and without any alternative solution is a key factor as you:

‘... end up spending more time restarting and remobilising later.’

An example of this scenario in the public sector is provided in Box 7.3.

Box 7.3: Ministerial support and additional funding for a much-troubled project

Adrian Piccoli was the NSW Education Minister during part of the *LMBR* program timeframe. This program received much negative media coverage due to its time and cost overruns. The ongoing provision of funding was part of the media narrative. Piccoli was asked about his support and the reasons for additional funding.

Interviewer: Why did you continue to support the project in the face of such public criticism?

Piccoli: We came into government in 2011, LMBR had been problematic for the previous government as well. Cost blowouts, time blowouts and Principals were complaining. We spent a fair bit of time thinking about what we did, they had already spent \$300m, what do you do when you are halfway through a tunnel, do you stop and flush \$300m down the toilet or do you try and make it work? We decided based on the advice from the Department and others such as Treasury to make it work.

Interviewer: So those potential benefits to the schools, in the end did they remain a big driver for your decisions to keep on supporting?

Piccoli: Yes, we needed to have a system, it was not a matter of just stop and stay with the system we have, we could not do that ... Even if we said forget about it, we would have had to go and design something else, so spend another \$500m on something that was equally unpredictable ...’

7.2.4.2 *Alternative financial management approaches: iterative funding*

In a recurring theme, the use of component-based, iterative delivery such as Agile, supported by appropriate financial management processes was raised as an alternative. A Snr ICT Assurance Officer (Person AD, APS), with jurisdictional-wide responsibility, stated they were working closely with a central agency ‘to look at how we fund these big projects’ by undertaking component-based delivery and the ‘progressive delivery of benefits’ and after each stage, pending on the outcomes of that stage, further funding is released. However, Person AD admitted there are organisational challenges ahead if this is to be achieved. They stated:

‘...how do you marry that world [traditional funding] with a world that says, "No, we are only going to give you a little bit of money and you have got to come back and show us"? That is the heart of the challenge we face, so as someone from Finance put it to me, Cabinet Ministers are not going to want to sign off on something that is open-ended. They are going to want to know, roughly speaking, what they are committing to ... Well, if you turn around and say, "Sorry, I cannot tell you because I do not know what the thing is going to look like until we start," it is difficult. We have got these two worlds that are colliding, we have got the structural budget world that forever has worked around make your business case, tell Cabinet what you want, we will give you your money and away you go, that world versus the world where we are seeing the pace of change and technological evolution, and need for user focus, much more Agile, chunked down delivery and the two are colliding. We have not worked it out yet. We have not worked it out.’

As an example of this dilemma, another Snr Assurance Officer (Person AE, APS) argued that forecasts need to cover the entire project, as this was all about ‘making a good investment decision’. They argued that an Agile delivery approach could still be utilised by breaking deliverables into ‘tranches’ but was adamant that projects cannot be just a ‘blank cheque’. This need for an overarching project plan covering all deliverables and total cost, even when Agile delivery was planned, was also an identified approach in Victoria by two Snr ICT Assurance Officers (Person AF&AG). Person AF argued that Agile is simply just a means to get ‘to a predefined deliverable’ and a ‘way of getting there’, but projects still are required to submit a full detailed plan. They argue this is the case as projects cannot operate on a basis of:

‘... we are not sure where we are going or how we are going to get there.’

Person AG argued that in the absence of a solution to the traditional funding approach and Agile funding model, the ‘staged funding’ model, as part of an overall plan, ‘is probably the next best thing’. However, a CIO (Person AH, Vic) was damning when asked how they manage their preferred Agile approach with the Victorian guidelines requiring full up-front forecasts and funding. They stated:

‘That is a real problem, and that funding process is the biggest single risk to IT projects that governments create. Governments knowingly create the risk factors which cause most IT project failures, and the reason is because of the budget process that forces you to try and estimate the total cost of something that you do not know anything about and lock it in and then hold you to account for that.’

A private sector perspective of funding large projects using a traditional waterfall method, and a component-based method is detailed in Box 7.4. It indicates some similarity with the Victorian stage-gate funding, with the major exception that this was viewed as part of an organisational investment portfolio of projects, not in isolation.

Box 7.4: A private sector funding approach

In the private sector, David Boyle a past CIO of the CBA and the NAB, stated that for large projects following a waterfall method, stage-gated funding was employed. Boyle was a member of a committee that would oversee the entire portfolio of organisational projects and explained the process as:

Boyle: ‘... depending on the risk profile of the project, that committee would maybe just give out funding for the next phase of work and ask for a checkpoint as to the learnings out of that phase. Or if it was a more modestly scaled project with a very-low risk profile from when the team had done that sort of stuff five times before, we might give them two stage-gates worth of funding or the entire funding envelope.’

The project would have an overall plan and estimated budget, but ongoing funding was on a staged basis pending outcomes of that stage and impacts on future stages. However, when an Agile model was employed the stage-gate approach moved to a ‘funding envelope’ model.

Interviewer: I am sorry, what funding was that? Funding envelope?

Boyle: ... where we say look, in our digital team or in our payroll team, we have got a backlog of work to do ... rather than make a business case for all of it, why don't you deliver the first two months' worth of work. Come back and show us for that level of

funding what business benefits you have got, and if you have got a good backlog and even more value to create, we might increase your envelope. Or if you are starting to dry up in terms of your backlog, we might reduce.

Boyle: And so that creates a much more iterative governance model over the funding than the rather binary yes or no you have got your funding for your project or you do not. And a lot of change in <company> and the businesses I work with can be done that way. And it is really an artificial construct to be grabbing a bunch of scope and putting it into a project model for getting funding, and if you unbundled it from that model and put it in an envelope, you get a lot more benefit earlier.

Person AH described their approach as providing ‘seeding money’, where you say to the project team, ok, you have this idea, but we are not giving you \$100m. We will give you a small amount now for you to investigate further and then we will revisit and see where we are up to. The agency also treats this as part of a ‘multi-year investment strategy’ where the money is provided from internal agency funds set aside for that purpose. They set aside budgets to address ICT initiatives, these are all Agile projects, provided with seeding, and then assessed and further funding approved if there is positive progress and a clear next step. That means they do not manage it as an ICT project, but rather at the portfolio level with a collection of projects that are funded on priority and progress, with the portfolio mapped out over a several year period. They do not generally seek large external funds as this would force them to seek one off funding and is contrary to their preferred development and management approach. The CIO championed this approach within the agency, it was not the result of a jurisdictional initiative, in-fact the approach can be argued to have happened due to the inadequacy of the institutional framework to support these initiatives. This is also similar to the approach used by Michael Carmody to fund the ATO program (see Box 7.6).

7.2.4.3 Seeing ICT solutions as assets and managing them accordingly

The final financial management factor identified was asset management, and the role of this in funding large ICT software projects. In the interview with David Boyle, the issue of treating ICT organisational solutions as assets and amortising these appropriately arose. Boyle described this necessity as a ‘real passion’. He argued the metrics in an organisation’s asset portfolio are their health, maturity, and age. They stated, from experience they have found the longer that assets are left to age, the:

‘... more expensive the project becomes and the fewer options you have on how to attack the problem because of the looming end of life risk.’

Lack of asset planning in effect leads to a lack of options at planning time. Boyle stated that by their organisation planning ahead for ICT asset replacement they can make more informed decisions on cost, when to spend this, over what period, and also where this fits in the replacement cycles of other ICT and non-ICT assets. He finally argued by doing this, the organisation is not living in ‘la la land’ and under some misguided belief that the ICT asset will ‘survive in perpetuity’.

Another private sector CIO (Person AI, Vic), but with public sector experience, confirmed that in their private sector job they do treat ICT systems as assets and manage accordingly. However, they also confirmed in their public sector job they did not and could not as the sector was not mature enough to cater for this. They additionally argued that governments treat physical infrastructure assets and ICT assets differently, and that government does not understand that ICT assets need to be given the same attention and planning. As a result, they argue a consequence is:

‘[government] IT has suffered from under-investment that goes back over a decade.’

When the public sector interviewees were asked if their jurisdiction treats major IT systems as assets, amortise these, and plan for their replacement accordingly, the only response was, ‘no.’ There were also some blank looks and questions to clarify what I meant. A CIO (Person AH, Vic) argued that their Treasury/Finance agencies would find such a concept ‘too, loosey-goosey.’

Two Victorian Snr ICT Assurance Officers (Persons AF&AG) argued there is a need to plan ahead for these asset replacements as the current process leads to ‘must replace this now’ projects getting priority, yet there is no clarity over what else is out there, looming. In the NT, a Snr Executive (Person AM) simply stated ‘it is not done that way’, but claimed it was in ‘evolution’. In NSW, a Snr Executive (Person E) argued that this lack of planning, depreciation and amortisation for ICT asset replacements means that governments fail to ‘reinvest naturally’ in ICT infrastructure, which means funding requests for large projects ‘come out of the blue’, and as a CIO (Person S, NZ) argued, this then forces agencies into undertaking a large project. This argument found support in a Snr Assurance Officer (Person

T, NZ), who argued without an ‘iterative investment cycle’ in ICT assets agencies are forced down a major replacement path and may limit alternative delivery options.

In the APS, a Snr ICT Assurance Officer (Person AD) with jurisdictional-wide responsibilities, stated that their agency is ‘thinking about this a little bit’ and acknowledges that the APS ICT investment strategy needs to be more ‘strategic’; instead of isolated one-off bids, to look at investment decisions across a portfolio and to develop a ‘roadmap’ for future investments. However, they did admit that whilst this is where they would ‘like to get to’:

‘... [this] would not be an easy path ... [as] ... government budgeting does not work that way at the moment. It just does not.’

Paul Barratt (ex-Secretary, Department of Primary Industries and Energy & Department of Defence) when asked why ICT solutions are not treated as assets, argued this was due to ‘political laziness’ and a failure of politicians to understand that ‘if you want something like a high-quality education system, you need the systems [to support this]’, such as paying staff, and student systems.

However, there was also evidence of jurisdictions trying to address the issue. In NSW a Snr ICT Assurance Officer (Person Z) with jurisdiction-wide responsibilities is looking at the development of a 10-year ‘strategic roadmap’ but admitted ‘it is early days’ and is going to require consultation with and cooperation by Treasury due to required changes in funding guidelines as a result.

There was also a perceived political influence on treating ICT systems as assets and funding accordingly, one that could limit any initiatives within the jurisdictions to address the issue. Investing in ICT maintenance, over more publicly popular options, was argued to be a stumbling block. A former NSW Government Minister explains this in Box 7.5.

Box 7.5: A political perspective on ICT asset management

Adrian Piccoli, looking back at his time as NSW Education Minister, argued that a lack of forward planning in asset replacement and ongoing maintenance was part of the problem with the *LMBR* program, as the agency was trying to ‘do one update after 30 years of not doing anything’ and in the end resulted in a ‘mess up of planning’. However, Piccoli argued there is

a political factor that limits the ability to address this issue, that is the public's perception of the use of government funds. Piccoli explained it as:

... the political problem runs into this issue of what the public's perception is on around how money should be spent in health, transport and education, [there's a belief that this money] should be spent on, you know doctors and beds and teachers and trains and train drivers, so if you are spending half a billion dollars over 10 years on an IT system the public perception is this is a waste of money This is the historical reason why there is a reluctance to get regular upgrades. There is budgetary stress, and our school needs a new hall, but you are spending 100 million dollars on a HR system, what a waste of money, what we need is a new hall or science lab updated. That is where the political pressure comes from. A Minister is tempted to say let us not do the IT upgrade, there is no political bang in an IT system, you know you cannot unveil a new IT system whereas you can unveil a new hall. Yes so, it very much plays into that.

Interviewer: How else does that impact?

Piccoli: One is they do not regularly get money to do IT upgrades. When you are in a competitive budget environment is difficult because the political imperative is upgrading hospitals, upgrading schools, it is not upgrading IT systems. So then when they do, they have to or because it has been such a long period it is much more complicated and one big lump of money instead of spending incremental amounts.

From this, it can be arguably concluded that it is not only governments that treat ICT assets differently to infrastructure assets, the public do, and that public perception in turn has a direct political influence on how funds are prioritised.

In conclusion, a CIO (Person AH, Vic) provided this brutal assessment of government negligence in ICT asset management, and also proffered a solution:

'Government is the most negligent and irresponsible owner of infrastructure of anywhere because they do not fund sustainment of their assets and replacement of their assets. So, that means that the safest path is not to have any assets, is to be acquiring IT systems and infrastructure through as-a-service arrangements, and that is what cloud services are all about. That saves government from itself, because it turns IT systems into a binary thing, a binary decision.'

In effect, arguably a view that government will not change on this matter, so remove assets and their maintenance and upgrade from government responsibility. This option was also raised by a Senior Partner (Person AL) in a large consulting firm, and a New Zealand CIO (Person S) who also agreed that government investments in their ICT assets are insufficient and not an organisational priority, hence governments should seek serviced based solutions. They argued that this would provide:

‘... more flexibility and would not be as disrupted by political events.’

In summary it was perceived that financial management processes for large ICT software projects have a direct negative impact on project outcomes. The process that requires a full up-front forecast was argued to be flawed, as it provides neither surety of funding nor limitations to funding. The financial management processes were perceived to have failed to adapt to support alternative approaches. Investment in ICT asset management and maintenance was stated to be missing, leading to ‘must have now or else’ large funding requests, and a failure to understand what other looming requests are ‘out there’.

7.2.5 Large project dilemmas: should they be avoided, can they, and what alternatives are there?

Stop doing large ICT projects! That is the message from David Boyle, a past CBA and NAB CIO. The overriding reason was argued to be that the:

‘... further you look into the future ... is it very hard to estimate the target state.’

Boyle argued you cannot have certainty in long-term plans. A Snr Partner (Person AL) from a major consulting firm, agreed and stated that government’s planning for a large ICT project is ‘no longer the best option’, and they must now look at alternatives such as component-based, iterative delivery. These views were not isolated to the private sector interviewees. This was also a common view across the public sector interviewees. A CIO (Person O, NZ) was just as emphatic and stated:

‘... to me the answer is obvious, do not do big projects! Do a collection of smaller projects.’

A Snr ICT Assurance Officer (Person Z, NSW) stated that large ICT projects are ‘hot topics’, and that NSW needs to ‘adapt to new ways of delivery’, and this means moving away from ‘the big monolithic programs’ and that as a result the jurisdiction was trying to move to a

‘situation’ where large projects can be avoided. A CIO (Person AH, Vic), burnt by past large ICT projects, stated that they:

‘... never want to have anything to do with a large IT project again.’

Furthermore, they argued that they do not need to as there are alternatives. A Snr ICT Assurance Officer (Person AD, APS) cited a government initiative driven through the DTA to address large ICT software project planning. They stated there is an intent not to have:

‘... big five-year projects that are funded with \$1b off the back of a 400-page business case that then becomes shelf-ware and no one ever looks at the project again until it gets to the end and realize none of the benefits have been delivered.’

They stated that ‘the government's mood at the moment very much is to chunk things down’ into smaller components but clarified that ‘it is a work in progress, we're not there yet.’

A Program Director (Person F, APS) involved in the ATO change program, which covered a 10-year time period stated that the pace of technological change was also a factor front and centre of their planning and a contributor to why the project followed an iterative component-based delivery approach and argued that this was necessary as if they did not deliver quickly, they could be ‘left with nothing’. Adrian Piccoli argued this was a factor in the LMBR program, as planning was completed in 2007, and solutions chosen soon after, yet in 2015 they were still going, and during that time iPads had emerged for use in schools, and SAP ERP may not have been the choice if a review was done today. However, as a CIO (Person S, NZ) stated you do have to make a technology choice at some time, and you accept that within a few years something newer will have emerged. However, they argued the potential impact over a 10-year period as against a two-year period would be substantially reduced.

7.2.5.1 Agile delivery

The overwhelming perceived alternative to the large project approach was via Agile delivery alternatives. Given the argued impossibility of preparing a relevant forecast at the initiation of a large ICT software project, Agile delivery was argued to address this problem. A CIO (Person AH, Vic) argued that Agile is a means to address this long-term impossibility, and is a:

‘... methodology designed to deal with uncertainty in scope and quality.’

A CIO (Person AI, Vic) added that the Agile approach allows uncertainty to be replaced with certainty as the project progresses, it is agile by name and nature, and can be adapted given current circumstances. A CIO (Person O, NZ) argued that Agile was simply evidence that the large project world 'has changed' for the better and that government needs to embrace this. Their argument was expressed as:

'So, I think that is [Agile/component-based] a much more organic and sustainable way ... than the big mega projects of the nineties and noughties.'

A private sector CIO (Person AC, Vic) claimed that Agile delivery enables large complex projects to be broken into discrete deliverables and for the project to:

'... walk before they could run.'

Person AC claimed that in their experience the use of Agile in these large projects:

'... significantly outperformed the waterfall-based approach'.

There were other claimed benefits to the use of Agile delivery and improvements in forecasting as a result, such as that by a CIO (Person AH, Vic) who claimed that it can lessen the risk with procurement of services. They argued that procurement of services for traditional large ICT projects is high-risk, requires expensive upfront definition and ongoing contract management, and adds an additional capability requirement to the project. Without pulling any punches, they claimed this type of up-front long-term all-of-project procurement as:

'Evil, immoral and dangerous.'

There were also perceptions that Agile delivery is being met with resistance within the sector, due to organisational factors such as culture and traditional roles. A CIO (Person AI, Vic) claimed there was resistance due to a culture of saying to the minister, related to the earlier financial management issues, you do not know yet what the cost or time or final deliverables will be, is not acceptable, so therefore:

'... until you can get comfortable with the idea that you are not going to make a commitment on day one, you cannot do Agile.'

On a similar theme, David Boyle argued that without organisational change across a number of functional areas, Agile developments will struggle in the public sector to deliver on time

and budget as they get caught up in red-tape and organisational hierarchy. This was because Agile requires Agile decision making, and trust at higher levels for lower levels to make project decisions. Boyle stated Agile needs an organisation that enables:

‘... rapid decision-making rather than slow and bureaucratic decision-making.’

The perception was that therein lies a barrier to Agile delivery in the public sector as current institutional frameworks were argued to be not supportive of Agile. A Snr Assurance Officer (Person R, NZ) claimed current New Zealand guidelines such as the *Better Business Cases* and Gateway Reviews are not designed to cater for projects delivered via Agile. They argued this means these processes would need to change to fit Agile. Person R argued the mismatch between the framework and Agile options has been discussed ‘quite a lot’ and that there was a common perspective in New Zealand that change is required. The preparation of the business case at the initiation stage was seen as one area that needs to adapt. They stated this was because:

‘... the Better Business Cases framework does not support Agile as well as it could do, because if you are spending 12 months doing a Better Business Cases, then the world has already moved ...’

There were a few dissenting views on the use of Agile as an alternative delivery method for large ICT projects. These views had a common perspective that Agile was just another ICT fad. A Snr Executive (Person AN, NT) summed these minority perspectives up by stating:

‘[Agile] is fashionable at the moment ... This whole concept of get a bit of money, and do a bit of scoping, and build a bit, and then see where it goes and get some more money, I am really uncomfortable with that. I think it is a slippery slope, I really do. To me that is just insane, and I think it is code for lack of rigour and not doing your bloody homework up front’.

Whilst there was much talk about avoiding large ICT software projects through the use of Agile delivery, the elite interviewees were asked if it was always possible to do so. A Program Director (Person J, NZ) argued that it ‘may not always be possible’ to avoid large ICT projects, with a New Zealand colleague (Person J, Snr Project Manager) supporting them by arguing that for a project like Novopay ‘you could not have done it any other way’. A CIO (Person AK, Vic) argued that there will always be a need for large ICT projects, as they were ‘unavoidable’, and that means the emphasis should be on agencies ‘addressing the capability

issues' to undertake the projects. A CIO (Person AH, Vic), a strong Agile advocate, mused over this, and stated it 'may be not possible' but they would look at all avenues to 'de-risk' the project.

Others such as a Snr ICT Assurance Officer (Person AD, APS), believed regardless of size and complexity, alternatives to planning as a large project always exist by breaking it into distinct deliverable components. An example of this was provided by Adrian Piccoli, citing the *LMBR* program, who claimed that the project made an initial mistake when the implementation of new finance, HR/Payroll and student management solutions across the schools and TAFE sectors was planned as one program. Piccoli argued each should have been treated separately. A Snr ICT Auditor (Person H, NSW), when discussing *LMBR* agreed, and regards to planning the work as one super project questioned:

'... was that really the only option [available]?'

In summary the overriding perception was to not undertake large ICT software projects via traditional delivery methods, an instead look at alternative iterative component-based delivery methods such as Agile. Break down the complexity and risk. Alternatives to planning as a large project were argued to always exist and therefore should always be investigated.

7.3 The findings and their relationship to the theoretical concepts

7.3.1 Capability and capacity building

Firstly, the dominant perception was that the sectors do not have the capability to forecast large ICT software projects, the major problem being the guidelines within the institutional frameworks. It was argued to be impossible to forecast in full up-front, as is the standard requirement, for a long-term complex large ICT software project with any accuracy or relevancy. There are just too many future unknowns, regardless of methods used, to do so. However, agencies/projects are being forced to do exactly that, so the forecast will be a best guess based on current known facts, experience, and capability, themselves in short supply. This process was described as 'a ridiculous nonsense of a process' as everyone knows the figure is a 'best guess', yet it becomes the basis on which the project is approved and funded, and also sets a benchmark against which the project will be assessed. A situation of 'I was forced to provide you with a forecast when I did not want to, and told you it was wrong, yet now I am being judged against it'.

Secondly, guidelines that set boundaries on project approval were argued to directly lead to forecasts made to fit a guideline and gain approval, rather than reality. In addition it was perceived that whilst there may be optimism that the project can stay within that limit, there is also a culture of, ‘If I need more money, I will probably get this, as once I have started it is unlikely the project will be stopped.’ This was argued to also lead to over-estimation, and the attitude of ‘I’ll get as much as I can’ just in case. The guidelines encourage either deliberate or delusion optimism, further adding to the perceived ‘ridiculous’ nature of the process.

Thirdly, every project operates within an organisational context, and therefore many factors within that organisation can majorly impact on the project and addressing those should be part of the forecast, yet this was perceived to not always happen. The problem was argued to be that it is also impossible to predict these organisational impacts with any accuracy over a long-time period; for how can you possibly know with any certainty what will happen in five years?

Fourthly, as a result of the above, there was perceived to be a certain amount of irony in the requirement to fully forecast up-front for a long-term large ICT software project. It was argued the requirement is necessary as ministers and the jurisdiction need ‘certainty’ over future costs, and you cannot have a ‘blank cheque’. However, given the impossible nature of forecasting accurately for these projects it was claimed all they in effect gain is future uncertainty, which was what they were trying to avoid.

Lastly, whilst an assurance process to review forecasts was stated to be common practice, this process itself was also perceived to be ‘impossible’ due to the requirement for a full up-front forecast. The agency/project will defend their case, argue the variables, describe organisational complexities, the assurance team can question, and fine tune based on that advice, but in the end, the impossibility remains. The assurance team themselves were argued to face the same challenges as the project team.

7.3.2 Financial management

There was also a dominant perception that sectors do not have the financial management capability and maturity to manage investments in large ICT software projects. There was an argued focus on cost to the exclusion of investment. Funds were claimed to generally be allocated on single large project request basis and not part of portfolio management and the

funding guidelines reflect this. It was also claimed decisions to keep funding projects are not always made following financial or project management disciplines.

Secondly, there was a stated failure to treat ICT solutions as assets and as a result there is inadequate investment in their maintenance, not helped by an argued lack of political priority to fund this work as it is not publicly appealing. As a result, it was argued that on a jurisdictional level, the life-expectancy of these assets could be a major hidden impact. The lack of an asset management process was also claimed to be a factor in forcing agencies down the path of an 'urgent' large project to replace redundant systems.

7.3.3 Contract management

A contract cost is a major part of a project's forecast. When this is negotiated and costed up-front as part of the full project forecast it was argued to have the same problem as project forecasting. That is, it is impossible to do with any accuracy given there is so much future unknown and leaves the project and the vendor exposed. If there is then an organisational expectation that the vendor is now trapped, they may just walk away, as was evidenced in the interviews.

7.3.4 Organisational learning

The interviewees stated there is much learning from past projects detailed in copious amounts of documentation, yet despite this, it was claimed the same issues keep on arising. Written records were perceived as ineffective. Verbal interaction was the preferred option, to sit down and discuss learnings with someone who has been through this before. It was also acknowledged that there is much experience within and without the public sector that could enhance learning. However, collaboration across jurisdictional agencies was claimed to be rare, or even deliberately avoided with the culture of the public sector agencies cited as one reason. Where there was evidence of collaboration it was claimed to have been effective.

7.3.5 Leadership

It was commonly claimed that as part of a large ICT software project there is typically a need for organisational change, that the organisation will adapt its processes to the new solution, and the forecast is based on that assumption. However, it was also argued that as the project progresses the intent to change is not matched by organisational action or willingness.

Therefore, the project approach was perceived to morph into adapting the solution instead, as it will be ‘quicker’ and ‘easier’.

The stated problem with leadership not taking on this organisational change, and instead customising a package to fit the organisation, is that the solution then becomes heavily customised. Therefore, as this was not part of the original forecast, the impact was claimed to be two-fold. Firstly, there is an impact on project cost and schedules to undertake the work. Secondly, there is a future ongoing support cost which was not part of any initial planning.

7.3.6 Entrepreneurship

The overwhelming argued approach to address issues in forecasting for large ICT software projects was to stop undertaking the work as large ICT projects, as it is a problem that cannot be solved otherwise. Organisations should look at alternatives when planning, this is even for projects typically thought of as a ‘must do as a large project’ type such as payroll delivery. The argued concept was that there must be alternative approaches to one that is known to produce almost certain poor outcomes.

To stop doing large projects, and to address the complexity and the impossible nature of forecasting up-front for a large ICT software project, an Agile delivery method was the dominant option. Delivering the solution in components, with short term forecasts and funding, improved each cycle with lessons from the past, and being able to quickly adapt to changing circumstances was preferred. The issue is that the jurisdiction needs to change its processes and culture to enable this delivery method, and how these are funded, and that was perceived to be a challenge. To avoid the institutional framework challenges actors are finding ways to manage this locally.

7.3.7 Agency

There were two major perceptions on the role of agency in forecasting. Firstly, the political factor was argued to be a powerful force in project planning and forecasting. There can be solid guidelines, planning, and forecasting with the best if optimistic intent based on those guidelines. However, a minister can ignore all these and impose a solution; cost and timeframe based on a political need with scant regard for any planning on whether this is achievable.

Secondly, where agencies and projects have decided not to undertake a large project and to instead implement strategies such as an Agile component-based approach, with alternative funding arrangements, this was possible due to the agency of the actor. Box 7.6 is a mini-case study of the ATO change project provides an example of this.

Box 7.6: Mini-Case Study — The ATO, an early adopter of component-based delivery

The Sponsor chapter detailed a successful large 10-year ICT software change program within the ATO, with the then Commissioner of Taxation, Michael Carmody, as Sponsor (see Box 5.1). Carmody when interviewed was also asked about the planning and forecasting process. Carmody was asked about the capability within the ATO to undertake this planning and provide relevant forecasts, given the extent and duration of the work. He acknowledged upfront that the ATO lacked the capability and capacity to plan and deliver the work and Accenture were engaged to fill that gap. They were engaged on an outcomes-based contract and were integrated within the project teams working with internal staff. It was a successful and long-term relationship. The forecasting process was then discussed:

Interviewer: When preparing forecasts, you based this on your outcomes?

Carmody: Yes

Interviewer: How did you work out how you were going to do that, and in turn calculate a time and cost for doing so?

Carmody: ... I tried to front-end some early deliverables so ... [stakeholders] ... could have a bit of confidence ... so that people can see inside and outside the organisation that we were actually delivering on this project ... Then there was the hard slog of breaking down ... the outcomes ... how you deliver that, what time frames would be needed ...

Interviewer: So that was a progressive process?

Carmody: Yes.

Interviewer: You did not sit down and say it is going to take me 10 years and it is going to cost X millions?

Carmody: That is not how it started, it started from delivering some earlier deliverables and then learning from that ...

Interviewer: So, you were progressively gaining knowledge and experience for the next phase?

Carmody: Yes.

Interviewer: Did you think that was a better approach over a guess up-front of X years and X dollars ... is it better to break it down into components and then build on that?

Carmody: Well from my actions you can see where I thought the advantage was.

Carmody and the ATO in effect were delivering the project as a series of distinct mini-projects and employing component-based delivery methods for each of these. It was then curious how Carmody funded and gained approval for such a method.

Interviewer: The funding of such an approach is not always supported by the current project financial guidelines.

Carmody: Well, rightly or wrongly, we took a decision that we were going to fund this ourselves, we were not going to Government. Now, that put a bit of burden on the organisation, but it also freed us up to do things the way we wanted to do it.

Developing the project plan was then discussed.

Interviewer: How did you balance your planning against any potential overly optimistic forecast?

Carmody: Well look, timing of projects of that magnitude is inevitably difficult and I guess you have got to be careful in leading these that you do not force people into overly optimistic outcomes.

Interviewer: Is that another reason for, or an argument to break it down into components?

Carmody: Well, I certainly say it would be yes.

Carmody: We went in a staged way but then eventually we had a full plan, you know, it is not as if we did not have a full plan to deliver but we went through it in a staged way to get there and that gave us a better opportunity to understand what was involved.

It is important to note that even though a staged component-based planning occurred, this was not in isolation, there was an overarching plan. Carmody highlighted the difficulty in accurate forecasts for long-term projects in totality but breaking this planning into component-based plans added relevancy and reduced factors like optimism bias. The advantage of this approach

in planning was confirmed by and supported by a Snr Project Manager (Person AB) in this project. They stated that findings from the first phase of the project were used to enhance the second phase, and so on and each phase became more defined and relevant. Person AB also argued that this approach supported good contract management with Accenture, as that after two phases a fixed priced method for the respective outcomes drove commitment between the parties to deliver, and to be confident that delivery within the boundaries was possible.

Carmody was also asked about looking outside, seeking collaboration, as part of the forecasting process.

Interviewer: Did the ATO ever work with other Tax offices?

Carmody: Yes ... we did work closely with a lot of tax administrations around the world, we pinched some of their ideas ... it was that sharing of ideas with international organisations, developments with international organisations that we got some of the ideas that we wanted to press, and they were open in sharing their experience and how they achieved it and the difficulties they faced.

Interviewer: Do you think the public sector has a culture of collaboration and cooperation on some of these things?

Carmody: I guess I did not see a lot of sharing, that is the only way I could answer that.

Carmody was then asked about the future of large government ICT projects given the ongoing problems with poor outcomes.

Interviewer: Why do the public sector continue with large projects? Can they be avoided? They are problematic, the outcomes are being challenged all the time. What is the answer?

Carmody: Well, that depends on what you are trying to achieve as to how you frame a project ... I think often these projects get out of hand because they do not have a clear outcome that they are trying to achieve, and they just grow upon themselves.

Interviewer: Okay, so the public sector adapting some of its rules to better deal with component based, Agile development, changing the way funding happens to fit that sort of stuff ...

Carmody: Yes.

Carmody was also asked about internal methods of learning to improve planning, and whether the choice of a staged component-based delivery was a factor in organisational learning.

Interviewer: What about learning? When you used your component-based method, I presume from each of those you would learn something ... almost a cycle of continuous learning?

Carmody: Yes.

Interviewer: The reason I am asking that is that past projects typically do lessons learned reports for future projects to use. However, they can be typed up and then go in a draw.

Carmody: Yeah, you could do all of that, but I think the way you do that is if you have a good group of project managers, all working on their projects but working as a collegiate group, that is when you get the real transference of experience and learning rather than reading something.

In summary, Carmody reduced forecasting complexities and increased the relevancy and accuracy of those forecasts by breaking a large complex program of work into a series of smaller less complex progressively delivered components. Carmody acknowledged a lack of internal capability required to undertake this planning and engaged Accenture to provide those specialised services and developed a strong relationship with that vendor to mutual benefit. Carmody looked outside to seek collaboration and to both gain ideas and to improve planning. The component-based delivery also enabled a progressive cycle of internal continuous learning to employ for the next stage. In addition, the plan had a clear set of tangible outcomes to work towards and to be assessed against. Carmody also decided to prioritise funding of the component-based delivery from internal sources rather than through APS channels, whose funding guidelines and requirements quite possibly may have been odds with the approach employed.

There is much to admire about Michael Carmody and the way he led and supported the planning of this extensive body of work. Exceptional. He was a trend setter, possibly without even knowing it.

7.4 Conclusion

Once again, the perspectives of the elite interviewees across the various forecasting themes indicated there is much commonality across the Australian and New Zealand sectors. The governance of the forecasting via the institutional framework has been highlighted as being ineffective. The overwhelming perception was that the sectors are forced into providing a

forecast that arguably everyone knows is inaccurate, an impossibility to undertake with accuracy, but they do it any way, and despite this knowledge the project is approved, and an irrelevant benchmark established.

There is a false sense of security or even a perceived irony in this process. It was argued to be necessary to provide the minister with some surety, and to stop projects having a 'blank cheque'. Firstly, the initial forecast was argued to provide uncertainty, not surety. Secondly, projects however they are funded never have *carte blanche*. It was argued continued funding, and additional funding is always subject to organisational approval, and organisational and political influences.

Therefore, the argument was to stop doing large ICT projects and stop undertaking this 'nonsense' of a process in preparing full up-front large project forecasts. Break the body of work into manageable components, review and forecast progressively and cumulatively, and fund accordingly. The preferred approach was via Agile delivery; however, frameworks and culture need to change to support the process. As this has not happened to-date actors are acting independently.

Lastly, a failure to treat ICT solutions as assets and to fund their maintenance and plan for their replacement was cited as a prime reason for the continuing need to undertake large projects, as action is never taken until replacement becomes 'urgent'. However, it was claimed that spending money of ICT asset maintenance can be politically and publicly unpopular. A dilemma.

In conclusion these findings can be compared to key points in the literature review (see Table 7-2). Whilst this is a simplified summary, it does serve to highlight a disconnect between what literature argues as good governance for forecasting, and the perceptions of the elite interviewees on the effectiveness of institutional governance for forecasting in the Australian and New Zealand public sectors. They are not aligned.

Table 7-2: Comparison of literature review and findings

Literature review (Chapter 2): key points	Forecasting findings
Unrealistic forecasts ‘corrupt’ the decision-making process’ (Anderson et al 2016).	There was a perception that forecasts are being made to be approved rather than be realistic.
Unrealistic forecasts set a benchmark for how the outcome will finally be assessed. (Hall 1980).	It was perceived that the sectors are failing to address the forecasting issue, which results in projects being expected to deliver to unrealistic expectations.
Forecasts need to have efficacy. There is a requirement for ethical planning; a forecast that is reasonable, truthful, and accurate (IMPA 2015; PMI 2017).	It was perceived that actors are ‘gaming the system’.
Forecasts are open to optimism bias, both delusional and deceptive, and organisations need strategies to manage this (Flyvbjerg 2008).	It was perceived that optimism bias is not being effectively managed.
Project complexity increases the likelihood of poor forecasts, leading to forecasts that are ‘fanciful’. (Cooke-Davies et al 2011; Herszon & Keraminiyage 2014).	The overwhelming perception of the interviewees was that the forecasting process was ‘ridiculous.’ However full up-front forecasts remain the norm in the institutional frameworks.
Component-based agile delivery argued as the means to break down complexity and to improve forecasts. This includes changes to the funding of these projects Cao et al 2013).	The perception was that the institutional frameworks do not support funding of large projects by a series of iterative smaller projects.

Chapter 8: Novopay case study – alone and set-up to fail

'I'm sorry, but the whole of government was not acting as a whole of government at the time, it was acting as independent departments. So that is more of a fantasy solution [seeking New Zealand Government support] than a real solution at the time.' (Person BB, MoE Snr Executive)

8.1 Introduction

In 2013 the New Zealand Government commissioned an inquiry into the Novopay Project (Novopay) run by the Ministry of Education (MoE) titled *Report of the Ministerial Inquiry into the Novopay Project*⁴⁶ (Jack & Wevers 2013); in this chapter the report is referred to as the *Ministerial Inquiry*. The following statement was included in the report:

'The impacts of the well-publicised Novopay failures have reverberated across New Zealand. Every state and state-integrated school in the country has been affected. Dealing with the aftermath has distracted schools' staff, principals, boards of trustees, the Ministry of Education and Ministers from other important concerns. This state of affairs and the wider disruptions that were caused were avoidable.' (Jack & Wevers 2013, p. 1)

The *Ministerial Inquiry* (ibid, pp. 9-12) highlighted a myriad of issues that contributed to the project's poor outcomes, covering in detail the period of post project approval through to go-live and beyond. This thesis chapter however will analyse the institutional governance of Novopay, the framework under which the project was executed. Aligned to earlier chapters, the focus will be on three core roles/disciplines, namely the sponsor, project management and forecasting. Was a capable sponsor appointed? Did the MoE have the required project management capability for such a complex project? Did the initial forecast impact on the project? In short, how effective was the institutional governance of Novopay?

In this chapter elite interview data, from a number of stakeholders in the project (see Appendix B: Novopay interviewee data), will be analysed to interpret perceptions of the

⁴⁶ Note: The original (Novopay) *Schools Payroll Revised Stage Two Business Case*, November 2007, was not publicly available. Therefore, as noted in various sections of this chapter, information about the content of the Business Case was obtained from references to it within the *Ministerial Inquiry*.

Novopay institutional governance in the three core roles/disciplines. These interpretations are compared to the then institutional framework, the *Guidelines* (SSC and the Treasury 2001), findings from the *Ministerial Inquiry* (Jack & Wevers 2013), and various independent reviews into Novopay. The findings are then related to the theoretical concepts, and lastly a short conclusion of the findings is made.

8.2 Sponsor

From Novopay initiation through to post go-live a MoE Deputy Secretary, Anne Jackson, was the project sponsor. Jackson resigned shortly after Novopay went live citing her responsibility and was quoted as saying she was ‘truly sorry for the additional stress put on teachers, staff, and pay administrators’ (RNZ 2013). Jackson was invited to be interviewed but declined. Her perspective would have provided a personal story to compare with the perspectives of others assessing her capability. It is not the intent or purpose of this thesis to be critical of Jackson’s performance, the intent is to assess how the institutional framework supported her in this role.

8.2.1 Capability: was Jackson capable, and was she assessed prior to appointment?

The interviewees acknowledged Jackson’s standing as a capable senior executive and perceived that there was a resulting organisational belief these skills could simply be transferred to the sponsor role. For example, a MoE Snr Executive (Person U) posited:

‘Anne was a smart person ...and she ought to have known [what to do]’.

Vendor views were harsher, with a Datacom Executive (Person BA) stating Jackson:

‘... was completely clueless ... out of her depth’.

However, Person BA argued this was a MoE failure, in that Jackson did not have the required sponsor experience, and questioned why the agency therefore assigned her to the role as:

‘... they were setting her and the project up for failure’.

A MoE Snr Executive (Person BD), agreed with this perspective, by stating:

‘[it was wrong] to assume that someone in the policy area can just take on an IT project in a sponsor’s role where you have these varying responsibilities and relationships which you may

not have known about, just not had much experience, you are setting yourself up for a bad time’.

No interviewees were aware of any formal sponsor capability assessment prior to Jackson’s appointment. The *Ministerial Inquiry* (Jack & Wevers 2013), nor other documentation such as the review of the State Services Commission’s (SSC) role (Caravel 2013) make mention of this. However, the *Guidelines* (SSC and the Treasury 2001, pp. 23-24) stated that the sponsor ‘should have had prior experience in large [IT] change projects’, and central agencies had a responsibility to ensure that was so.

In summary, interviewees perceived that whilst there was an organisational assumption that Jackson was capable of the sponsor role, she was not, and as a result argued the project was set-up for failure. The appointment was also contrary to the institutional framework guidelines, yet the central monitoring agencies seemingly allowed this to happen.

8.2.2 Role: how aware was Jackson of her responsibilities and accountability?

8.2.2.1 Responsibilities

Without interviewing Jackson, it is not possible to get a first-hand account of what if any process was undertaken to ensure Jackson understood the sponsor role and its responsibilities. Only one elite interviewee had any direct knowledge of how Jackson was made aware of the sponsor role, and this was via institutional framework guidelines and procedures. That is, by reading documentation. This person, a MoE Snr Project Manager (Person AZ) stated that:

‘... there was very definitely a role description that Anne Jackson signed up to that had lined all the, what you would expect the sponsor role to have. It was captured in a number of documents that she signed off on. So, I do not think that she could claim that she did not understand that.’

A MoE Snr Executive (Person BD), who in addition to a Novopay role had previously been appointed as the sponsor of an earlier large MoE ICT project, was asked about their awareness of the role. Their response indicates a vagueness about the role and being left to fend for themselves.

Interviewer: ‘Did you know what the role of a sponsor of an ICT project was?’

Person BD: '... whether I fully understood or not is probably a debatable question ... notionally I thought I knew what it was, whether I had the right idea of what it was is questionable ... sort of exercising governance to some extent ... I had some concept, but I certainly would not say I had a deep knowledge or understanding.'

Interviewer: 'Did the SSC provide advice on the sponsor role?'

Person BD: 'No, nothing terribly specific.'

Asked whether they thought Jackson had the awareness required, Person BD argued Jackson was not clear on the role, that it had not been fully explained to her, and also posited this should have been a jurisdictional responsibility prior to her appointment. Interestingly the *Guidelines* (SSC and the Treasury 2001, p. 38) indicate this is exactly what should have happened as it was a central agency responsibility to ensure at project outset that there is 'clarity around the sponsor's role and responsibilities.'

The other elite interviewees could only offer perspectives on how well Jackson undertook the sponsor role throughout the project, such as a Talent2 Executive (Person BG) who stated that Jackson was 'pretty hands off with the vendor' and in fact it was 'almost as if Anne didn't understand where the responsibility was.' However, the future management of the role cannot be causally related to a lack of understanding of the role and its responsibilities.

In summary, it was perceived that Jackson was reliant on reading written documentation to understand the role. There was no evidence identified of central agencies undertaking their own responsibilities to ensure Jackson had absolute clarity on her role.

8.2.2.2 Accountability

Without Jackson's input it is impossible to state if the ultimate accountability, which was career ending, was understood. If Jackson did not, then many of the interviewees had strong opinions, and reflecting on the project's failure believed that Jackson was correctly held accountable. A MoE Snr Executive (Person BD) stated that this accountability:

'...comes with the job and should not have been a surprise.'

A MoE Snr Project Manager (Person P) stated:

'... it was correct for Jackson to lose her position.'

A Datacom Executive (Person BA) stated that Jackson:

‘... deserved to be fired.’

Another interviewee, a Snr New Zealand Teacher’s Union Representative (Person BH) stated that whilst Jackson may have suffered, the Novopay shortcomings impacted substantially and negatively on many other people; the very people the system was to be looking after:

‘... we talk about the personal cost to Anne, there were people in the front line of schools’ administration, the cost was [to them] very personal.’

There was one interviewee who had a different perspective. A MoE Snr Project Manager (Person BC) expressed a view that by looking for a fall-guy, and then punishing that person, did not really help the MoE or the New Zealand public sector in addressing sponsor capability. Person BC argued that punishing Jackson did not address the real issue, and that was why with her lack of experience, was she allowed to undertake the role in the first place. Their stated view was:

‘... they [MoE] felt that she was just a scalp ... then they could wash their hands of it and say now we are into a new era. Those people that caused all that trouble have gone, and of course it was not that easy.’

In the New Zealand parliamentary system, whilst Jackson as sponsor had the accountability for delivery of Novopay, it was the Minister/s responsible for Education that had ultimate accountability for Novopay. However, the *Ministerial Inquiry* (Jack & Wevers 2013, p. 88) found the Ministers ‘were not always well served by the quality of advice’ and in effect cleared them of any accountability. Several interviewees provided a different perspective, claiming that the political influence was downplayed in the *Ministerial Inquiry* (Jack & Wevers 2013) to avoid Ministerial accountability. As a result, one New Zealand CIO (Person L) recommended that when reviewing the report’s finding on accountability to:

‘Keep in mind it was written for the Minister’.

In summary, most interviewees perceived that Jackson as the sponsor was correctly held to account for project failings. However, there was a dissenting perspective which argued the punishment did not address the issue, which was addressing capability in the sector. There was also a perspective that the role of ministers and their accountability was underplayed.

8.2.3 Model: how was Jackson selected and appointed?

Most interviewees were not aware of how Jackson was selected and assumed this was to do with seniority in the organisation. However, a MoE Snr Project Manager (Person BC) and a New Zealand Snr ICT Executive (Person BE) were definite and stated that Jackson's selection was due to her being the MoE Deputy Secretary with line responsibility in the organisation for Novopay deliverables, which they argued was and is still the de facto New Zealand approach.

Jackson was stated to have undertaken the sponsor role in addition to her substantive Deputy Secretary role. Her responsibilities already included school policy, teacher supply, industrial relations, curriculum, and school infrastructure, found to be a 'very large workload' (Jack & Wevers 2013, p. 81). In addition, a MoE Snr Executive (Person BB), stated Jackson at the time was also responsible for 'big educational reform programs underway'. A MoE Snr Executive (Person BD) a past sponsor on another large MoE ICT project, was asked about how they were selected and the model utilised.

Interviewer: '... were you given the role as a full-time position, or on top of everything else you were doing?'

Person BD: 'On top of everything else I was doing'.

Interviewer: 'Anne Jackson was given the sponsor role on top of her normal job, and she was doing several large reforms, do you think that was a good model?'

Person BD: 'No, I think it is a significant learning ... Secondly, my background was policy ... and Anne's the same, we might have a bit of common sense but none of us have the detail, we end up running these things ultimately responsible, without I think adequate preparation or background'.

Other interviewees also argued that this was not an appropriate model. A Snr ICT Executive (Person BE) stated it put Jackson in a:

'... very difficult position'.

A MoE Snr Project Manager (Person BC) posited that appointing Jackson as the sponsor was evidence of the MoE's 'immaturity' in these large projects. Perhaps a MoE Snr Executive's (Person BF) perspective sums these views up best:

‘... those Deputy Secretary roles are crazy anyway. They are massive, massive. They completely consume your life ... those roles you just end up spending 14 hours a day dealing with crisis after crisis ... the notion that you could have somebody who, Anne was responsible for so much, she had the National Standards debacle, she had the NCEA⁴⁷, there were masses and masses of really large, high profile policy and implementation work that she was responsible for. She would have had to have been superwoman.’

From a vendor perspective, a Datacom Executive (Person BA), whilst arguing that the sponsor should not have been a part-time role, claimed that the real issue was that Jackson was not the right person for the sponsor role, and that the MoE needed to appoint a sponsor with the necessary capability, experience, and available time. A former MoE Snr Executive (Person BF), now working externally, stated that within their current organisation:

‘... we would never do that. You would never say, “Oh well, because this person is Deputy Director that person is responsible for”, and so on ... You need to put people in charge with the skills, the time, and the focus ... the hierarchical default is crazy. It is just foolhardy.’

Person BF argued that the creation of a temporary Deputy Secretary role with full responsibility for Novopay delivery would have been a better option, and that this could even have been an external person, with the required capability. This is similar to the option employed by the Australian Taxation Commissioner for a past large project (see Box 5.1).

In summary, Jackson was perceived to have been selected and appointed based on her substantive position, not on her capability or capacity to undertake the role. This model was argued to have been inappropriate. The *Guidelines* (SSC and the Treasury 2001, p. 38), other than ensuring the sponsor is ‘at the appropriate level’, offered no further guidance.

8.2.4 Training and support: what training and support was provided to Jackson?

One of the reasons it would have been valuable to interview Jackson was to confirm what training and support was provided to her or would have been beneficial to her to undertake the

⁴⁷ ‘The National Certificate of Educational Achievement (NCEA) is the main national qualification for secondary school students in New Zealand.’, New Zealand Qualifications Authority, viewed 26 October 2020, <https://www.nzqa.govt.nz/ncea/understanding-ncea/how-ncea-works/>

role. No evidence was found of Jackson being provided with training prior to appointment, presumably because, as MoE Snr Executive (Person BD) stated, ‘none existed.’

Given the lack of training, Jackson would then arguably have had an extra reliance on an effective support model, such as Novopay’s project governance structure. A MoE Snr Executive (Person BB) stated this was extra important as at the time of Novopay initiation the MoE was not mature in ICT capability, which left the project reliant on external support and advice, such as the central agencies. However, the effectiveness of the agencies themselves was questioned by a MoE Snr Project Manager (Person BC) who argued that the central agencies, such as the SSC, themselves do not have the required experience or capability to advise on these large projects. The quality of this support, and the impact on Jackson, was also raised by a MoE Snr Executive (Person BD) who argued the reliance on and trust in independent support advice left Jackson exposed. They stated:

‘... there is no central capability so where do you go ... there is a myriad of consultants running around all over the place ... an additional challenge is to know who to believe and who not to believe, how to use them ... that leaves you exposed too So, I think Anne ... she did not get a lot of help to know which help to take notice of.’

The Novopay support structure however was stated to comply with the requirements of the *Guidelines* (SSC and the Treasury 2001) and was approved accordingly (Jack & Wevers 2013, p. 58). The *Ministerial Inquiry* (Jack & Wevers 2013, p. 71) found that this proved to be inappropriate, ineffective, and resulted in ‘misplaced confidence’.

In summary, Jackson was provided with no training and was perceived to be reliant on an institutionally compliant and approved support structure. However, the argued problem was that the support team did not provide that capability to Jackson.

8.2.5 Sponsor conclusions

The perspectives on sponsor capability from the elite interviewees were clear, Jackson did not have the required capability, and was selected due to her Deputy Secretary role with Novopay line responsibility. There was also no evidence of any capability assessment prior to her appointment, despite this being a requirement in the institutional framework. To compound this lack of capability, it was perceived that Jackson was provided with no training, that the centrally approved support structure failed to fulfil its own role, and finally that Jackson was expected to undertake the sponsor role on top of her own substantial substantive duties, a

model that was perceived to be inappropriate. It was claimed she would have had to been ‘Superwoman’. It was a common perspective that all these factors set the project and Jackson up for failure from the outset.

Whilst there was a common perspective that Jackson had been correctly held accountable for Novopay shortcomings, there were two other perspectives on accountability that vary from the findings of the *Ministerial Inquiry* (Jack & Wevers 2013). Firstly, it was argued that punishment was not the only option and did nothing to encourage future executives to put their hand up for the sponsor role. Secondly, it was argued that the role and influence of the Minister/s in Novopay was underplayed in the *Ministerial Inquiry* (ibid).

8.3 Project management

8.3.1 Capability: did the MoE have the maturity and was it assessed?

There were no interviewees who perceived that the MoE possessed the required project management capability to undertake Novopay. A MoE Snr Executive (Person BI) stated the MoE lacked any ‘project management structure’. A MoE Snr Project Manager (Person BC) simply said:

‘No, oh no, no way, no’.

A MoE Snr Executive (Person BB) stated that:

‘[MoE] was not a sophisticated business organisation, it was a policy shop ... [the ability to run a large project] was unbelievably immature.’

The Talent2 and Datacom interviewees argued that this lack of capability led to many of the later problems where basic project management principles were not followed at key decision points. A Datacom Executive’s (Person BA) perspective summarises these views in the following quote:

‘The project command group, none of them actually knew anything about the payroll or project management.’

In an interview with the *Education Review* (2013b), Peter Hughes, the Secretary of Education, supported all these perspectives by stating:

‘... we [MoE] just were not set up for a project [Novopay] of that scale and complexity’.

As a result, a MoE Snr Executive (Person BD) argued the MoE had been left to fend for themselves, and they simply had to ‘cobble together’ a team as best they could. A MoE Snr Executive (Person BB), who held a senior Novopay role, argued that this was not just a MoE issue, as there was also no such capability across the New Zealand public sector, which meant agencies had to deal with issues independently. This perspective was supported by Mayhew et al (2013), in a study of Novopay, who argued that not only the MoE, but the New Zealand public sector lacked the comprehensive project management capability to undertake a project such as Novopay.

No interviewees were aware of any assessment of project management capability prior to project initiation and then approval, nor is this identified in documentation. However, the *Guidelines* (SSC and the Treasury 2001, p. 38) specified a central agency responsibility for assessing:

‘... the level of experience the department has had with major IT initiatives and whether there are adequate in-house skills for project management ...’

It is again unclear what happened to this monitoring role. The later impacts on the project in lacking this capability are well documented in the *Ministerial Inquiry* (Jack & Wevers 2013, p. 41, p. 45, p. 63, p. 97). A Deloitte (2013) report also found that the lack project management capability was a contributing factor to project issues. An example of this was claimed to be the go-live decision-making process. This is discussed in Box 8.1, and also explores how the political factor compounded this lack of capability.

Box 8.1 — Go-live decision-making compounded by political pressure

The decision to go-live with Novopay despite a range of issues being outstanding, such as incomplete testing, was found by the *Ministerial Inquiry* (Jack & Wevers 2013, pp. 43-51) to be a result of not using the correct disciplines and poor project governance. A Snr ICT Executive (Person BE) supported those findings by arguing the go-live decision reflected the MoE’s then low project management maturity and the resulting poor governance.

However, some elite interviewees, those with involvement in or close knowledge of the process, presented a different perspective. That is, the political influence on the go-live decision. A MoE Snr Executive (Person BF) who was aware of stage in the project, argued that Ministerial pressure to implement the solution was ‘central’ to the final go-live decision.

This pressure was argued to have led to a myopic focus on a date, or as a Snr Project Manager (Person AZ) stated, a view that:

‘... we [had] to do something, we cannot delay it again, let us just bite the bullet.’

A MoE Snr Executive (Person BD) argued this reflected a collective mindset where nobody was quite ‘brave’ enough to speak up, and as a result:

‘... the triumph of hope over reality, cross your fingers. I think that is the essence of it.’

Person BF was the most direct about ministerial influence and argued that people are simply ‘so afraid’ that they do not speak up. When asked to clarify this, in terms of the actors responsible for making these decisions in Novopay, the following conversation ensued:

Interviewer: There were decisions made that were found not to follow solid project management processes, such as the go-live decision. What makes this collective of senior people do this?

Person BF: ‘... public servants have pressure on them [from Ministers], and this is high pressure, people are fixed term contracts, they lose their jobs, they get yelled at, they get treated really, really badly, they get humiliated. It is awful. It is an awful, awful environment. Bullying and abuse and they are told to come up with a [decision]... People are fearful about their own careers.’

Person BF: ‘... that political dimension was appalling... Ministers, many of them are very capable, but they are not experts in large scale IT systems ... They are just not in the best position, and they are driving, they want to reduce the cost ... I think those political imperatives to reduce cost and to drive through the change are just the wrong ones ... and I think the down sides of that environment is not conducive to good decision making. You produce the answer that the politicians want to hear, rather than the actual answer ... They wanted to deliver good news.’

When the challenges of ‘speaking up’ at these times was discussed it was posited by several interviewees that, at go-live, the proposed decision should be independently reviewed by a capable and qualified party to remove all extraneous influences, something akin to the accounting principle of separation of duties/responsibilities. A MoE Snr Project Manager (Person BC) describes this as:

‘... you should not have the people who have got a gun to their head having to make that [go-live] decision.’

The separation of responsibilities was argued as removing issues about courageous decision making. Excluding arguments over its effectiveness there is a Gateway Review normally undertaken at this stage, however it was not used for Novopay. The idea proposed is a step beyond Gateways and implies total organisational and political independence.

In summary, interviewees perceived, and other documentation agreed, that the MoE did not have the required project management capability to enter into Novopay. However, seemingly contrary to the then guidelines, they were allowed to proceed with the approval of the central agencies and New Zealand Government. The interview data indicates the MoE had to deal with this capability gap independently as best they could. Interviewees also argued that political influence was a key factor in proceeding with go-live, contrary to best project management practices. This included Ministerial capability in project management, or an argued lack thereof. As a result, there was an idea posited to remove this critical decision making and make it truly independent of all influences.

8.3.2 Organisational priority: what importance was project management given within the MoE?

The elite interviewees perceived that MoE project management capability, at the time of Novopay, was not an organisational priority. The general perception was that the organisational focus was on educational initiatives. This was supported by a Datacom Executive (Person BA) who stated that the MoE Executive and Senior Management Team were:

'... really good hearted, well-meaning people who have good, solid principles. They are good people, but ... they are not actually really imbued in ... project management and stuff.'

That perspective arguably found support in the *Ministerial Inquiry* (Jack & Wevers 2013, pp. 82-83) which highlighted that cultural issues within the MoE led to poor practices in project management. There was also the perspective that at the time of Novopay this was not just a MoE issue but common across the New Zealand public sector. As a result, a MoE Snr Executive (Person BB) argued the MoE and Novopay were left to fend for themselves, as:

'I'm sorry, but the whole of government was not acting as a whole of government at the time, it was acting as independent departments, so that is more of a fantasy solution [seeking New Zealand Government support] than a real solution at the time.'

Person BB argued this resulted in, similar to the sponsor appointment, the appointment of senior MoE executive staff to senior project management roles without the capability. Person BB admitted they were appointed to a senior Novopay role, not on capability but on organisational seniority and availability, and stated they:

'... learnt as they progressed.'

In summary, interviewees perceived that project management was not part of the MoE organisational culture, and as a result the need for specific capability was misunderstood. This was argued to be the case jurisdiction-wide, hence it was claimed the MoE was left to act independently.

8.3.3 Methodology: what role did methodologies play in improving MoE capability?

At the time Novopay commenced PRINCE2 was in the midst of being implemented in the MoE (Jack & Wevers 2013, p. 58). The elite interviewees perceived that whilst PRINCE2 may have existed, the MoE lacked the structure and maturity to manage the process and to provide guidance on its use. A MoE Snr Project Manager (Person AZ), directly impacted by this initiative, stated:

'It was the first time the MoE had used PRINCE2 ... [and as there was no PMO] its application varied.'

Another perspective was that PRINCE2 was used in the project as reference to project management maturity, almost as a front. A Datacom Executive (Person BA) stated they had been told by MoE that PRINCE2 would help improve project management capability. They classified this as 'naïve' as it would not and did not. A MoE Snr Executive (Person BD) argued that the use of PRINCE2 made people 'feel better' but it was really just 'cosmetic'.

These PRINCE2 perspectives had support in the *Ministerial Inquiry* (Jack & Wevers 2013, p. 63), with a finding that whilst the Novopay governance structure complied with PRINCE2, it was not of quality. The *Guidelines* (SSC and the Treasury 2001, p. 4) indicated that it was up

to the MoE to ‘make their own decisions about which proven project management tools and techniques’ would be used. Therefore, the MoE whilst acknowledged as lacking in project management capability, was left to make these decisions independently.

In summary, PRINCE2 whilst used, was perceived not to have improved the MoE project management capability. It was perceived as being seen to be compliant, rather than being effective.

8.3.4 Large projects: how did the MoE address project management capability for Novopay at the initiation and planning stage?

8.3.4.1 The project’s project management team

A MoE Snr Executive (Person BB) with a senior project role, stated the MoE capability and capacity was sourced from internal full-time resources for particular roles, but:

‘... we contracted people predominately [as] there was not much inside the Ministry’.

Project managers were a claimed example of an externally sourced approach, however Person BB stated that the MoE did not look for or identify the need to find an experienced and capable payroll specialist to lead the program management of Novopay. This role seemingly was with the MoE Executive appointed to the Business Owner role, with the Senior Project Manager/s reporting to that person. A MoE Snr Executive (Person BD) stated that the Business Owner was also responsible for these recruitment decisions. Talent2 were responsible for their own project capability and capacity, which was again a mixture of internal and externally sourced resources.

Where external contractors were used, a MoE Snr Executive (Person BF) stated the numbers were limited during Novopay due to both budget and capacity caps. Therefore, they argued if you wanted to hire an ‘A-Team’, capacity requirements would not be met as you needed to reduce head counts to ‘fit within a budget’. The alternative was to engage more less capable but cheaper resources. Quantity over quality.

Perhaps as a result, a later independent review (Change Dynamics Ltd 2011) found the project to be lacking in both project management capability and capacity across the project, at all levels. The *Ministerial Inquiry* (Jack & Wevers 2013, p. 65) found that issues with the project management team structure were a key factor in many of the project issues. However, the

Guidelines (SSC and the Treasury 2001, pp. 57-58) indicated that there was a monitoring agency responsibility at the initiation and planning stage to review the project team structure and resourcing, prior to its commencement. There was no evidence highlighted that this occurred.

In summary, interviewees indicated an organisational unawareness of the specialised project management skills and team structure required, leading to a gap in the specialised capability needs. The sourcing of the project management team resources was also claimed to have been negatively impacted by budget constraints.

8.3.4.2 Vendor management

The MoE and Talent2 had a critical interdependency, and therefore without vendor management capability, the project was arguably doomed. However, a Talent2 Executive (Person BI) stated the MoE from the outset approached the project:

‘... combatively rather than collaboratively.’

Another Talent2 Executive (Person BG) stated that the MoE Project Manager had advised them at project outset that their role was to ‘kick the vendor’, and when this ‘aggressive approach’ had been raised with the MoE Project Owner they were ‘brushed off’. There was also a perspective amongst the Talent2 interviewees that Talent2 had been too compliant, to their later detriment. Person BG stated that:

‘On reflection Talent2 said yes too much ... [but they did this to not] rock the boat.’

The perspectives of the MoE interviewees mainly focussed on the souring of the relationship with Talent2 as the project progressed rather than at the outset, arguably a later reflection on the impact of the lack of vendor management capability. The one exception was from a Snr ICT Executive (Person BE), who argued that the MoE approach from the beginning was to focus on the commercial, and as a result this got in the way of:

‘... common sense and pragmatic decisions.’

These perspectives were supported in the *Ministerial Inquiry* (Jack & Wevers 2013, p. 67), which found that the MoE did not have the capability to manage vendors in a project as complex as Novopay. There was also evidence supporting the Talent2 perspective that the MoE took an aggressive approach, it was claimed that Talent2 had attempted to implement a

formal change management process but were told by MoE that this ‘would significantly affect the relationship’ (ibid, p. 66), so it was not pursued. The assessment of vendor management capability is not mentioned in the *Guidelines* (SSC and the Treasury 2001).

In summary, interviewee perspectives indicate a combative approach taken to vendor management by the MoE, with a focus on dollars rather than a win-win relationship. Talent2 interviewees argued that in turn Talent2 was too compliant to their later detriment.

8.3.5 Project management conclusions

The perceptions from the elite interviewees on project management capability is once again clear. The MoE was perceived not to have had the required capability to undertake Novopay and it was claimed they were independently left to address this gap as best they could. Project management was argued not to be an organisational priority and was misunderstood, with the MoE focussed on educational priorities. The problem was that despite institutional framework guidelines to the contrary, the MoE were approved by the New Zealand Government to undertake the project. It did not end well.

The MoE addressed resourcing capability and capacity for Novopay largely through external suppliers. However, it was stated that the MoE did not engage a highly skilled and experienced payroll system project management expert to sit across the project and to be responsible for the project management of Novopay, and to be a key support mechanism for the sponsor. This was stated to have been filled by an available yet inexperienced MoE senior executive. This was claimed to have led to later decisions being made that were contrary to project management best practices. The critical vendor management, particularly with Talent2, was also perceived to have been poorly managed by the MoE.

8.4 Forecasting

It is the preparation of the original *Business Case*⁴⁸ that is the focus of this section, as this was how the project was originally forecasted and approved.

8.4.1 Capability: was the maturity there and how was it assessed?

Without access to the *Business Case* it was not possible to identify, from documentation, who prepared the document, nor could I find any reference to this in the *Ministerial Inquiry* (Jack & Wevers 2013). However, the elite interviews did shed some light on this. A MoE Snr Project Manager (Person BC), who was involved in earlier parts of the *Business Case* development, stated that the process was actually being driven by the MoE Policy Unit, who they argued did not have the expertise required. However, a MoE Snr Executive (Person BB), involved in this process, stated there was an understanding within the MoE that they did not have the capability to prepare the *Business Case*, and therefore the MoE engaged a New Zealand project management consultancy firm⁴⁹, with one of their consultants cited as the lead with overall responsibility for preparing the document. This was seemingly due to personal initiative rather than an identified process within the *Guidelines* (SSC and the Treasury 2001, pp. 25-32).

In summary, the elite interviews confirmed that external capability was sourced, independently by the MoE, to prepare the forecast as an acknowledgement that the MoE did not have the required capability. However, even then, the original forecast was not even close to the final outcome.

⁴⁸ Ministry of Education, *Schools Payroll Revised Stage Two Business Case*, November 2007 (Jack & Wevers 2013, p. 32)

⁴⁹ The name of the consultancy firm has been kept confidential. The consultant who was cited as the lead in preparing the document was approached to be interviewed but did not answer any correspondence hence this claim by MoE staff could not be validated with either the firm or that person. Nor could there be any questioning of that consultant's experience or approach in forecasting for such an involved large government ICT project.

8.4.2 Forecasting framework: how appropriate was the institutional framework in preparing the forecast?

8.4.2.1 *The forecasting requirement*

Despite the *Ministerial Inquiry* (Jack & Wevers 2013, pp. 32-33) highlighting various weaknesses with the *Business Case*, it was prepared and approved following the processes identified in the *Guidelines* (SSC and the Treasury 2001, p. 30). These guidelines indicate that there is a requirement to include costs for the entire project even when this is ‘scheduled to cover several years in duration’, with the *Business Case* complying with the ‘Stage 2’ requirement as the document that is the ‘final consideration of the business case, fully developed costs and benefits.’ That is, the MoE was required to prepare a full up-front forecast for the entire project.

The elite interviewees were asked about this requirement and how it was possible to forecast Novopay with any accuracy as a result. A MoE Snr Project Manager (Person AZ) simply stated that ‘you cannot.’

A MoE Snr Executive (Person BD) stated that it was ‘not possible’ to forecast future Novopay impacts, which they posited was evidenced by the project later discovering ‘so many things’, resulting in ‘more and more’ work. As a consequence of the initial forecast and subsequent budget approval, Person BD claimed the MoE had to live with impossible budget limitations, or as they put it:

‘...you get locked in, so you have got to make it work, so it is hard.’

This impossibility was a common theme. A MoE Snr Project Manager (Person BC), who had knowledge of the Novopay forecasting process, stated that the problem was in reality at the *Business Case* forecasting stage the MoE had ‘no idea of the scale’ of what they were entering into and how to achieve the outcomes, and the plan and forecast ultimately reflected that. A finding by Eppel and Allen (2020, p. 250) supported this when they argued the MoE at the outset was ‘blind to the outcome it was trying to achieve’.

This forecasting requirement also impacted on Talent2. A Talent2 Snr Project Manager (Person BI) stated that there were concerns about the complexity and the lack of clarity on requirements, which made it difficult to forecast with accuracy. However, they stated these

concerns were overlooked as there was optimism within Talent2 that they could deliver to the plan, and hence their agreement, but then reality hit. They stated:

‘Optimism certainly comes into it, we really believed we could do a great job, but then reality hits as the project moves on and these things come out of the woodwork.’

On reflection Person BI argued Talent2 should have pushed for a ‘proof of concept’, not only to validate the solution, but to enable both the MoE and Talent2 to better plan and forecast for the remainder of the project; instead, they guessed, badly and blindly, up-front.

In summary, the Novopay *Business Case* followed the guidelines and presented a forecast for the entire project. However, perceptions were that it was an impossible task to do with any accuracy for either the MoE or Talent2 as neither really knew what they were trying to achieve or what was ultimately involved in that, and that this was only to be realised as the project progressed.

8.4.2.2 Contract management

During the one-week contract negotiation period the MoE engaged an external negotiator (Jack & Wevers 2013, p. 35). The contract itself was then prepared for the MoE by an external legal firm and was reviewed internally by the MoE’s legal team, but there was no government or central agency requirement for a view of this contract (ibid).

Like a dark cloud hovering, there was a critical imposed limitation on the contract negotiation. The *Business Case* with the full up-front project forecast, including the forecasted contract cost was approved in November 2007, yet the contract negotiations with Talent2 were not completed and signed until August 2008, some nine months later. The *Ministerial Inquiry* (Jack & Wevers 2013, p. 35) stated the contract was then negotiated within this ‘funding envelope’. This was confirmed by a Talent2 Snr Executive (Person BG) who stated that at the very beginning of negotiations, the MoE informed Talent2 they had a set amount of funding and therefore the contract had to stay within that amount. An imposed outcome to which Talent2 complied.

The contract negotiation style was also criticised. The MoE were argued by a MoE Snr Project Manager (Person BC) to have taken a hardball, adversarial approach, which they described as a ‘typical Ministry thing’ where there is a belief that they have won as they have ‘put one over the supplier.’

However, Person BC stated that sense of victory was short lived, and nobody won as a result. The ‘Ministry thing’ seemed to be confirmed by a comment from a MoE Snr Project Manager (Person AZ) who stated:

‘... they [Talent2] had signed the contract saying they were going to do these things for this much money, and I was damned if I was going to let them change it.’

The *Guidelines* (SSC and the Treasury 2001, pp. 51-52) highlighted the criticality of the contract and contractual relationship to the project, and stress therefore at contract negotiation there needs to be a ‘win-win’ for both parties. Based on the interviewee comments, this seems to have been ignored.

The *Ministerial Inquiry* (Jack & Wevers 2013, p. 36) also found that the contract negotiations were not suitable for the long-term nature of the project, that there was a misguided emphasis on a ‘fixed price’ which later exacerbated problems. In addition, there was also a stated surprise that Talent2 themselves would agree to the contract such as was agreed given the many unknowns of the project. This surprise was also expressed by a MoE Snr Project Manager (Person AZ) who stated they ‘struggled to understand’ why Talent2 would have signed a fixed-price contract for something so complex, and posited that if they had argued for a staged delivery contract it:

‘... would have been a more viable option for everybody.’

There were other supporting perspectives from both within the MoE and Talent2, that Talent2 entered into a contract that was commercially unsustainable. A MoE Snr Executive (Person BB), reflected that:

‘I do not think the people in Talent2 Board level who signed off on the project had the faintest clue what the people who sold the project to us had signed up for, and that became very clear down the track ... I think their eyes were bigger than their brain to be honest.’

That perspective was spot on according to a Talent2 Snr Project Manager (Person BI) who stated that the contract was negotiated by Talent2 sales staff, and that it was not at a viable price, and summed this impact up by stating:

‘... [the sales approach was] a fundamental mistake, and it set it up for failure at that point.’

Another Talent2 Snr Executive (Person BG) stated that at the commencement of negotiations, once the MoE identified the funding limit, Talent2, whilst they did not:

‘...[they] did consider walking away from the contract at this stage.’

They posited this was due to Talent2 being able to ‘have the prestige of the client’ and remaining optimistic that they could pull it off. There was also an admission that at this stage Talent2 were ‘a bit naive’ and ‘most definitely’ underestimated the culture of the MoE in their planning. Person BG stated that they had enjoyed working with Talent2 as there was a strong supportive culture in the organisation, but this had proved insufficient to deal with ‘the challenges of Novopay’ and the MoE. It is also interesting that at the contract negotiation stage Person BG stated that Talent2 were aware of the ‘adversarial relationship between Datacom and the MoE’ and were concerned that this approach would also be applied to their relationship with the MoE. That turned out to be valid portent as the project progressed. Person BG concluded their reflection on the contract negotiations by arguing ‘any vendor would have had the same issues’, and that:

‘In hindsight Talent2 should have walked away early when MoE would not accept responsibility and ownership of the project, we were never going to win in the MoE/vendor relationship. Talent2 have done this previously where they decided it was just too much risk and a misfit of cultures to enter into a partnership with a government organisation and they pulled out’.

This is exactly what Talent2 did in 2014, to their financial and reputational cost. It was reported (Cowan 2014) that Talent2 paid NZ\$22m to in effect buy themselves out of any further Novopay responsibility. The Talent2 CEO was quoted as saying this move:

‘... settles a flawed contractual arrangement between the parties.’

In summary, the elite interview perceptions were that the project was set up to fail at contract negotiation. The contract negotiation was not driven by what needed to be done when there was so much unknown, or the best type of contract to address this, but by an imposed financial limit made prior to contract negotiations. It proved to be a disaster for all.

8.4.2.3 Methods

Elite interviewees with knowledge of the planning process were asked what methods were employed to develop the Novopay forecast. A MoE Snr Project Manager (Person BC) stated

that the forecast was developed by undertaking a series of workshops with a mixture of participants. The elite interviewee with the most direct involvement, a MoE Snr Executive (Person BB), indicated that the *Business Case* forecast was a ‘best guess’ with what was known at the time. They then stated that a relevant forecast could not be really known until Talent2 provided information. Their argument for this was:

‘I think it would be unrealistic to have expected the Ministry at that point to have known without Talent2 [involvement] how long you are going to take.’

However, the obvious and rather worrying problem with that argument, was that contract negotiations happened eight months after the *Business Case* and its forecast had been approved. As evidenced in the contract management section, therefore the contract was made to fit a monetary limitation rather than a reflection of the work to be undertaken, an outcome that Talent2 accepted.

The *Guidelines* (SSC and the Treasury 2001, p. 31) did not mandate a particular method or methods to be used when preparing the forecast and left this up to the agency (ibid, p. 4). However, there are guidelines on what factors should be included, such as any direct or indirect project costs, contingency, and an explanation of how these were calculated (SSC and the Treasury 2001, p. 31). The *Ministerial Inquiry* (Jack & Wevers 2013, p. 64) ultimately found the methods and frameworks utilised by the MoE to be ‘weak’.

In summary, regardless of what methods were or were not used, the initial Novopay forecast proved to be inaccurate and irrelevant and completed prior to contract negotiation.

8.4.2.4 Outside view

The MoE elite interviewees had no recollection of any outside view being utilised. However, and interestingly, a Talent2 Snr Project Manager (Person BI) stated that neither did Talent2 when bidding for and planning the project. They argued that this was the result of optimism as Talent2 ‘had never had a failure before’ so were ‘naïve’ about the task ahead and did not make other external comparisons.

8.4.2.5 Lessons learned

The *Ministerial Inquiry* (Jack & Wevers 2013, p. 30) stated that the previous 1996 Datacom payroll project — the solution Novopay was replacing — was also problematic, and that the MoE had implemented strategies in their planning to address these lessons. This was

confirmed by two interviewees with knowledge of the planning process. A MoE Snr Project Manager (Person AZ) stated they wanted to ‘avoid the disaster’ of the 1996 payroll and as a result:

‘... had incorporated some of those lessons into the plan.’

A MoE Snr Executive (Person BB) confirmed this, by stating:

‘We were particularly alert to the Datacom experience in our planning.’

Person BB went on to cite a story where a Datacom Executive met with MoE senior staff and recounted the implementation issues, the resulting political fallout, and how this impacted on project staff, such as:

‘Being called to the Minister’s office [late at night] in your pyjamas to sign manual cheques to pay people.’

Despite these statements by MoE staff, the *Ministerial Inquiry* (Jack & Wevers 2013, p. 1), begins on page one, by finding:

‘It is clear to us that important lessons from the past, in particular those arising from the 1996 education payroll implementation difficulties and the INCIS experience in 2000, should have been learned, but were not.’

The issues with the old payroll implementation were repeated, in fact magnified, in Novopay. It was also claimed that the institutional framework under which Novopay was planned, was influenced by, and reflected lessons learned from the INCIS project (Jack & Wevers 2013, p. 19; SSC and the Treasury 2001, Preface). However, a selected comparison of three findings from the INCIS (Small 2000) inquiry, and the related Novopay findings is displayed in Table 8-1; not much was learnt.

Table 8-1: Comparison of INCIS and Novopay planning and forecasting

INCIS ⁵⁰ Lessons Learned (Small 2000)	Novopay Ministerial Inquiry 2015 (Jack & Wevers 2013)
Contract (p. 157): A fixed price contract for the whole of a large IT project has a high level of risk - a more flexible form should be used, requiring delivery in stages.	Contract (p. 36): The parties took an approach to the negotiations that was not suitable for the long term, strategic relationship that was being entered into. There was too much emphasis on the total fixed price.
Contract (p. 157): Off-ramp and lay-by provisions are important means of risk control. Where they are in a contract, they must not be forgotten and instead be kept under proper assessment.	Contract (p. 8): The contract was also developed without ‘discrete stage gate and off-ramps’, for example the development of requirements ‘prior to commitment to the full solution’.
Requirements (p. 29 & pp. 133-134): Business process reengineering was critical to obtain INCIS benefits. The process was poorly managed, and the budget did not reflect the cost of the changes.	Requirements (p. 37): The process of gathering user requirements was poorly managed, and there as not an appreciation of all the requirements.

In summary, whilst there was a claimed effort to include past lessons, many of the same issues were identified as being repeated.

8.4.2.6 Customisation

Within Novopay, there was extensive unplanned customisation of the software (Jack & Wevers 2013, p. 10). A Talent2 Executive (Person BG) laid the blame for this fairly and squarely with the MoE. They stated:

‘... there was a 100% unwillingness for the MoE to change their ways, the worst I have ever seen. This led to heavy customisation of a core package that drove many of the later issues.’

Person BG continued by arguing this was symptomatic of Novopay changing from a planned business change project to a technical focus, ‘do what is required to make it work

⁵⁰ Integrated National Crime Investigation System (INCIS): a New Zealand Police project

technically’, and as a result the human aspect was ‘lost in the mess’ as was the future impacts on the MoE. They argued the end result was:

‘... the product morphing from a package⁵¹ they bought into almost a replica of the previous solution and the MoE seemed to not acknowledge what impact these decisions had on the project’s time, costs, effort, and future impacts on support and upgrades etc.’

The MoE perspective was slightly different. A MoE Snr Project Manager (Person AZ) argued that part of the problem was it was an Australian product built around Australian legislation, and therefore some change was inevitable and necessary, in fact they stated ‘the Ministry did not have any choice’ other than to make the changes in those areas. However, they did also admit that the customisations made went beyond these, and changes were made to fit the solution with current processes rather than change the business. Another MoE Snr Project Manager (Person BC) argued this was an example of a lack of ‘maturity’ within the MoE, by failing to understand the impact on the project of those changes.

The *Guidelines* (SSC and the Treasury 2001) did not provide guidance on customisation, and the resulting forecasting and planning considerations within large ICT projects. It was not possible from the interviews or the *Ministerial Inquiry* (Jack & Wevers 2013) to identify exactly how much customisation was factored into the original plan and forecast. However, the interviews indicated this went beyond initial expectations, and the *Ministerial Inquiry* (ibid, p. 10) stated that the changes ‘compromised the original intent’ of the solution. Suffice to say, the extent and impact of the customisations could not have been included in the original forecast.

8.4.2.7 Problems with assuring forecasts

It was perceived that one of the issues the Novopay *Business Case* assurers faced was a reliance on the MoE for information on which to assure. The argument was that the MoE had the organisational knowledge and whilst the assurers could question, they could only assure on the facts provided. In the Novopay assurance process it was argued by a MoE Snr Project Manager (Person AZ) that this dependency did create issues. In assurance meetings with the

⁵¹ Refer to section 4.4.3.3.1 for details on the software package type and structure.

SSC, the MoE Business Owner was stated to be not always open with details, or as Person AZ stated, the Business Owner:

‘... was not telling them what is really happening ...’

Another MoE Snr Project Manager (Person BC) whilst agreeing on the lack of quality evidence provided to assurers, also argued part of the problem was that the SSC assurance staff did not have the experience to ask the right questions, and went on to state:

‘... I do not think I have ever spoken to anyone in SSC who would be really astute at knowing what you were trying to embrace [and to ask the relevant questions accordingly].’

Of note though is that the *Guidelines* (SSC and the Treasury 2001, pp. 26-32) stated monitoring agencies had a clear responsibility to assure all aspects of the business case, including that the forecast is of quality. As the *Business Case* and its forecast was approved it can only be assumed that it passed central assurance. In addition, even though Gateway Reviews were introduced in New Zealand by the SSC in 2008, in time for use with Novopay, they were never applied to the project throughout its lifecycle (Jack & Wevers 2013, p. 90).

In summary, just as it was perceived impossible to accurately forecast for large ICT projects in full up-front, there is also a perceived flow on impact with assuring these forecasts. How too can this be done with any accuracy? In addition, Novopay was excluded from the Gateway Review process.

8.4.3 Organisational factors: were organisational factors considered at planning?

8.4.3.1 Schools

A Snr Datacom Executive (Person BA) was emphatic about an argued initial planning mistake; the MoE failed to engage with or understand the impact on schools, the primary user group. They claimed that instead of taking the stance of a partnership with schools, they took the line of:

‘... telling the schools what the schools were going to do.’

They argued this was a fundamental planning failure, as within the New Zealand schools’ system, the MoE did not have this authority and therefore the entire solution and roll out

strategy was flawed from the outset. This perspective was supported by a MoE Snr Executive (Person BD) who stated that despite the lessons from the 1996 payroll the same mistakes were made as the MoE failed to engage with the schools' sector and enlisting their help with:

'... creating solutions and identifying problems.'

They went on to argue that this was a cultural issue within the MoE at the time. They stated:

'... it is also a little bit of a mindset, the Ministry, amongst some people in the Ministry, it was almost a "stakeholders are to be tolerated [attitude]" rather than a true partnership model.'

A Snr Teachers Union representative (Person BH) supported the above perspectives, by arguing that there was no effective communication or partnership with schools, and the project was more or less sold to the schools as providing them with a better system and more autonomy. They stated this argument was 'extremely convincing.' The *Education Review* (2013c) gives some indication of how Novopay was sold to schools and why they may have thought it 'extremely convincing'. The MoE promised a solution that reduced time spent on payroll management at schools with increased accuracy and providing a raft of additional 'easy' to use features. As a result, Person BH argued that there was 'blind confidence' in the MoE's ability to deliver, but the problem was that the MoE did not know all they needed to, and based planning on 'flaws' which were quickly exposed, leading to a 'nightmare' (ibid) at schools once the system went live.

A MoE Snr Project Manager (Person P) argued this lack of engagement with schools, and also with Datacom, meant the MoE was blind to the actual work that schools did for each payroll, the interpretation of the various agreements, and the interaction between the schools and Datacom. They made assumptions that were incorrect as a result. The Mayhew et al (2013) findings support this perspective, and concluded that the entire requirements gathering process, and therefore the design to meet those, was 'flawed'.

In summary, the elite interviewees perceived schools were not engaged during planning and were simply 'told' what would be happening. The issue with this was argued to be that planning was then based on flawed assumptions.

8.4.3.2 Datacom

The second major mistake that the MoE made in planning, according to a Datacom Executive (Person BA), was to think the worst of Datacom and to remove them as quickly as possible as a project dependency. They argued there were two mistakes with this, firstly the MoE and Talent2 would be heavily reliant on Datacom for knowledge of the current solution. Secondly, it was claimed that despite missing out on the contract and being in an increasingly difficult relationship with the MoE, Datacom had no intention of walking away. There was evidence of this commitment at and after go-live, where it was found that ‘Datacom collaborated fully with the Ministry in developing the contingency option and continued to do so when post-Go Live issues became evident’ (Jack & Wevers 2013, p. 67).

A MoE Snr Project Manager (Person BC) stated that the MoE had deliberately excluded Datacom from planning, and as a result had no idea of what the rules were, how the system worked, and the challenges. All critical factors to incorporate in planning and forecasting. This perspective was also a finding by Mayhew et al (2013), who argued that the MoE deliberately excluded Datacom despite their inherent experience in delivering and supporting the current service.

In summary, the perception was that the MoE deliberately excluded Datacom from the critical planning and forecasting process, resulting in flawed assumptions and the obvious end result, an inaccurate forecast.

8.4.3.3 The old solution

The ‘old’ Datacom solution was perceived to have been used as the catalyst for the Novopay project; ‘it needed to be done as the old system was becoming redundant’ and was additionally perceived to be a powerful argument. A Snr Teachers Union representative (Person BH) stated schools were told the Datacom solution was at the ‘end of life’ stage, hence the need for Novopay and the schools’ support of the project, else the payroll would be at risk. This meant that Novopay’s major argument was business continuity (Eppel & Allen 2020, p. 249).

As well as the ‘end of life’ argument, the *Business Case* also argued the Datacom solution did not meet all requirements, and that Novopay ‘would provide greater functionality’ (Jack & Wevers 2013, p. 32). However, a MoE Snr Executive (Person BF) claimed that arguments that the Datacom solution was flawed were inflated to support a change. They argued whilst

Novopay was being ‘sold to Ministers as a shiny new payroll system’ that would fix everything, the current issues with the Datacom solution whilst ‘untidy’ were not ‘catastrophic’. These problems were stated as not causing major problems for teachers or schools, that they were not creating ‘mayhem’, nor were they a ‘distraction’. In reality the Datacom solution was supportable through to at least 2013 (Jack & Wevers 2013, p. 51), hence it was argued the claimed urgent need to replace Novopay was false (Eppel 2019, p. 2). The interviewees also claimed this resulted in a missed opportunity to explore alternative options.

8.4.3.4 The political factor

The *Guidelines* (SSC and the Treasury 2001, p. 5) clearly acknowledged the potential impact of political factors and the need for the agency/project at initiation and planning to identify these, assess their potential impact, develop mitigation strategies, and to factor this into forecasts. As an example, Novopay required political support to simplify the collective agreements (Jack & Wevers 2013, p. 33), a key requirement if the software package was to be effective as planned. There is little discussion or evidence in available Novopay documentation of the inclusion of potential political factors into the project planning and forecasting. The elite interviewees also could offer no direct insight into this and without access to the *Business Case* it is not possible to identify.

However, the elite interviews highlighted a perspective that the *Business Case* was written in such a way as to influence political support. A MoE Snr Project Manager (Person BI) claimed the stated ‘urgency’ to replace the Datacom solution and the risks of not doing so was used as a tactic to gain political support for the *Business Case*; ‘there will be trouble if we do not proceed with the BPO option’, rather than identify the political risks of proceeding with the BPO option. This perspective has support in a Novopay study by Cranefield and Oliver (2014, p. 9) who argued that Novopay planning excluded risks to the Minister from proceeding with the BPO option.

8.4.3.5 Summary of organisational factors

The interviewee perspectives indicated that the MoE engaged poorly with, or even excluded from planning, two critical stakeholders: Schools and Datacom. These were perceived to be critical errors in planning. The other major theme was that the urgency of replacing the old Datacom solution was overstated and used as a tool to ensure the *Business Case* would be

approved, including highlighting this as a ministerial risk if it were not, rather than highlighting the risk of the BPO option. The perceived result of this approach was a missed opportunity to explore and validate other options.

8.4.4 Financial management: how did organisational financial management capability influence Novopay forecasting?

Linked to earlier findings, Novopay complied with the then requirements and forecast for the full project up-front, including the total estimated cost (SSC and the Treasury 2001, pp. 26-32). This then became the project budget. When asked about this practice, and its suitability as a funding model, a MoE Snr Executive (Person BB) who was involved in the preparation of the Business Case replied:

'Was it the best? It was the way the process worked with Treasury.'

Another MoE Snr Executive (Person BD) was more direct and argued that the process was a 'nonsense', that people knew the Novopay forecast would provide no 'surety' yet was done to satisfy the Minister. They further argued this will only change, with political change. They explained it thus:

'... people understand the nature of the beast ... and that means the politicians have to give up money without serious detail.'

It was further argued this was a cultural issue, and it just needs to be addressed, else Novopay experiences will continue. This perspective was supported by another MoE Snr Executive (Person BF), who argued there should be a principle of Ministers setting parameters, but then letting agencies to plan within confidence within those.

From the vendor perspective, a Talent2 Snr Project Manager (Person BI), blamed the funding process for many of the later project management issues as the focus was on cost rather than the work required, and called the whole process 'stupid.' The 'nonsense' or 'stupidity' was proven. Novopay's original budget was NZ\$182.5m. At the time of the *Ministerial Inquiry* (Jack & Wevers 2013, pp. 76-77) the budget was NZ\$206.4m. This does not include future remediation costs, the establishment of the Education Payroll Ltd, or the Talent2 financial impacts. Suffice to say, the original forecast was not accurate, and as a result additional funding was necessary.

It was not possible to explore the financial management capability of the project management team or the resulting impact on forecasting in any detail, largely because there was no common awareness in the elite interviews or the *Ministerial Inquiry* (Jack & Wevers 2013) on who was responsible or of processes used. The exception was a MoE Snr Project Manager (Person AZ) who stated that during and after the initiation period it was the MoE Business Owner who had the financial management responsibilities; the same person who earlier admitted they did not have large project management capability and were learning on the job. The *Guidelines* (SSC and the Treasury 2001, p. 36) indicate it is a key role of the Project Board to oversee the financial aspects. Interviewees pointed out that the then MoE CFO was on the Project Board. I did ask this person for an interview, mainly to discuss the Novopay forecasting process, funding options, and any potential differences in financial management practices for large projects, but they declined stating it would be ‘inappropriate’. I then asked Person AZ of the CFO’s involvement at this stage, and they responded:

‘... very hands off. Yeah. I do not think anyone wanted this to tarnish their reputation.’

Suffice to say that the *Ministerial Inquiry* (Jack & Wevers 2013, p. 6) found that they were ‘surprised that the financial management of this project seems not to have attracted greater attention’.

The funding of Novopay was also not part of any ICT asset management plan, or integrated portfolio of projects. It was argued for and funded on the basis of a perceived urgent need to replace an aging, not suitable for purpose payroll solution. The word ‘asset’ does not even appear in the *Ministerial Inquiry* (Jack & Wevers 2013). However, the *Guidelines* (SSC and the Treasury 2001, pp. 28-29) stated that software, such as a payroll system, in accordance with the FRS-3 standard was not an asset.

In summary, interviewee perceptions were that a requirement to seek full funding for the project upfront is a nonsense, people know this, but do it to comply with an institutional and political requirement. Funding was also not part of any planned asset replacement portfolio, rather an ‘urgent’ need to replace an aging payroll solution.

8.4.5 Large projects: could Novopay have been avoided as a large project, and what alternatives were there?

A MoE Snr Project Manager (Person BC) argued it was impossible to have avoided undertaking Novopay as a large project, and that the notion you could was:

‘... obviously, crap, actually.’

Other interviewees were more reflective, arguably with hindsight. A MoE Snr Executive (Person BD) mused that it was ‘legitimate’ to challenge the initial scope and question if it was just ‘far too big’, and perhaps a better approach would have been to break it down into smaller projects. From a stakeholder perspective, a Snr Teachers Union representative (Person BH) questioned the ‘drivers’ that mean projects like Novopay keep on happening, the imputation being it is certainly not the stakeholders, they are the ones that suffer from these failures. The *Education Review* (2014) argued that a full pilot/trial would have been worth ‘the expense and hassle’. They also stated that schools did request this but were told it ‘was not feasible’.

The institutional framework did actually support and recommend that larger projects be broken down into smaller projects each with its own business case (SSC and the Treasury 2001, p. 44). However, Novopay was not planned as such, yet was assured by central agencies, and approved by the Minister accordingly. Without access to the *Business Case* it is not possible to ascertain if other delivery options were considered. The *Ministerial Inquiry* (Jack & Wevers 2013) does not make mention of this, and the interviewees could not be specific about this either.

I did ask a MoE Snr Executive (Person BF), who experienced first-hand the fallout from Novopay, a hypothetical. I asked if Novopay was to be planned today, given the same complexities existed, would it be planned any differently given all of the organisational and political influences. They responded:

‘No. Unless things have changed in New Zealand. You would have to have a courageous CEO who could explain it ...’

They continued and argued that whilst it is the Minister’s mandate to set parameters, the ‘courageous CEO’ needs to explain that they do not know everything as yet, they will know more as the project progresses, they will keep the Minister informed, but the Minister in effect needs to let go and trust a new way of delivery.

8.4.6 Forecasting summary

Firstly, the Novopay forecast was stated to have been compiled with the help of external specialist capability and also complied with then guidelines to provide a full up-front forecast. For Novopay this was perceived as impossible to do with any accuracy or relevancy. The method was simply stated to be a best guess at the time and was claimed to be a ‘nonsense’ of a process.

Secondly, a major component of the forecast, the cost of the Talent2 contract, was stated to have not been negotiated on the actual work, which in itself was unknown, or most suitable contract structure for the project, but on a figure set many months previous. The MoE were perceived as playing hardball and believed by doing so ‘they had won’. Talent2 agreed they complied but claimed as a result put themselves in a commercially exposed position. There was a Talent2 perspective, with hindsight, that it was at this stage they should have ‘walked away’. It was perceived internal Talent2 optimism and the prestige of snaring a major new client kept them engaged. This was argued to be critical mistake in the project from both parties and all but ensured failure.

Thirdly, whilst claiming to integrate lessons from the previous payroll, similar mistakes were found to have been made, with more disastrous outcomes.

Fourthly, two critical stakeholders, Schools and Datacom were all but ignored, which was argued to make requirements gathering, and including these within the forecast, as all but impossible.

Fifthly, the project was sold on a need to urgently move from the ‘old’ system and not as part of any planned replacement program, yet that proved to be overstated, and was also used as leverage to gain political support. The argued result was that a range of alternative options, that would have lowered risk, were then lost.

Sixthly, assuring large complex ICT software project forecasts was perceived to be as impossible as it is to prepare them. In addition, and with the reasons being in dispute, Novopay was not subjected to any Gateway Review process even though they were available.

Lastly, whilst there is a reflective perception that Novopay could have been broken into distinct stages to lower the risk, this actually was the requirement in the then guidelines. Why

this did not happen is unclear. There was also the argument for cultural change in the forecasting and funding of these projects, and that requires the Minister to ‘let go’.

8.5 Findings and relationship to the theoretical concepts

8.5.1 Capability and capacity building

Firstly, the perceptions of the elite interviewees indicated that the MoE did not have the required capability or capacity, in any of the identified roles/disciplines, to undertake Novopay. The MoE at the time was perceived to be an educational policy shop and gave little to no organisational priority to address capabilities for large ICT software projects. There was also a belief that actors skilled in their organisational role could transfer those skills to a large ICT project, and it was claimed that they could not. Therefore, the perception was that the MoE and Novopay were set up to fail from the outset. In this regard the *Ministerial Inquiry* (Jack & Wevers 2013, p. 13) highlighted one important lesson learned, and that was:

‘Do not start projects until the required capabilities are in place or identified’.

Secondly, this institutional requirement actually existed at the commencement of Novopay. The *Guidelines* (SSC and the Treasury 2001 pp. 23-24) indicated a requirement by central monitoring agencies to assess an agency’s capability to undertake a large ICT project prior to commencement. The elite interviewees claimed this did not happen, and no evidence was found to the contrary. Aligned to this was a perception that the central agencies themselves did not have the capability to undertake their key monitoring roles.

Thirdly, MoE interviewees stated they did try to boost capability and capacity by engaging external resources for various tasks and roles throughout the project. However, the senior project management role was stated to have been filled internally by an actor without the experience or skills, perceived to be a major failing. In addition, these efforts were claimed to have been impacted by financial constraints.

Lastly, the capability of the Minister was also raised as an issue. Similar to MoE project management capability issues, whilst the Minister may be very capable in their day job, it was argued they also did not have the project management experience and capability required to make or challenge decisions, or importantly to understand the impact of their decisions on the project.

8.5.2 Financial management

It was a stated and documented requirement that Novopay prepare a full up-front forecast for the entire project. This was perceived to have been a ‘nonsense’ of a process and one that immediately put the project at risk. It was claimed to be, and proved to be, an impossibility to predict and to take into every factor, organisational, political, technical and the like over such an extended time frame. This requirement not only impacted on the MoE but on Talent2 as the complexities and cost and time implications began to be realised.

The replacement of the then current Datacom payroll solution with Novopay was not as the result of the solution being part of an asset management or portfolio management process. Instead, it was stated to have been claimed as being ‘urgent’ to replace an ‘end of life’ solution. This risk to the payroll was in turn perceived as being used as a factor to gain political support for the preferred Novopay option. However, it was claimed this was overstated by the MoE, and as a result other possible alternative approaches were not investigated or considered.

8.5.3 Contract management

The contract negotiation with Talent2 was perceived as a key factor in setting the project up to fail. The contract negotiation occurred many months after the Novopay forecast was approved, which included an estimate for the contract cost. Therefore, it was stated the contract was negotiated on not what needed to be done and a fair cost for this, but on a pre-set imposed budgetary limitation. However, instead of walking away, Talent2 agreed to this, perceived as being able to get a foot in a lucrative market, and remaining optimistic that they could deliver within these constraints.

8.5.4 Stakeholder management

There were arguably three critical stakeholders to manage in Novopay. Firstly, with the vendor, Talent2. This was perceived to have been managed poorly, with the MoE taking a no prisoners, combative, and dollar focussed approach. Talent2 were also perceived as being accepting of this to ensure their role on the project; this was argued to be to their later detriment. Secondly, the schools. This was also perceived to be poorly managed, with the MoE claimed to have told the schools what will happen rather than engaging them in the process. Schools on their part were stated to be trusting of the MoE, but that trust was then claimed to have been betrayed once the solution went live and the poor quality and impacts on

schools' staff were realised. Lastly, Datacom. Datacom were claimed to have extensive knowledge on the peculiarities of the schools' payroll, remained as the supporting vendor for the current solution, and as a possible contingency option. However, it was perceived that the MoE excluded Datacom from key areas such as forecasting and requirements gathering.

8.5.5 Methodologies

PRINCE2 was perceived as being used in Novopay to be compliant with a jurisdictional guideline rather than being of any substantial benefit to the project. In addition, any claimed improvement in project management capability as a result was argued to be false.

8.5.6 Accountability

The Novopay Sponsor was held accountable and resigned from the public sector. The general perception was that this was 'deserved'. There was also the perspective that punishment was not the only course of action and did nothing to either retain learned capability or to increase the likelihood of others undertaking the sponsor role willingly in the future.

There was however a challenge to the official view that the Minister/s was/were free of all accountability, with a perception this was downplayed. It was claimed that they did have a direct influence on decision making, and therefore accountability, but this was ignored in official records.

8.5.7 Organisational learning

Given that the *Guidelines* (SSC and the Treasury 2001) and Novopay planning claimed to have incorporated lessons from past projects, such as INCIS, to lessen the risk of these issues recurring, it was argued to have had little effect. To highlight this, the findings from *Dangerous Enthusiasms*⁵² (Gauld & Goldfinch 2006, pp. 132-136) are compared to Novopay (see Table 8-2).

⁵² This book researched past large New Zealand Government ICT projects, and analysis of INCIS and other projects were included its findings.

Table 8-2: Comparison of ‘Dangerous Enthusiasms’ lessons with Novopay

Dangerous Enthusiasms (Gauld & Goldfinch 2006, pp. 132-136)	Novopay (2008/12)
<i>Things to do if you want to increase the likelihood of failure:</i>	<i>The Novopay response:</i>
Make the project as big as possible.	It was huge.
Attempt organisational change and link this to the project, and then continually change specifications throughout.	Organisational change was a key part of the project, it was largely abandoned and resulted in extensive unplanned customisations.
Assume the contract will solve any problems, and instead of breaking the contract into manageable components award one for the whole project.	Talent2 had one contract, a bad one, and it became a major problem for both the MoE and Talent2.
<i>Be pessimistic, guiding principles:</i>	<i>The Novopay response:</i>
Be modest about what can be achieved.	There was no modesty in what Novopay planned to achieve.
Believe solutions will work only when they can be shown to work.	Proof of concepts were not part of the plan and planned pilots were abandoned. The proof of concept happened at go-live, with a big bang approach, and disaster followed.
Expect to encounter the problems of past project, they will happen.	They did.
Excluding front-line staff is a high-risk strategy and could undermine the solution even if it works.	The engagement with schools was poor and as a result the solution did not meet requirements. Schools finished up in active and public revolt.

Additionally, when the Novopay findings are compared to the findings from the earlier sponsor, project management, and forecasting chapters, from a historical institutionalism (HI) perspective the results are revealing (see Appendix E: Comparison of Novopay findings to Stage 1 findings). The Novopay findings relate to actions in 2008/12, whereas the later findings are from 2018/19. The comparison indicates that the institutional governance issues that plagued Novopay are still perceived to exist a decade later, indeed they are closely aligned. HI principles would expect that over this 14-year period something may have

changed, lessons would have been learnt and the institutional framework adapted accordingly, but no change was the common outcome.

However, there were two variances to note. The 2018/19 findings indicated that Sponsors are rarely held to account for project failings. That was not the case in Novopay. The Novopay Sponsor **was** held accountable. Secondly, in 2018/19 there was a strong perspective that large complex projects always have alternatives when planning/forecasting to break down that complexity and risk. Novopay did not do that.

8.5.8 Leadership

Firstly, the elite interviews indicated a lack of leadership from within the MoE for Novopay. A Deputy Secretary was appointed the sponsor but was perceived as failing to undertake the full responsibilities of the role. The MoE Chief Executive/Secretary was not even identified in the interviews as having a Novopay leadership role. The interview perceptions, supported by the *Ministerial Inquiry* (Jack & Wevers 2013, p. 81), were that the MoE leadership team tried to distance themselves from a project leadership role, with the negative results.

Secondly, there was also a perceived leadership failure by the central agencies to fulfil their monitoring role in the Novopay project as outlined in the institutional framework at the time, the *Guidelines* (SSC and the Treasury 2001). For example, the elite interviewees claimed that the sponsor was reliant on reading documents to understand the role, whereas the *Guidelines* (ibid, p. 38) state it was a central agency responsibility to ensure the sponsor had clarity on the role. The MoE were perceived as being left to deal with these issues independently. In addition, there was a decision made not to use Gateway Reviews on Novopay, even when all of its problems were known.

Lastly, ministers were also perceived as taking a ‘hands off’ approach as they did not want to get tainted. However, there were also claimed direct and negative influences from the ministers on project decision making.

8.5.9 Entrepreneurship

There was no perception of entrepreneurship identified in the elite interviews and none reported in the *Ministerial Inquiry* (Jack & Wevers 2013). The project was troubled from the outset, yet no example of trying to do something differently was identified. Albeit with hindsight, elite interviewees perceived that the scope and approach should have been

questioned, or at least challenged and alternatives investigated as Novopay as planned was ‘just too big’. It is also interesting to note that the institutional framework (SSC and the Treasury 2001, p. 44) at the time actually recommended the breaking down of large projects into smaller sub-projects.

There was an idea posited that the key go-live decision should be reviewed and approved by a truly independent body to remove it from all organisational and political influences.

8.5.10 Agency

The elite interviews and other documentation such as the *Ministerial Inquiry* (Jack & Wevers 2013) failed to identify positive examples of agency being employed effectively. From the interviews and the *Ministerial Inquiry* (ibid) it was perceived that the MoE Business Owner on Novopay wielded undue influence but did not have the capability in large ICT projects to use this power effectively. The MoE Business Owner was claimed to have this agency due to the sponsor delegating and avoiding their own responsibility. The Senior Project Manager/s were removed from the sponsor and claimed they had little agency. Central agencies should have played a greater role in monitoring the project as per the *Guidelines* (SSC and the Treasury 2001) but arguably failed to do so. The one example of agency cited referred to the minister, who was perceived to have directly and negatively influenced decision-making at the go-live stage, where a ‘get it in’ mentality taking precedence over best practice.

8.6 Conclusion

Whilst the *Ministerial Inquiry* (Jack & Wevers 2013, p. 1) argued that the Novopay issues were ‘avoidable’ the narrative from the elite interviewees provided another perspective, that is, the project was doomed from the outset, with the outcome not ‘avoidable’ but inevitable. As distinct from the Gauld and Goldfinch (2006) argument that that New Zealand agencies enter into these large projects with ‘dangerous enthusiasm’, in the case of Novopay that was not the common perception. The MoE interviewees indicated an acceptance of responsibility, an awareness of the challenge, but also a feeling of isolation and abandonment from others who feared getting too involved in a project that had a deathly aroma.

It was acknowledged at the time of project initiation that the MoE did not to have capability in the various disciplines required for such a complex project as Novopay, yet they were centrally approved and funded to do so. They did not decide this independently, they were

institutionally approved to do so. Given this lack of capability the MoE then became heavily reliant on the institutional governance to steer and support them through the project, and it failed to do so. They adhered to the governance, and it led them towards failure. Novopay was a very complex project, and at the outset there was a huge gap between the way the project was planned to be delivered and the capability of the MoE to do so. Novopay required a team of superhumans, and instead were babes in the woods, on project management learner plates. There was also organisational amnesia both within the MoE and jurisdictionally. The MoE had major problems with the implementation of the previous payroll, yet by the time Novopay commenced that knowledge and experience had gone, hence mistakes were repeated, indeed magnified.

The elite interviewee perceptions also highlighted two distinct variances from the *Ministerial Inquiry* (Jack & Wevers 2013) findings. Firstly, it was argued that the critical go-live decision-making process was directly influenced by political pressure. The inquiry absolved Ministers of any influence. Secondly, guidelines within the then institutional framework were highlighted as not being enforced by the appropriate central agencies. The inquiry arguably ignores this perspective and central agency responsibility. In conclusion, the collective perspectives from the elite interviews and other documentation indicate that the institutional governance for Novopay was ineffective. Novopay was an institutional failing.

Chapter 9: EPDP case study – doing things differently

‘... some people live in the past and we need to move on from that. There is history and there are things that went wrong, but having a fresh face sometimes is a lot better because they do not have the wounds of the past. Looking forward perhaps, rather than looking back.’ (Person BW, Snr Project Officer)

9.1 Introduction

Due to the many outstanding Novopay post implementation issues the New Zealand Cabinet in 2015 requested advice on how the Education Payroll Limited (EPL), the organisation now charged with the responsibility for providing the schools’ payroll service, would move the service to a:

‘... steady state including achieving cost efficiencies and long-term sustainability’ (EPL 2016, p. 20).

As a result, the EPL prepared a *Schools Payroll Detailed Business Case* (DBC) (EPL 2016) which was duly approved. A key objective of the proposed project was to simplify the payroll service delivery approach (EPL 2016, p. 33 & pp. 45-48). A key consideration in planning was to learn from the mistakes of Novopay and to ensure those lessons detailed in the *Ministerial Inquiry* (Jack & Wevers 2013) were applied (EPL 2016, p. 15, pp. 92-96 & p. 157). From the period of the DBC approval to October 2017, the EPL concentrated on mobilisation in preparation for commencement of tasks (EPL 2017, p. 5). The initiative was now called the *Education Payroll Development Program* (EPDP) and in October 2017 an *EPDP Programme Initiation Document* (PID) (EPL 2017, p. 5) was approved and the project was underway and originally forecast for completion in December 2019.

In the decade since Novopay, the institutional framework had been through changes, some of which arguably were as a result of the Novopay learnings. Therefore, how had these learnings and changes impacted on the governance of EPDP? Was the sponsor capable, given this was a major issue with Novopay? Had the project management maturity improved? How was the project forecasted and what impact has this had?

In this chapter elite interview data, from a number of stakeholders in the project (see Appendix C) will be analysed to interpret perceptions of the EPDP institutional governance in the three core roles/disciplines. These interpretations are compared to the following institutional framework documents in place for EPDP: *Better Business Cases Guide to Developing the Programme Business Case*⁵³ (The Treasury 2015), *Better Business Cases*⁵⁴ (BBC) (The Treasury 2019), the *Investment Review Report for Education Payroll Limited*⁵⁵ (The Treasury 2020), the *Schools Payroll Detailed Business Case* (EPL 2016), the *Programme Initiation Document for the Education Payroll Development Programme Implementation Phase (PID)* (EPL 2017), *Expanded Guide to the Leadership Success Profile*⁵⁶ (SSC 2016), and the *Government Business Capability Model Version 2.1*⁵⁷ (New Zealand Government 2018).

The findings are then related to the theoretical concepts, and lastly a short conclusion of the findings is made.

9.2 Sponsor

At the commencement of EPDP with the approval of the PID in October 2017, the EPL Chief Executive (CE) was Stephen Crombie, with the then EPL Chief Operating Officer (COO) Duncan Boenic appointed as the EPDP Sponsor. The DBC and the PID were both prepared and approved during their tenure. In February 2018 Arlene White was appointed as the new EPL CE. Shortly after White's commencement Boenic also left the EPL. At that stage White assumed the sponsor role and effectively has been responsible and accountable for the EPDP

⁵³ 'This guidance document is intended to assist investors, senior responsible owners, workshop facilitators and business case developers to prepare Programme Business Cases' (p. 2)

⁵⁴ 'The objective of Better Business Cases is to provide objective analysis and consistent information to decision-makers, to enable them to make smart investment decisions for public value.': The Treasury, viewed 4 November 2020, <https://www.treasury.govt.nz/information-and-services/state-sector-leadership/investment-management/better-business-cases-bbc>

⁵⁵ 'Review processes help to ensure that investment propositions are sound, offer value to New Zealand and are set up for success ... These reviews help us to assess the performance of investments against expectations and to encourage stated benefits to be realised and assets to be operated near optimal levels of performance.': The Treasury, viewed 4 November 2020, <https://www.treasury.govt.nz/information-and-services/state-sector-leadership/investment-management/review-investment-reviews>

⁵⁶ Describes the 'levels of capability which are required in different roles across the New Zealand public sector' (p. 3)

⁵⁷ 'This document describes an All-of-Government business capability model for defining and assessing the capabilities and maturity of government agencies or government entities' (p. 2)

outcomes almost from the beginning of development. However, White also inherited the legacy of the DBC and PID documents and approvals.

9.2.1 Capability: was White capable, and was she assessed prior to appointment?

White was asked directly about her capability to undertake the sponsor role, including past experience. She responded:

'I have done large projects for most of my career, working with medium to large scale projects, not just IT, including time as the Deputy Commissioner of Inland Revenue ... [and has been] sponsor and business owner and just about every other role in major business projects.'

There were no negative comments about White's capability as a sponsor from any interviewee, indeed, they were all complimentary with comments such as:

'[she was] good and effective ... and competent' (Person BS, Snr Audit/Assurance).

'I feel she is across what we are doing.' (Person BU, Snr Project Officer)

'There is a fair amount of letting go and empowering the team, so Arlene was pretty good at that anyway, so that came quite naturally to her.' (Jeffrey Brandt, EPDP Program Director)

'She was involved and eager, so yes, it worked.' (Person BT, Snr Audit/Assurance)

In addition, there has also been external acknowledgement with a Treasury (The Treasury 2020) review in July 2020 commending the project on its successes, acknowledging the leadership of the project, and recommending that White as the Sponsor 'share these good practices' (ibid, p. 15) with other New Zealand Government agencies.

There were also some perspectives on the difference in approach between White and the previous sponsor. The view was that White brought a different focus and skills set to the role. The previous sponsor was argued, due to their involvement in the Novopay project for many years, to have had 'a bit of a mind in the past' whereas White 'was more focussed on the future'. This was perceived to be an advantage for the EPDP, because:

'... some people live in the past and we need to move on from that. There is history and there are things that went wrong, but having a fresh face sometimes is a lot better because they do

not have the wounds of the past. Looking forward perhaps, rather than looking back.’ (Person BW, Snr Project Officer)

The PID recommended an Agile delivery method for EPDP (EPL 2017, p. 15). Earlier chapters highlighted Agile as an emerging sponsor capability requirement. Jeffrey Brandt (EPDP Program Director) was asked how Agile delivery impacted on the required EPDP sponsor capability. Brandt argued that, in some ways, Agile can be harder for sponsors over traditional delivery methods as there is a need to constantly revisit plans and to be ‘far more nimble’, resulting in more decision points and regular reprioritisation. However, perhaps as testament to her attitude and style, when White was asked about this, she stated that it was an easy adjustment as it enabled greater visibility and rapid adaptation. She posited:

‘... you always need to have a process to pivot, or to proceed, or punt, I mean if it is a dog you punt it, and I think that is the Agile mantra. Always be ready to pivot and continue to evaluate as you go, so for me it was really easy to fit within Agile. Really easy for me to lead Grant, absolutely [easier than a traditional Waterfall approach] without a doubt, constantly looking at what is being built and delivered ... and what the challenges are ... and putting decision making at the right level in the organisation.’

However, Brandt did also identify a benefit of Agile to sponsors and the project. Brandt argued that the Agile approach can make projects more interesting to sponsors and drive greater engagement and ownership as a result. They see things happening quicker, and this creates ‘curiosity’ due to the constant delivery cycles. White fully supported this perspective by stating that with Agile delivery:

‘I was able to get excited about the product, about the customer, about what I do in my day job as CE, and that kept my interest, and that is the difference I think in this project.’

Lastly, White also confirmed that as part of the institutional framework no assessment of her capability to undertake the sponsor was undertaken. Interview perspectives however indicate she was capable and undertook the role well. This arguably reinforces findings in earlier chapters that this was by chance and luck in having an experienced and capable sponsor, and not due to any initiative within the institutional framework.

9.2.2 Role: how aware was White of her responsibilities and accountability?

White was asked if she fully understood her role, responsibilities, and accountability as the sponsor. White stated:

‘Yes, absolutely ... I need to contribute to the outcomes ... it is my responsibility to help wherever I can and to put in my expertise wherever I can.’

White also stated that the *Better Business Cases* (The Treasury 2019) guidelines included the sponsor roles and responsibilities and that this ‘was a fine process’. Person BS (Snr Audit/Assurance) also indicated that a RACI⁵⁸ chart had been completed for the project, and that this made it clear to all that the sponsor:

‘... was pretty much responsible and accountable for the delivery of the whole program.’

The other elite interviewees were also clear on who the sponsor was, and that was White. There was no vagueness. There was also a common perspective amongst the elite interviewees that White understood her role and accepted the resulting responsibilities and accountability. Brandt argued that White understanding the role and then actively taking on the responsibilities was crucial to overcoming any ‘resistance’ the project encountered.

The elite interviews also highlighted the management style employed by White in her sponsor role, and again they were all positive. One of the key project relationships identified in earlier chapters was that between the sponsor and the program director. In Novopay this did not exist. When asked about how she structured and managed this relationship, White stated that Brandt as the EPDP Program Director was made part of the EPL Senior Leadership Team (SLT), so that:

‘... he would actually come into our day-to-day business decisions and understand what we were trying to achieve as a business, and then take that back into the program and vice versa. Then he kept the SLT informed of what was going on.’

⁵⁸ ‘RACI ... describes the participation by various roles in completing tasks or deliverables for a project or business process. RACI is an acronym derived from the four key responsibilities most typically used: responsible, accountable, consulted, and informed.’: *Wikipedia*, viewed 18 November 2020, https://en.wikipedia.org/wiki/Main_Page

Brandt in turn stated he had a ‘very good’ working relationship with White, and ‘continues to do so’, and that this had been built on a culture of openness and trust. He stated White expected transparency from him, particularly when any issues arose as ‘she was a no surprises kind of person’. Brandt also indicated that White was clear that their relationship was important to the success of the project, and also clear that whilst she was ultimately accountable, Brandt in his role was responsible for the successful delivery of the products.

All other elite interviewees stated they had direct access at any time to White, and that she was always accessible to team members. White herself was evidenced to take the initiative and talk with team members to improve her understanding of the project. Person BT (Snr Audit/Assurance) stated that:

‘For Arlene to get to her desk, she walks past mine, and so very often in the morning, I mean I was in fairly early, she would walk past and say, “Okay, anything I need to know?”. We then have an informal discussion right there and then. We have a good relationship that if I do have a concern, I can get up and go speak to her. I must not come to her with a rumour. I must come with fact.’

Person BU (Snr Project Officer) stated that White was ‘always present’ at the ‘Agile rituals’ and therefore always had a current and good overview of the project and its progress and issues. Person BV (Snr Project Officer) stated that whilst they were not a direct report to White, they maintained a ‘very close’ and ‘genuine’ relationship due to their key role in the project, hence White would often stop by for an update. Person BW (Snr Project Officer), also in charge of a key project team, provided a similar story. They stated that White would meet with them weekly to get an update, and that it was clear there was never an ‘issue’ in contact outside of these meetings. Finally, Brandt argued that whilst White encouraged and enabled a close relationship with himself and others, this was not a micro-management approach. Brandt stated White expected and encouraged a ‘good productive working relationships’ across the program and the SLT.

9.2.3 Model: how was White selected and appointed?

White undertook the sponsor role on top of her substantive CE responsibilities. When questioned about why she took on the role White stated that her agency as the result of her CE position was an important factor. Taking on the role ensured that program was given the appropriate organisational priority and focus and was seen to be that way within and without

the organisation. In addition, White believed that a critical program success factor was to be ‘customer focused’, and by taking on the role as CE this focus would be reinforced. The other factor White cited was the dark cloud of Novopay, and her personal accountability for the project outcomes. White stated:

‘I was very interested in making sure that this program was a success and as the CE, I was told that I was accountable. So yeah, being the SRO [Sponsor] was a role I took on after our COO left, but I was always the one who was going to be delivering the program to the public sector, and I think that is important. I know a lot of CEs do not step into that SRO [Senior Responsible Officer] role, but I think that is at their peril to be very honest.’

Brandt agreed that by White taking on the sponsor role, this demonstrated visible senior leadership support for the program. Brandt stated that White taking charge also had a ‘tremendous impact on stakeholders outside of the organisation’ as White became the public face of the program. Brandt finally argued that White as the EPL CE was responsible for the relationship with the Ministry of Education (MoE) and the delivery of the payroll service, therefore taking on the EPDP sponsor role was a demonstrable acceptance of this accountability.

There however were several interviewees, who whilst acknowledging the success of White in the role, argued it was not appropriate to have the CE as the sponsor, with Person BS (Snr Audit/Assurance) stating ‘in general I’m not a fan’ of this approach. The common reason for this was no separation between the program and the CE, or as Person BT (Snr Audit/Assurance) posited, ‘who is she criticising, herself?’

However, Brandt argued that there were three reasons why having the CE as sponsor worked for the EPDP. Firstly, the ‘EPL is a single line of business’ and not an organisation with many business streams. EPL’s business was to provide an efficient schools’ payroll service, with White accountable for this, hence her taking on the role worked. Secondly, the project would also implement major organisational change, and by White undertaking the role, she displayed and accepted ownership of the change. This was also supported by Person BT (Snr Audit/Assurance) who agreed that project decisions from White gave them power and impetus. Thirdly, and with his Program Director hat on, Brandt argued no matter how skilled a Program Director was they would never have the:

‘... full visibility of stakeholder sensitivities that a CE would have.’

There were also some additional arguments for why having the CE as the sponsor worked in EPL and the EPDP. Person BU (Snr Project Officer) argued that the smaller size of EPL and its 'flat structure' assisted. Person BV (Snr Project Officer) added that due to those factors, it enabled senior project staff to communicate directly with White, and gave confidence that details were reported openly and factually, or as they stated:

'Having a direct line to the SRO [Sponsor] and the CE at that stage, means that I know there are no filters that can be applied to my story. So, I can tell my story straight and I know things cannot get lost in translation.'

On that theme, Person BW (Snr Project Officer), argued that this direct line to the CE and therefore decision making was a major difference and advantage over the previous model of the COO as the sponsor, who in turn reported to the CE. They stated:

'... [the previous model] could get a little confusing between who was the ultimate decision maker ... was the COO just taking decisions and then going to the CE to ask for permission? ... I did wonder whether there was someone who was fundamentally in the role, but still had to go and answer questions to a higher up, which of course does not happen with Arlene as the SRO [Sponsor].'

White was asked about her ability to undertake both the sponsor and CE role simultaneously. She argued this was made possible due to the project structure, the capability of key project staff, and the engagement of Deloitte specialists, particularly the Program Director, Jeffery Brandt.

9.2.4 Training and support: what training and support was provided to White?

White confirmed that she had not been offered any training by central agencies as part of the institutional framework. However, she also stated that due to her past experience 'she did not seek it'.

For support, White singled out two major contributors. The engagement of Deloitte 'was extremely useful', and the *Gateway Reviews* 'were instrumental in helping' as they had a good mix of experts who provided effective feedback. There were also a series of regular

‘TQA⁵⁹ and IQA⁶⁰’s throughout’. Other than this, White stated that central agencies such as the State Services Commission (SSC) ‘did not get involved too much’ in sponsor support roles.

EPL and the EPDP also had internal assurance roles, which Person BT (Snr Audit/Assurance) stated was to ‘provide advice to the CE’. Person BT provided an example of where the team provided real benefit to White at an important time. It was claimed White was being challenged on project benefits as per the DBC, particularly the then claimed benefit that staff numbers would be reduced, which they had not. Person BT stated the team were pro-active and provided advice to White that whilst staff numbers had not reduced other substantial tangible and intangible benefits had been, such as reduced overtime, more time to address outstanding historical issues, plus a rapidly increasing schools’ satisfaction rate. They claimed White was delighted with the data, and in turn argued she used this to present to central agencies the demonstratable benefits being obtained. In another claimed example of internal assurance supporting White in her decision making, Person BS (Snr Audit/Assurance) stated they had explained their concerns about one particular release to White. White was claimed to have then deferred the release until these concerns were resolved.

Interestingly, particularly given the Novopay issues and the resulting political fallout, White stated there was ‘little Ministerial contact’ other than preparing ‘two monthly briefing notes to the Minister’. White (2021, pers. comm. 1 February) posited that the ‘Minister was most concerned with the end user impact given the level of anxiety that Novopay created amongst teachers.’

9.2.5 Sponsor conclusions

From the perspectives of the elite interviewees and external reports, Arlene White, was deemed to be a very capable and motivated sponsor. However, this was not as a result of a formal process within the institutional framework, such as training, but instead due to the fact that White came to the CE role with vast past operational experience in large projects. White was also quick to adapt to and appreciate the benefits of Agile delivery and argued this actually created ‘interest’ in the sponsor role.

⁵⁹ Total Quality Assurance

⁶⁰ Independent Quality Assurance

White was perceived to have understood the sponsor role well and accepted the responsibilities and accountabilities that came with it; White's past experience was instrumental in this awareness. White was perceived to have provided the platform that enabled a successful program. White formed open, trusted, and continuing relationships with the program team and made a direct acknowledgement of the program director's role by including them in the EPL SLT.

White personally decided to take on the sponsor role, full-time, on top of her substantive CE role. Whilst there was some argument that this was not an appropriate model, all agreed it worked. White argued it was important for her to be in the role, 'as given the lack of any appetite for a repeat of Novopay', and the fact that she would be held accountable, she wanted to be leading from the front. This was acknowledged as providing the priority and visibility of the program both internally and externally.

9.3 Project management

9.3.1 Capability: did the EPL have the maturity and was it assessed?

The PID (EPL 2017, p. 15) proposed the move to an Agile delivery method⁶¹, using the *Scaled Agile Frameworks* (SAFe⁶²) Agile methodology, which was duly approved. Agile and the use of SAFe was new to the EPL, hence the discussion with the elite interviewees was concerned with how this capability was obtained. From the elite interviews it was a common perception and understanding that the EPL did not initially have the internal capability or capacity to provide the project management roles/disciplines required for EPDP, particularly given the use of the new Agile delivery method. Therefore, White stated that the initial focus of the EPL was to gain both that capability and capacity.

As an example of this White stated that the EPL did not have the capability internally to fill the program director role, hence a skilled and appropriate resource was sourced externally. That person was Brandt, a Deloitte employee, with vast large ICT program experience. White

⁶¹ Refer to section 4.4.3.4.3 for details on why this approach was recommended.

⁶² 'The Scaled Agile Framework® (SAFe®) is a set of organization and workflow patterns for implementing agile practices at enterprise scale. The framework is a body of knowledge that includes structured guidance on roles and responsibilities, how to plan and manage the work, and values to uphold. SAFe promotes alignment, collaboration, and delivery across large numbers of agile teams. It was formed around three primary bodies of knowledge: agile software development, lean product development, and systems thinking.' *Atlassian Agile Coach*, viewed 24 November 2020, <https://www.atlassian.com/agile/agile-at-scale/what-is-safe>

also stated that as a result of the move to Agile, the EPL was reliant on externally sourcing skilled project management resources. The team was a mixture of Deloitte staff, other external firms, or individual contractors. These external resources were then complemented with internal staff. Brandt stated the focus was to:

‘... invest heavily at the outset on our service design, or change management, our Agile developers, API, all of those capabilities.’

There were also two important capability strategies implemented by EPL that were perceived by the elite interviewees to have paid dividends, views also supported by findings in the *Investment Review Report* (The Treasury 2020, p. 10). Firstly, there was a concerted effort to gain the capability early before undertaking major development work, so in effect to be able to ‘hit the ground running’. White stated that this was deliberate and:

‘... was key to any Agile project, or any Waterfall too [and was] the right thing to do.’

Secondly was an acknowledgement and awareness that whilst external sourcing of capability was necessary for the commencement of the project, this was not sustainable or suitable for the long-term support of the solution. Therefore, there was a deliberate strategy of skills transition to an internal support capability and capacity. The *Investment Review Report* (ibid, p. 10) found that the EPL had made a ‘concerted effort to retain key staff as permanent employees rather than contractors, improving continuity, retaining key IP, and reducing costs.’ In addition, the report stated this capability delivery ‘has been of high quality and implemented successfully’. This strategy was argued by White as key, particularly given the uniqueness and complexity of the schools’ solution. The argument was that being reliant on external contract staff would expose the EPL and the payroll solution to additional risk and greater expense.

It is also interesting to note, and relevant, that the EPL engaged a management accountant specifically to manage the EPDP financials, someone Brandt described as ‘extraordinarily good’, and who eventually gained ‘kudos from our external auditor Ernst and Young at the time’ resulting in the program being sponsored by New Zealand Treasury to undertake a series of talks on how the project finances were managed so effectively.

9.3.2 Organisational priority: what importance was project management given within the EPL?

For White the priority to obtain and retain the required mixture of project management resources across the various roles and disciplines was paramount. This was not just to steer the project through to completion but to ensure the skills remained internally to support and maintain the solution post program completion. To achieve this White stated that the costs were funded and managed within the EPL, without external influence. It was up to White as the CE to set the priority, and she made it a critical priority. An early example of this was the engagement of Deloitte to manage the delivery of the program, and to manage the skills transfer to internal staff, something which White stated was an ‘expensive option’, but also argued one that was validated via program successes.

Elite interviewees provided evidence of this executive priority. The common response was that whilst cost was always a consideration in recruitment, this did not limit their ability to engage the ‘best’ resource. That is, there was no pressure to find cheaper less capable resources due to an imposed cost limitation. The focus was on obtaining the capability required to best enable the program to deliver successfully. Person BU (Snr Project Officer) stated:

‘The [recruitment] decisions should be based on capability required rather than the money available ... I had approval, so I have been very lucky.’

Another team manager, Person BW (Snr Project Officer) confirmed this, and whilst stating they were always aware of ‘excess’ costs:

‘... the great thing about it is that if there was expertise that was required to do impact work, then we did get that expertise to enable us to move forward. So, it was not like money being a showstopper.’

White argued that her background in operational roles assisted in her understanding of and commitment to improving the EPL project management discipline across the organisation, as it was critical for the delivery of EPDP and the ongoing support of payroll service by the EPL. However, White does not believe this is common across either the Australian or New Zealand public sectors, as their priority remains a focus on government political or policy work. White argued:

‘... [these agencies] serve the Minister and policies, do they understand the operational stuff? No. For the most part government agencies in NZ, Australia, and Canada are policy departments not operational, so it does not resonate in the political sphere, until it does not work!’

9.3.3 Methodology: what role did methodologies play in improving Ministry of Education (MoE) capability?

As detailed earlier the SAFe Agile methodology was utilised, and set-up independently by the program. This section will analyse the elite interviewee perspectives of how this methodology assisted, or not, the EPDP outcomes.

There was overwhelming support for the use of Agile via the SAFe methodology, agreement that its benefits outweighed any perceived disadvantages, and claims that it assisted in providing the capability to both deliver and support the payroll solution. The agility of Agile was commonly perceived as an advantage over a more traditional Waterfall method. Tasks were argued to be delivered in priority order, results seen and evaluated quicker, mistakes identified earlier, and damage as a result of those mistakes limited and more easily corrected. Person BV (Snr Project Officer) perhaps best sums this up by stating:

‘... it is putting the most valuable things at the front of what we are doing. So, the ability to pivot is very difficult in a Waterfall project. You have spent six months developing something and then someone tells you it is wrong ... [with Agile] you spend two weeks developing something and we find out it is the wrong thing we can pivot very quickly.’

One of the goals of EPDP was incremental change, and Person BU (Snr Project Officer) argued Agile supported this goal, through the progressive and iterative design, development, and implementation of solutions. In addition to these change benefits, Person BU also detailed why they personally liked Agile methodology:

‘I really like Agile; it makes my life go really fast ... I like the cadence of it, and I like the planning, I like chunking work down. I think it is really manageable, there are no surprises. I like the iterative nature ...’

This advantage of iterative change was also expressed by Person BV (Snr Project Officer), who posited:

'So I think for us Agile is getting it out, using it beta ...getting it into the hands of the users ... and then the ability to roll features on and on, which the user then goes "gee, it just gets better and better and better", I think that has really been the big win for this program ... we had a whole lot of people saying "give us more, give us more, change this bit", so that is what I think Agile has done rather than saying, "We beavered away for five years and we have built something and here you go, what do you think?" And everyone goes "that's not what I thought it would be".'

The methodology was also perceived to create an effective team environment, where all team members are valued and part of the process. Person BW (Snr Project Officer), who was involved in testing, stated in the past that there was a view that 'we do not need testers yet, let them come later, and do not let them talk to the developers', something they argued led to a sense of being undervalued. With Agile, they stated:

'Now Agile brings everyone on a playing field, and the other thing I like about it is, we pass and fail together. The team passes and fails it, it is not "Oh, you failed as you missed it as a tester", or ... "the developer made a mistake here", it is now "As a team we succeed, and we fail."'

The testing area was not the only example of Agile methodology improving collaboration between the various teams or functions. Representatives from the audit/assurance area argued it provided the basis to change from a traditional 'review after the work was completed' to being able to provide real-time feedback. It also was argued to have enabled the audit/assurance role to become part of the team, as a valued collaborator, rather than viewed 'with suspicion' as outsiders. Person BS (Snr Audit/Assurance) stated:

'If we were to look at the traditional approach for auditing, we would come in months and months after it started and by then the learnings would be useless. I do not think the project would have been as successful if these approaches were not used.'

The combined argument was that the Agile methodology encouraged and enabled a cross-functional team and where that varied expertise across the team was valued and valuable.

It was also a common perception that Agile methodology, for those new to it, required some adaptation and a change in mindset over tasks and processes in a more traditional Waterfall method. Person BU (Snr Project Officer) stated they were used to preparing reams of documentation to pass the 'weight test', but with Agile documentation is lean, which took a

bit of ‘getting used to’, almost a need to ‘let go’. However, they stated they adapted and embraced the change, as:

‘It really helped for team efficiencies, “why do we have to do a 50-page spreadsheet around this change?” [when instead] ... what is the outcome we need?’

The final consistent perspective was that the Agile methodology and its related iterative component-based delivery aided and improved learning. Instead of a ‘lessons learned’ report completed after everything is finished and then filed away, it became a cycle of continuous learning, with those learnings applied progressively throughout the project. The following quote from Person BW sums up these perspectives:

‘... we have just learned as we have gone, what worked for us what did not ... we look at the program increment and say, “What did we do well? What did we not do so well? What can we do better next time?” All of those sorts of things ...so at a team level we are asking that every two weeks ...’

There have also been external acknowledgements of the success of the EPL in using Agile in the EPDP. Brandt stated that Red Hat, a major global software company, had nominated the program for a global innovation award⁶³ in recognition of ‘the way we have deployed open shift to develop our customer facing product’. In addition, Anna Brodie, the EPL CIO was recently named as a Top 50 CIO in New Zealand⁶⁴ across all sectors. This was in part recognition for her role in the program.

9.3.4 Large projects: how did the EPL address project management capability for EPDP at the initiation and planning stage?

9.3.4.1 The program’s project management team

The PID (EPL 2017, pp. 32-36) details a program management structure with roles and responsibilities. As indicated earlier, the team was a mixture of Deloitte, other firms, external contractors, and internal staff. This was to provide missing capability and capacity, and particularly to address Agile capability requirements.

⁶³ Red Hat, viewed 1 December 2020, <https://www.redhat.com/en/success-stories/innovation-awards>

⁶⁴ CIO, viewed 1 December 2020, <https://www2.cio.co.nz/cio50/>

External staff were selected based on their Agile experience, with internal staff then to be upskilled in Agile. There was a mixture of training approaches employed by the EPL to bring internal resources up to the required Agile standard. Some staff attended formal external or internal training courses, some picked it up through involvement in the process, but seemingly the major process was skills transfer by external specialised staff who trained the internal staff ‘on-the-job’. It was a common perspective that this coaching by skilled external resources was effective, and even preferred. Person BU (Snr Project Officer) stated:

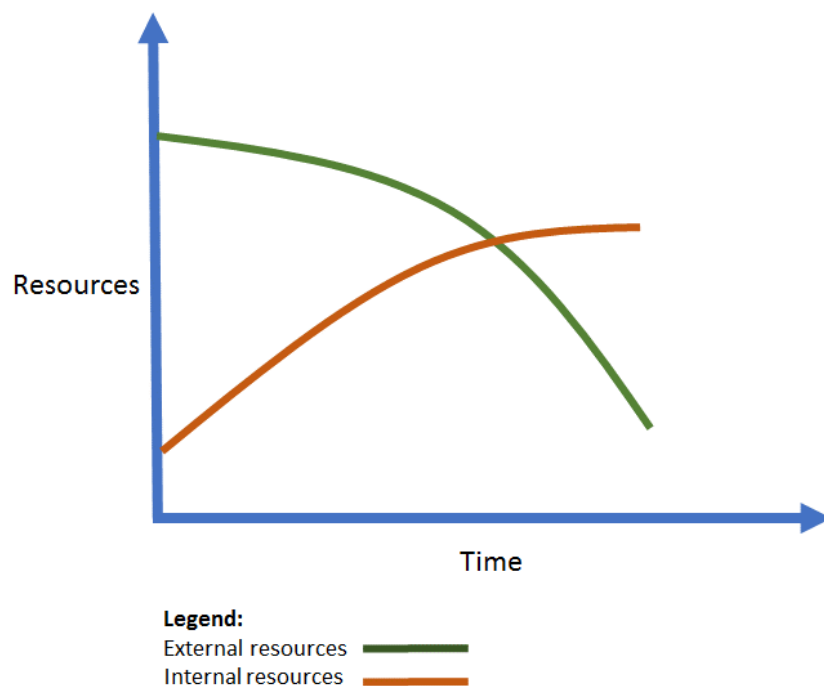
‘... they got people to come into the office and work with you and go through everything ... which I prefer. Yeah, I thought that was really successful.’

Brandt described this as similar to a ‘master and apprentice’ model where the EPL sourced external experts who were:

‘... going to do the work and then coach and develop the team throughout the process so that, that way there is a lasting capability ...’

This model is diagrammatically displayed in Figure 9-i.

Figure 9-i: The changing EPL/EPDP resource model



Person BV (Snr Project Officer), one of the Agile experts who joined the team, stated that initially the skills transfer ‘was difficult at times’ and that there was some early resistance. However, they posited this was just a reaction to change, and that with time this improved aided by the team work ethic of Agile. Person U (Snr Project Officer), a permanent internal resource, stated the transition did not always work to plan as it could leave the team rather ‘green’ when the external experts did depart, however they also stated as a result of the transition there were ‘sustainable processes and practices in place’. Person BV argued that the transition had been largely successful, and the intellectual property knowledge had been transferred and ‘is secure’. They further added:

‘So, we have really good systems in place as far as how we build and how we document and how we transfer knowledge between people. So, if you join the team, you can hit the ground running pretty quickly ...’

White stated that she had been challenged about this approach and received questions such as, ‘why do you need in-house capability?’ Her response has been it is because the core solution is so heavily customised support cannot be provided at a base cost and is a risk to the organisation and the payroll service. White argued:

‘... we cannot afford to keep on bringing people in to do this ... it takes at least a good six to eight months to even understand the solution.’

9.3.4.2 Stakeholder engagement

Stakeholder engagement was stated to be at the front and centre of all program activities. White argued that following the Novopay issues schools had a lack of trust with the EPL, so winning back that trust was important. White claimed that it took about two years after the establishment of the EPL to do so and that this was achieved via engaging with the various sector leaders, including unions, and then developing reference groups. White finally argued that this was now a ‘very tight [and] very good relationship’. Hence given the effort in building up this trust, effective schools’ stakeholder management in the EPDP was critical.

Brandt argued that the EPDP had a ‘compelling case for change’ given the Novopay legacy, and therefore people needed to be engaged thoroughly in this change and remain committed to it if the program was to be successful. Brandt argued this was his priority as Program Director, and stated:

'Most people think that the Program Director is there to manage scope, cost, and time. I actually fundamentally disagree. Those are things you need to control, but what we are to manage is energy and stakeholder engagement. That is everything.'

Brandt continued by stating there was a 'humility' in the program initially, one that recognised they did not know their customer well enough. To address this Brandt claimed that approximately 10 per cent of the program team were dedicated to customer engagement activities. Brandt stated:

'... customer insight drove everything ... we put everything into sensing our customers and were not willing to make any assumptions as to what they wanted. That to me is the most important thing.'

An example of this engagement approach was stated to be the 'beta group' approach. This group of 200 school users, roughly a 10 per cent representation, received early prototypes of the functionality, reviewed, and provided comments. The program team would then act on those and amend the solution accordingly. The end result would be the stakeholders could see their feedback in action. Person BU (Snr Project Officer) described the process as:

'[we would ask] does this work? Does the flow make sense? Is the language meaningful to you?'

Person BW (Snr Project Officer) added to this by stating:

'They get to see things first. They will tell us they will not get upset if something [initially] is not quite right ... [the schools are] helping us to be successful.'

Brandt argued that by following this approach, these schools' users in effect became 'advocates' for change. Brandt argued that as a result of the customer focussed approach there is now a trusting and collaborative relationship with the schools, he stated:

'... that mutual relationship between the schools and EPL [is like the birth of a whole new relationship]'

Person BU (Snr Project Officer) stated that the schools were engaged from 'the get go' and involved from 'end-to-end'. Strategies cited were road trips around the country to conduct face-to-face interviews, or telephone interviews, and the formation of user groups. The project was also stated to have been accepted into schools' forums 'such as the Schools' Managers

Associations’ where the program was able to give demonstrations, answer questions, and provide updates. Person BU claimed the intent was to ‘make it really easy for schools to provide feedback’. As a result, Person BU argued that the schools felt listened to and stated that the program had received ‘really good feedback’ about the approach employed.

This feedback also enabled the program to adapt plans as they went. Person BV (Snr Project Officer) cited an example of this. They stated there were initial plans to provide schools with a variety of ‘learning’ tools, such as videos, and on-line training courses. However, schools’ feedback indicated this as overkill. They just wanted a solution that was simple to use. Person BW stated:

‘They just wanted the product to work and they just wanted it to, it should be like a flight booking system. It should be like booking a car or doing internet banking. I do not need to watch a video 10 times and get a certificate. I just go in and make a payment. So, we changed that, we took money from those buckets and put it back into the product itself to help with the design.’

The program was also stated to have established a communications team whose claimed objective was to ensure:

‘... everything is understood by all levels of schools. The professional administrators, down to the 80-year-old granny who comes in one hour a day.’ (Person BT, Snr Audit/Assurance)

Open and honest communication was a key mantra in this approach with Person BU (Snr Project Officer) stating they ‘do not hide’ anything, and Person BV stating, ‘Yeah. No secrets.’ The communication was said to be framed around ‘things are not perfect’ but here is your opportunity to participate in making things better.

Person BU (Snr Project Officer) stated that the schools indicated that they wanted an account management model as they preferred a consistent and known person to talk to, one they ‘did not have to explain things over and over again’, and someone they can build a relationship with. To this end, the design of the schools’ service model was changed to provide a more customer focussed service, a more personalised service. White explains the model as:

‘.. each [EPL] advisor has a group of schools that they are responsible for and wherever possible we maintain that relationship with them in the schools. We have about 70 advisors

that actually look after the 2,600 schools and that is really important. The relationship is huge. They trust their advisor ... intimately.'

It was also stressed by several interviewees that internal stakeholder management was also a key strategy and another factor in project successes. The culture of open and honest communication was argued to also exist within the program team, and EPL management. In the Sponsor section of this chapter there was evidence of direct access by team members with the CE/Sponsor. Person BW (Snr Project Officer) stated they liaised regularly with another member of the EPL SLT:

'We are in constant communication, just around resources and how things are working and the like.'

Arguably an outcome of the success of the project in both its deliverables and also its engagement with schools is reflected in the change in overall schools' satisfaction rates recorded by the EPL. White stated that at the commencement of the program the overall 2016 satisfaction rate was at 51 per cent. In the *Annual Report 2020* (EPL 2020c, p. 13) the customer satisfaction rating was at 80 per cent approval, with 17 per cent neutral, and only three per cent dissatisfied. An impressive turn around. White argued to some extent EPL are now a victim of their own success, as they have raised the expectations of schools, so with each release:

'... we better have the very best it can be, but that is okay. We expected that to happen.'

9.3.4.3 Learnings from the project

All elite interviewees were proud of what the project had achieved and believed the team and organisation had done very well. Some perspectives include:

'We have got a great product out in schools that schools are using. We have a great adoption rates and we are already seeing great benefits coming through. So, yeah, I think it is going well.' (Person BU, Snr Project Officer)

'... we have delivered some really, really awesome stuff from the get-go.' (Person BW, Snr Project Officer)

'... we have managed to get a product built ...and used by schools and we have not been in the paper. We have very, very happy customers ... I would say that would be the most successful piece of this which is happy customers ...' (Person BV, Snr Project Officer)

The elite interviewees were then asked for perspectives on their greatest learnings from the program. The first key learning was the benefits that were obtained by undertaking the project following the Agile methodology. Brandt stated that his greatest learning was:

‘Well, I guess it is a kind of renewed appreciation of how hard these things really are, and ... I was not an “Agile-ist” beforehand, but believe me, I am one now, small iterations, each one delivering value, and allowing the compounding effect of continuous improvement to let it work its magic.’

Secondly, was the benefit to be obtained from having a customer focus and therefore a resulting need to engage with these stakeholders with open, honest, and trusted communication and have this as central in your project management approach. This applied to external stakeholders such as the schools, and also to internal stakeholders such as the project teams themselves. For White the criticality of this customer focus was her key learning, and as a result the project did not get ‘pushback’ from the schools and helped the program deliver ‘so much with so little’. Person BU (Snr Project Officer) agreed with this perspective, and also stated ‘communication was the key’ as it ensured that:

‘... the right people were talking and that the decisions being made were very visible.’

Thirdly was a perspective that despite the benefits the program achieved using Agile, a program of the complexity and size of EPDP is still a ‘hard’ process.

9.3.5 Project management conclusions

At initiation there was recognition that the EPL, particularly given the Agile delivery approach, did not have the required project management capability or capacity to undertake the EPDP. Therefore, there was an initial organisational priority to source the variety of skills required externally, including a very experienced and capable Program Director. The EPL then implemented successful strategies to upskill internal staff and to progressively transfer the capability and capacity internally. This was made a priority by the EPL CE.

The SAFe methodology was successfully applied to deliver via Agile. Elite interviewees praised this methodology and credit it for much of the program’s success. Amongst its advantages were that it enabled progressive delivery and a cycle of continual real-time learning. The program was also imbued from the outset with an emphasis on stakeholder

engagement, a customer focus dogma, which has resulted in substantial improvements in the relationships with schools.

Whilst no interviewee claims the program was perfect, all agreed that the Agile delivery and the project management approach employed to manage this have been successful, and this has been recognised externally. Despite this, there was also the realisation that large projects remain difficult beasts.

9.4 Forecasting

As highlighted earlier the DBC (EPL 2016), was the original document that argued the case for change and became the basis for the original approval of the EPDP. The forecast in the DBC set the EPDP benchmark of cost/budget, time, and scope. The document proposed a Waterfall delivery method. With the later preparation of the PID (EPL 2017) the approach was changed to Agile delivery. The preparation of both documents was managed by the then EPL SLT and were inherited by the new EPL CE, Arlene White, on her commencement in early 2018.

It is not possible to analyse these documents in terms of how their forecasts were prepared as the elite interviewees were not involved. In addition, in early 2018 after White commenced and her EPDP project management team took shape the plans in the PID were revisited and a replan was undertaken which superseded both the DBC and PID. It is how this forecasting process for all deliverables was undertaken that is the emphasis of this section, as it aligns to the SAFe methodology utilised and the program approach implemented.

It is important to note that as per the institutional framework the EPDP was approved based on the DBC full up-front program forecasts. The estimated cost became the budget, even though the program went through later replanning and a change in delivery approach. Therefore, the perceived impact of this initial approved forecast, given the later replanning and change in approach is also discussed in this section.

9.4.1 Capability: was the maturity there and how was it assessed?

The replan was conducted to cater for the revised Agile approach. Forecasting methods and approach are part of the SAFe methodology. The capability of the EPL and the EPDP in this was covered in the previous section.

9.4.2 Forecasting framework: how appropriate was the institutional framework in preparing the forecast?

9.4.2.1 The forecasting requirement

9.4.2.1.1 Inheriting the DBC forecast

White was asked about the impact of inheriting the DBC forecast and approvals. White stated this created ‘challenges’, such as the schedule was immediately unrealistic. For example, when White assumed the sponsor role the vendor had not yet been picked, and White argued that this time ‘could not be made up’ and also had flow on impact to other dependent tasks. Additionally, White argued that the DBC had made a ‘lot of assumptions’ around the use of the core payroll solution, such as the complexity of interfacing with it, but despite best efforts and contingencies to forecast for these they remained assumptions. The reality was it was much more complex. White described the core solution as a ‘complex mess’ due to the vast extent of customisation from Novopay. It was argued that only with time and gained knowledge would the resulting forecasting have any relevancy.

Therefore, due to the inheritance of the DBC forecasts, even with the claimed success of the EPDP, the EPDP is currently over-schedule and budget, and with some original goals not achieved. White was asked about this, and what impact this had on perceptions of the program’s outcomes. White argued that success in this case was not a measure against the original DBC forecast, but rather factors such as avoiding negative publicity, delivering the primary benefits, improved customer satisfaction, and was ‘all about reducing risk’ to the schools, the EPL, and the Government. Finally, White argued a distinct successful outcome for the program has been that:

‘... our costs to maintain and actually even replace will be lower in-house than it would be if we had out-sourced’.

Brandt was also asked for his perspectives on the issue of assessing EPDP outcomes based on the DBC forecast. Brandt responded:

‘Look, I think there are a few people that would say it is a failure for those reasons [however, we tried to change the definition of success] to school support for EPL.’

Brandt argued the success in providing this improved and efficient support to schools was the true measure, however he also stated that it took some time for groups such as the governance board to both understand and embrace this, as against traditional cost and time measures.

Brandt claimed that initially these groups thought ‘there was something fishy going on’, however the later acceptance of this measure was ‘magical’ and gave credit to White for her leadership on this issue. Taking responsibility head on.

Most other interviewees were not aware of this impact and relationship to the DBC, however Person BT (Snr Audit/Assurance) who has had past experience in other large New Zealand government projects had a definite perspective on the DBC and its usefulness and eventual relevancy to outcomes. Person BT stated:

‘I have come to the conclusion that the worst thing in any project is a Business Case. I think in hindsight it is possibly the biggest waste of time ... either look at it as a bunch of liars, or you have no idea what you are doing. I think my review of projects have confirmed it. How do you deliver a Business Case, when you actually realize that once you lift the rock you knew nothing, you had it all wrong ... the [DBC] was a crock of shit.’

Person BT’s argument was that factors such as estimated time frames in the DBC had placed unrealistic expectations on the EPDP. This was a similar view to Person BS (Snr Audit/Assurance) who stated it was simply unrealistic to expect the program to adhere to the DBC forecasts, and to fit within the EPDP’s Agile approach there should have been periodic re-estimations but claimed that is not how Treasury works.

The issue of the DBC forecast, and its impact on later EPDP planning was discussed with Brandt. The conversation meandered but led to a question on whether the DBC was even useful in the first place given the program’s long timeframe. Brandt responded:

‘Amen brother.’

However, Brandt did also state that despite this comment he believes there is a place for business cases, as they propose the vision, the reason for the project and the potential business benefits to be gained. The primary issue was with the estimates, such as time and cost. Brandt argued the business cases need to clearly acknowledge ‘this is as good as we have got it right now’ but it may in fact prove to be ‘wrong’ as the project progresses. This was the case with the EPDP DBC, the vision remained, but the forecasted time and cost lacked validity on what was required, the risks, the effort for this, and the change in delivery approach. In summary

Brandt stated that the forecasted cost in the DBC was ‘not nearly enough’ to cater for what needed to be done.

However, the DBC also was praised for detailing the core issues and the need to address Novopay shortcomings, particularly the central aim to replace the Novopay on-line solution. The criticism concerned the folly of trying to forecast in full up-front, and not the argument for change.

9.4.2.1.2 The replan

Brandt commenced on the program after the PID was completed and stated that after five months in the position he ‘threw it out because I fundamentally disagreed with it’ as it did not fit within the Agile philosophy, or in EPL’s desire to progressively deliver benefits and to ensure a customer focus was central. When asked to explain this further he stated:

‘Well, to me the fundamental problem with it was it broke the program into these things that they called workstreams ... so, it had all these little bits, like a standard Waterfall project ... the PID [despite proposing Agile delivery was in fact] a Waterfall PID ... I took it apart and I said, this is never going to work. We are losing sight of benefits of essentially a value and effort for each one of the “investments”. So, we overturned it in this thing that we call the replan.’

White stated that as an outcome of the replanning, the program was broken into 21 ‘investments’ or distinct components, planned to be delivered progressively to schools in a prioritised order.

When the replan was completed it was presented by White and her team to the EPDP Governance Board where it was explained and approved. However, even after the replan the DBC forecasts, such as the budget, remained the program’s centrally approved boundaries, yet in effect they were essentially two different programs.

9.4.2.2 Methods

Brandt, the person with replanning responsibility, was asked how this was undertaken. Brandt stated the process was to analyse the DBC and to look at the various plans and assumptions made within that document. He then listed ‘all of the things that have changed since’ and that formed the basis for the ‘rethink and restructure’ of the program. Brandt continued by stating

the DBC highlighted what was ‘valuable’ and as part of the replanning process that value was ‘double checked’. Brandt identified this as an extremely important process to undertake, as:

‘...we could assess every initiative that we wanted to undertake against that set and move through it, and it also gave us the flexibility at that point in time to say, “Well, we are not going to chase the scope that was in the business case because we have a new idea that has got a better NPV than anything else that we have got.”’

This led to the development of the 21 investments, for which initial individual forecasts were then made. The initial forecast was described by Person BV and BW (Snr Project Officers) as ‘t-shirt sizing⁶⁵’ based on known facts and assumptions at that stage, and potentially as a result of a workshop to discuss the product. However, there was also a clear perception that this was a ‘starting point’ to be refined with the delivery of each component and with the benefit of the learnings of that process. Person BV (Snr Project Officer) described it as a process of starting with the smaller things and building up to the more complex, with the acquired knowledge:

‘We will start here. We think these things are okay, and as we move on, we get more certainty to how much these bigger things will cost.’

As a result of this cyclical learning Person BS (Snr Audit/Assurance) stated that with each forecasting iteration:

‘... competence improved in each progressive phase from learning of the previous phases.’

This process, and the resulting relevancy of the forecasts, was argued to be possible due to the ‘stable team’ culture of Agile, where a team’s resources are ‘stable’ and therefore forecastable, which can then be applied to the estimated effort. This concept of ‘stable teams’ and its relevance to forecasting was explained further by Brandt, who stated:

‘For example, each product owner has a team or a set of teams, and that capacity is by and large fixed. So, the amount that a team costs per quarter is almost identical quarter after

⁶⁵ ‘T-Shirt sizing is a technique used for relative estimation and high-level sizing of items. You use this technique of relative estimation as opposed to absolute estimation when you just need a rough estimate or comparison of items. Speed is valued over accuracy which stops people from overthinking and over analysing, as you just want people to use their instincts and gut feeling. Information may not be available at this point anyway for detailed estimates. It is therefore used early on in agile projects or when there are a lot of items to estimate in a relatively short time.’; Red Agile, viewed 16 March 2021, <https://www.redagile.com/post/tshirt-sizing>

quarter. So then if the money is constant and the burn is constant and the delivery teams and the resourcing is constant, all we need to do is we need to say, what is going to deliver the highest possible value this quarter and allocate to teams ... it is a very simple concept...'

Another team lead, Person BV (Snr Project Officer) supported this 'capacity' mode within Agile. They stated that 'rather than here is our budget' it was more about 'understanding what we can deliver' with the team's capability and capacity and that from this they can 'get an idea of exactly' how much the team can deliver in what timeframe. The concept was supported and agreed to by other elite interviewees such as Person U (Snr Project Officer) who as a team lead stated:

'I like the fact that we can size or work accurately, so I know exactly what we are committing to ... it is very easy and visible to monitor.'

Brandt stated that with the replan, the EPDP was thought of 'in terms of program increments' over a 12-week period. Therefore, Brandt stated that he did not believe the program could ever forecast beyond a three-month period, at which point recent learnings are considered and any changes in decisions or approach made. Brandt stated this included the ability to factor the key customer feedback into the next sequence of planning, which he described as 'critical information'. Did the schools like it? What was the impact on schools? Brandt argued that with this information, at each iterative planning stage that he:

'... could feel confident to have a conversation with Arlene [White] and our boards ... so that is quite a different model [to the traditional waterfall planning approach].'

The iterative process of forecasting in Agile, was also argued by Brandt to better deal with the complexities and unknowns of the various organisational and environmental issues, and to adapt EPDP plans accordingly as they arose. An example of this for Person BW (Snr Project Officer) was the schools' change culture. Ideas such as including 'Smartform PDFs' to streamline processing were stated to have met with resistance, hence a timely rethink of the approach was possible. Another organisational realisation cited by Person BW was that had to cater for all school sizes and payroll processing resources. Bigger schools had dedicated full-time payroll staff, others had 'a person who comes in one hour every fortnight'. The argument was all these factors were identified and learnt progressively with each deliverable, and then factored into future planning.

9.4.2.3 *Contract management*

Elite interviewees indicated whether for an individual contractor or a vendor/company, a ‘time and materials’ contract was the norm. The stated typical arrangement in EPDP was, after a statement of work for a deliverable had been determined it would be known what resources would be required, such as for testing. The relevant vendor would then be asked to provide those resources and there would be a fee for service arrangement with that organisation. Person BW (Snr Project Officer) stated this could cause issues with the retention of a skilled resource as the project moves from one deliverable to the next, but with planning and with the use of a non-chargeable vendor delivery lead these issues were mitigated. Person BW argued that an alternative ‘we will pay you this amount for this work’ approach based on a documented outcome would have led to a need for extensive negotiation and documentation, and perhaps inevitably disagreements over the outcome. They argued the time and material approach with the flexibility to move resources in and out as required was more suitable to Agile development, and moved a focus to delivering a quality outcome, rather than a contractually limited outcome.

9.4.2.4 *Novopay learnings*

It is important to note that no elite interviewee was critical of Novopay, instead there was a recognition that the MoE and the project had a difficult task in a different environment. The following statement by Brandt sums up these perspectives:

‘...and so, the [Novopay] predecessors on this, they have got all my respect. They have done something incredibly difficult in an incredibly difficult set of circumstances. Our world is different’.

White acknowledged the differing scopes of Novopay and the EPDP. White stated Novopay had to implement the core payroll solution, whereas EPDP’s objective was to change the on-line interface to the core solution, claimed to be a:

‘... different level of risk than what Novopay had. They had the whole thing, core plus user interface. We just had the user interface but connecting to the core is still no easy task, believe me.’

However, that being said, all elite interviewees were well familiar with the Novopay failings and the various lessons learned and arguably loomed like a dark cloud over the project. White stated that whilst there was not a central agency mandate to ensure the Novopay lessons were

being addressed, she made an independent decision that they must be factored into the EPDP planning and approach, as:

‘[you would be] foolish not to ... [it was critical not to] make the same mistakes again, there is no excuse for not listening to the lessons learned from the Ministerial Inquiry.’

Brandt stated that the *Ministerial Inquiry* (Jack & Wevers 2013) was ‘like the founding document’ for the program planning as it helped define and understand the EPDP approach. When quizzed on whether central agencies had checked if the Novopay lessons had been incorporated in planning, Brandt stated that he initially did have visits from central agencies asking how the Novopay lessons were being addressed, but after the initial interest they ‘kind of went away’. Internally to EPL however, Person BS (Snr Audit/Assurance) stated that their team was ‘always aware’ of the Novopay risks, and this ‘helped us to be a lot more vigilant’.

Brandt also argued that the spectre of Novopay was such, that it was actually beneficial in leveraging and gaining support for the argument that ‘things needed to be done differently’, hence the Novopay lessons in effect were a ‘very powerful’ tool to enable a change in approach. White, and others, also indicated that at the outset of the program Murray Jack, a co-author of the Novopay *Ministerial Inquiry* (Jack & Wevers 2013) was Chair of the EPL Board and provided regular input, as well as discussing key Novopay issues with the organisation, and directly with various program staff (Person BT, Snr Audit/Assurance).

The *Ministerial Inquiry* (Jack & Wevers 2013, p. 30, p. 38 & p. 49) was critical of the Novopay decision to take a ‘big-bang’ approach with a solitary release to all schools, which proved disastrous. Person BU (Snr Project Officer) argued that the Agile ability for incremental releases was effective in addressing this issue. Person BU stated:

‘[the] Agile framework is very beneficial for that [the staged delivery approach] because schools told us over and over again “Post-Novopay, we do not want big bang change. We do not want to sort of arrive at our desks and everything has changed overnight. We like incremental.”’

This careful staged release strategy, was also raised by Person BV (Snr Project Officer), who stated that there was ‘reputational risk’ at stake:

‘I think the PTSD hangover from that project [Novopay] inside the organisation is something that we even deal with today. So, we are still incredibly cautious with our releases.’

White further explained how the approach to deal with this ‘do not go big-bang’ lesson evolved. White explained that the initial plan was to ‘push’ a deliverable to about 200 schools, and then progressively build up. However, as feedback from the schools started to come into the program, it was determined that a ‘pull’ model would ‘be better for us and for the schools’. In effect this meant that schools could choose when to use the deliverable, to ‘pull’ it down for use when they were ready to do so. The advantage for this was that rather than being forced onto the schools, the schools opted in when ready. White stated:

‘... once they have seen it, they pull it, then they tell their friends and other schools.’

However, as White also posited, whilst this empowered the schools to choose when to use the deliverable, it was also a ‘scary’ approach for the program; for what if no-one decided to pull anything? White stated:

‘... it was scary, not because I had no control over it, but it is that point of the customer wanting the product ...’

To further differentiate themselves from the Novopay approach, whilst this ‘pull’ option is in place White stated that the old system would continue to run parallel:

‘... until such time that 100% of the schools are comfortable with the new product.’

I asked Brandt a hypothetical question. I was curious to gain his perspective if the Novopay learnings would be similarly addressed by other New Zealand Government projects, or if the EPDP approach was due to the leadership of Arlene White. Brandt posited that without White being in the sponsor role, ‘things would probably have been different’. He went on to state that:

‘We had all the difficult stakeholders, we had all the big challenges, we had big change, and there is no noise, only goodness. That is very unusual. We are very fortunate’.

For confidentiality reasons, whilst no other current or recent New Zealand Government projects were named, Brandt did state there is evidence that post the Novopay *Ministerial Inquiry* (Jack & Wevers 2013) similar mistakes have been made, and that they have ‘failed on all of the same reasons.’ Person BT (Snr Audit/Assurance), whilst also not naming specific

projects, supported this perspective by stating they had witnessed evidence of projects post Novopay ‘forgetting ‘about these written lessons and as a result ‘the same issues rise again’⁶⁶.

In conclusion, Brandt stated that as a result of EPDP being so aware of the Novopay failings, and then the resulting change in approach to address core Novopay issues such as no ‘big-bang’, the program was ‘fundamentally different’ in structure and approach to Novopay and therefore ‘had every reason to succeed’.

9.4.2.5 Customisation

According to White as a result of Novopay 60 per cent of the core solution had been customised. Brandt argued that as a result the unique and changing requirements of a New Zealand education payroll became part of the core solution, morphing it into something it was never meant to be. This was also argued to add additional support and cost risk to the payroll service. For these reasons Brandt stated that the EPDP, with the use of Agile, removed some of those organisationally unique requirements out of the core payroll solution. Brandt described it thus:

‘... there are a whole bunch of requirements for the education sector that are absolutely unique, and what we are doing now is we are building those requirements outside of the core payroll system. Essentially, we are taking capability that was in the core payroll and we are moving it outside the core payroll. So, you can imagine each one of those components, we are building best in class for each one in an Agile manner. So, there is the attestations engine, the thing that delivers the incremental pay for teachers. There is something that we call service accumulator, so that is the thing that tallies up how much service a teacher has based on the rules. That is its own engine. In NZ we have unique and special tax laws. Those laws we have built in a special engine. So, we are building all of those outside [of the core payroll] ... and we can do those things incrementally.’

To greatly simplify this intent, the core payroll solution obtains data via an interface to pay this person this rate for this much work. The core solution processes this and keeps all the appropriate payroll records. External to this, bespoke solutions manage the unique organisational environmental complexities. Each of these can be treated as components and

⁶⁶ The New Zealand Customs Service, *Joint Border Management System (JBMS)* from 2013-2017 is an argued example, with an externally sourced independent review finding Novopay issues such as governance, assurance, contract management, open and trusted communication and engagement all listed problems in the JBMS (Deloitte 2017)

delivered progressively via an Agile method. As these unique rules change over time, they can be managed within the specific component, external to the core payroll. White stated this was not exactly planned like this at the outset, but the program adapted its approach as it was essential in being able to continue to use the Novopay core solution, and to ‘utilise the asset’, rather than the expense of total replacement.

In further discussion about the Novopay approach and planning, which was to customise the core solution, it was claimed that the Talent2 solution was sound in all its core functions, the problems and complexities arose when the multitude of customisations began. It was no longer a COTS solution. With hindsight, but also evidence of learning and adapting, the argument was that Novopay could have and should have been planned as a mixture of Waterfall, for delivery of the core solution, and Agile for the delivery of the respective organisational requirements, or as Brandt argued:

‘.. a mixture of COTS and in-house development’.

9.4.2.6 Problems with assuring forecasts

White argued that there was difficulty in the governance bodies understanding Agile. White stated:

‘... people are not good at governing in Agile, they want project plans and critical paths, and what happens when target dates are missed, and that is not what you do in Agile, so it is really hard to get people to understand.’

This was supported by Brandt who argued part of the challenge of adopting Agile is the required change in governance, and to move away from:

‘... this whole adherence to scope, time, and cost.’

However, White added that whilst ‘we still get nagged for all the checkpoints of a Waterfall approach’, the governance group has become more ‘keenly aware’ of the approach and how it is to be delivered, and in general ‘have been great’. This was argued to be assisted by the inclusion of externals on the boards that ‘actually understand what we are trying to do’. Person BT (Snr Audit/Assurance) perceived that one of the major challenges White faced with governance was to explain how project finances worked in Agile which has a focus on deliverables, as distinct from a traditional Waterfall approach which focusses on fiscal year

expenditure. Person BS (Snr Audit/Assurance) agreed that there was a learning curve for the governance groups, but also claimed they progressively adapted.

White was asked about the role of central agencies, fulfilling their institutional assurance responsibilities. Her perspectives were mixed. White described the engagement of Treasury as excellent, ‘I give kudos to them’. The office of the Government Chief Digital Officer (GCDO) were also stated to have been ‘very good’ (White 2021, pers. comm., 1 February). She believes this was due to the successes of EPDP and that they were doing things differently, something she argued Treasury ‘would like to see more of’. White argued Treasury came to trust the program, and as a result also started sponsoring Agile workshops across the New Zealand jurisdiction. When asked if she believed this would lead to a change in the institutional framework, White posited that whilst Treasury were supportive, this adaptation remains a work in progress. However, Treasury and the GCDO aside, White stated that the EPDP approach did not neatly slot into the standard New Zealand government approach, and therefore at times dealing with other central agencies had been less effective.

Other elite interviewees when asked about central agency involvement in their specific areas either indicated none, or only scattered involvement at initiation. Brandt stated that the program worked with the office of the *Government Chief Digital Officer* (GCDO), who Brandt claimed had responsibility ‘for the assurance of technology programs’ and developed an overall self-assurance framework for the program; one that fitted the Agile methodology. According to Brandt the GCDO in response stated:

‘Yeah, look, if that would work, that would be amazing’.

The final argument from Brandt was that it did work, and that it made ‘the difference’ with the program. Unlike Novopay, EPDP also utilised Gateway Reviews, which Brandt argued benefited from having respected and ‘high-powered’ actors on the review panel. According to Brandt, the reviews:

‘... consistently reported extremely favourably about what we were doing and called this out as exemplars on a number of fronts ...’

The elite interviewees who formed parts of various teams all agreed that Agile methodology enabled a beneficial change in internal assurance throughout the project at each iteration. This was because assurance of deliverables was real-time, with the benefits being able to be

applied before planned release, and that there was a cycle of continuous learning. As a simplified example of the process used, as described by Persons BU and BV (Snr Project Officers), dummy screen designs were agreed, followed by a beta model development, and following reviews and testing by relevant stakeholders, progression to a ‘clickable prototype’ for more intensive assurance and schools’ involvement. The EPL/EPDP was also argued to have benefited assurance wise from each team having an ‘open door’ policy that enabled people to attend any team meeting they wished, to either inform, learn, or provide feedback (Person BV, Snr Project Officer).

There was also internal oversight and assurance via an internal Audit team who developed their approach ‘based on those of the overarching assurance plan’ (Persons BS & BT, Snr Audit/Assurance). The role and approach of the internal audit team is worthy of a special mention, for it ultimately led to the EPL Internal Audit team being awarded the *Institute of Internal Auditors New Zealand 2019 Award for Team Excellence in Internal Auditing*⁶⁷. No mean feat and great recognition of public sector innovation. In short, the team adapted its processes to fit the Agile methodology. They did this independently and not as the result of an institutional initiative, nor was it vetted by any central agency (Person BS, Snr Audit/Assurance). It was also argued by Person BT (Snr Audit/Assurance) that the willingness to adapt within EPL and try something new was a key factor. Person BT stated that in a previous role when they had argued for a similar change in processes it ‘was not well accepted’, yet in EPL it was ‘embraced’ by senior management. They argued that much of the audit world remained caught up in the:

...’ old Audit approach. Bayonet the wounded, and providing assurance after the fact, and writing long reports. When I was there, an audit would take me a whole quarter because it was so big, and then we would take another two months to get the report out. What is the point?’

The Audit change implemented, complementary with the Agile methodology, was to ‘shift left’. The was explained as a process of moving the audit/assurance to earlier in the development process, ‘shift left’ and do it before it is finished and where value is added, and

⁶⁷ EPL, viewed 30 November 2011, <http://educationpayroll.co.nz/education-payroll-wins-internal-auditors-new-zealand-award/#:~:text=Education%20Payroll%20has%20won%20the,IIANZ%20Chair%20James%20Rees%2DThomas>

to resolve issues before they become bigger issues. Person BT argued this change was accepted easily in the EPL and EPDP due to its close fit with Agile processes; it added additional value early. Person BS (Snr Project Officer) stated this ‘transformed’ the way the Audit team worked.

Person BS argued that as a result the internal perspectives of Audit have changed, and that they are seen as valuable members of the team, ‘trusted advisors’, who contribute to providing timely advice not only to program teams but to the CE/Sponsor. The audit team was claimed to have open invitations to all EPDP team meetings, where questions were welcomed. In fact, they argued ‘I have become part of the team’. They further added that in this role they provided a valuable bridge between the technical and the customer, to ensure solutions were customer focussed. Person BS (Snr Audit/Assurance) explains the process as:

‘... we contribute at the time of the meetings and say this is what we want you to do. Make sure you incorporate all of this into you thinking. Any risks you have I want to know. Have you thought about dependencies and things like that, and make sure everyone walks along at the same pace? It has been quite successful.’

A side benefit of the change in Audit approach, was claimed by Person BT (Snr Audit/Assurance) to be a correlated increase in job satisfaction as there is direct evidence of benefit from their role to the program. Person BT stated:

‘From an Auditor’s point of view, all four of us now are much happier in our roles, because we are affecting change, and we have an input.’

The use of Agile was also argued to be the catalyst for a realisation of new ways to assure and audit projects, one that provides benefits over past methods. As a result, Person BS (Snr Audit/Assurance) is now:

‘... trying to sell it to anyone who wants to listen.’

On this point, Person BT (Snr Audit/Assurance) stated that the team had:

‘... entertained nine different Audit teams from different organisations. We have presented to Treasury, we have presented to the Institute of Internal Auditors, and to the Agile Assurance Forum.’

Whilst congratulating them on their achievements, I also asked Person BT, if as a result of these forums whether there had been any institutional change initiated. They stated that no, there has been no central jurisdictional change as a result. They argued it was really up to the agency's leadership to accept the change. When asked why there was this resistance to change, they argued:

'I think a lot of them are died in the wool, old professional auditors, and a lot of them are too afraid to make the change, or the governance structure does not want that ... It [EPDP] was a fairly well-run project in the first place, and our senior leadership was quite comfortable with us going in a new direction. We were lucky in that respect.'

9.4.3 Organisational factors: were organisational factors considered at planning?

The consideration of organisational factors into forecasts, at the EPDP replanning stage has been covered in earlier sections of this chapter. There was evidence that schools were made front-and-centre of planning with a customer focus central to the program ethos. Agile delivery, and iterative, cyclical planning and deployments were also argued to assist in identifying and addressing the these and other factors in a timely manner.

Interestingly, particularly given the legacy of Novopay and the political impacts it had, there was little evidence of political factors impacting on the program. White stated that the Minister's requirements were clear, he wanted a staged rollout and for the program to ensure the schools were ready to take the solution, and to minimise any undue impact on the end users.

9.4.4 Financial management: how did organisational financial management capability influence EPDP forecasting?

9.4.4.1 Suitability of financial management practices

White stated that the EPL, as a scheduled 4A⁶⁸ company, does not get their own appropriation through Government, it is instead funded by an annual ‘service fee’ from the Ministry of Education. With the approval of the DBC, White stated the approved funding model was an increase in the annual service fee of NZ\$3m over the 10 years of the program plus a NZ\$14m loan which is drawn upon as needed, but which is to be repaid once ‘benefits start to realise’. White stated this model was quite different to the normal practice of funding a business case, and also meant White had to deliver both core payroll delivery services and the EPDP from the annual service fee. White inherited this funding model and stated, ‘she never understood why financing had to come through as a loan’, and that this did have and has continuing implications for the program. White stated:

‘Is this the way I would have preferred this, absolutely not ... [we could have had a different approach/plan] it made things extremely tight for us in the program ... it was a nightmare.’

Person BT (Snr Audit/Assurance) claimed that the financial requirements established in the DBC, based on the traditional fiscal year spend, was a mismatch for EPDP which was operating in an Agile world, where the focus was on delivery. Person BT argued this created a problem for the program’s financial manager, and for White in explaining this to central agencies and governance bodies. White explained that EPDP had to navigate all the checkpoints required, such as Treasury and Gateway Reviews and at each step had to explain the financial management to practices of Agile, and the differences with traditional methods, to all these parties. White stated,

‘They were not convinced that the way we were reporting was going to make them happy, but once we had several independent quality assessments, we had Gateway Reviews, and people

⁶⁸ ‘Schedule 4A companies are established when the objectives sought (which could be a mixture of social and commercial objectives) might be best supported by joint ownership. The Crown may not own all shares at the start or it may wish to reduce its shareholding in future. An example is City Rail Link Ltd in which the Crown and Auckland Council each have a 50% shareholding. Companies listed in Schedule 4A of the Public Finance Act 1989 are subject to the Companies Act 1993 and relevant provisions of the Crown Entities Act 2004.’: The Treasury, viewed 7 December 2020, <https://www.treasury.govt.nz/information-and-services/commercial-portfolio-and-advice/commercial-portfolio/types-companies-and-entities>

saw we were delivering, and the customer satisfaction scores that were going steadily up, and all the way we had developed a program plan, they actually became quite used to the process.'

White also highlighted a difference in financial management of a traditional Waterfall delivery, and Agile. White claimed that in a Waterfall project the budget is seen as for the whole project and as a result money could be 'shuffled' between tasks, whereas in Agile there was a budget allocated to each deliverable. To amend this required governance approval, based on solid arguments. White argued this to be an advantage of Agile as it made the program 'more focussed' on budget allocation and management at a more macro level.

A point of difference between the EPDP, and Novopay and indeed the Stage 1 findings, was a stated intention to treat the EPDP product as an asset. White stated that the EPDP products will be depreciated over 12 years. Brandt stated it was not the intent of the program to build it and then hand it over to 'let it rust away'. Brandt stated that the program had been structured to deliver a number of products, and a key objective of the program was to ensure that a structure 'in both finances and teams' to ensure ongoing maintenance.

9.4.5 Large projects: could Agile be applied to all large projects?

The elite interviewees were asked if they thought component-based delivery such as Agile, based on their experience with the EPDP, could be applied to all or most large ICT software projects. The consistent response was, yes. Some were definite, such as Person BW (Snr Project Officer) who stated:

'So, to answer your question, particularly from a development side ... I do not think that there is any project that could not be done Agilely.'

Others such as Person BS (Snr Audit/Assurance) argued that people just need to think differently, to look at alternatives, hence in the future if a Waterfall approach were the only option recommended, they would:

'... question the value of it because with the Waterfall format you could still possibly do it in an Agile way. It is easy enough to adapt.'

Another interviewee, Person BW (Snr Project Officer) related a story of during the replanning stage of asking an external Agile consultant bought in to assist, how was going to be possible to do this work using Agile? The consultant responded:

‘... he has never seen a piece of work, and [they] worked at [large organisation], which had 80,000 developers or something ridiculous, worked with some really big companies, that you cannot break down.’

Others posited that potentially some projects, or parts of projects, may require a mixture of Agile with more traditional methods. White reflecting on a past major transformation project, mused that whilst she could not imagine doing some parts of it in Agile, there were certainly other parts that could have ‘been done’ in Agile.

9.4.6 Forecasting conclusions

The EPDP followed an approach detailed in a replan after the approvals of the earlier DBC and PID, both prepared by earlier management teams. This fundamentally changed the approach, yet the EPDP was and still is approved on forecasts made in the DBC including the funding model. This has created ongoing problems for the EPL and EPDP management in terms of governance, financial management, assurance and assessing outcomes. There were perspectives that the DBC, not just for EPDP but generally, are a waste of time and irrelevant if used as a tool to forecast way into the future and approve on that basis. They were deemed useful for outlining the vision and scope, but not for estimating so much unknown.

With the replan, the program was broken into 21 ‘investments’ which were prioritised. Whilst an initial ‘t-shirt- estimate’ was made of all work, the true forecasting followed the Agile ethos of iterative development, learning, adapting, applying, and reforecasting for the next investment. This improved forecasting relevancy at each cycle. This was aided by the Agile ‘stable team’ approach which provided a consistent cost and effort baseline.

Other factors considered in the forecast were the simplification of contracts with vendors, the inclusion of Novopay lessons learnt, particularly the requirements for schools’ engagement and progressive deployments. The process was also aided by strong assurance, mainly internally applied and consistent with the Agile mantra of review and learn at each stage. The EPL internal assurance approach was nationally recognised. There was also a perception that the implementation, ongoing support, and continual defence of the EPDP Agile approach, was due to the agency and capability of Arlene White, the EPL CE and EPDP Sponsor. White was argued to have listened, learnt, and defended.

Finally, there was a common perception that Agile can be applied to all large ICT software projects, either in full or for certain components.

9.5 Findings and relationship to the theoretical concepts

9.5.1 Capability and capacity building

There was early recognition that the EPL did not have either the internal capability or capacity to undertake the EPDP, particularly given the choice to use Agile delivery methods.

Therefore, organisational priority was given to establishing both as a precursor to commencement of major program tasks. Initially skills were primarily sourced externally, but through a deliberate strategy implemented progressive skills transfer to internal staff, boosting both its capability and capacity. The program is now largely internally resourced.

For the two critical program roles, both benefited from having a capable resource from the outset. Arlene White, the EPL CE, as the sponsor had extensive past operational experience in many aspects of a large ICT Project. White was very aware of the responsibilities and accountabilities of the sponsor and willingly and successfully took on the role. However, this was by chance not as a result of an outcome in the institutional framework to improve sponsor capability. Secondly, the program director role was filled by a vastly experienced external resource who worked hand-in-glove with the EPL CE/Sponsor and was made part of the EPL SLT.

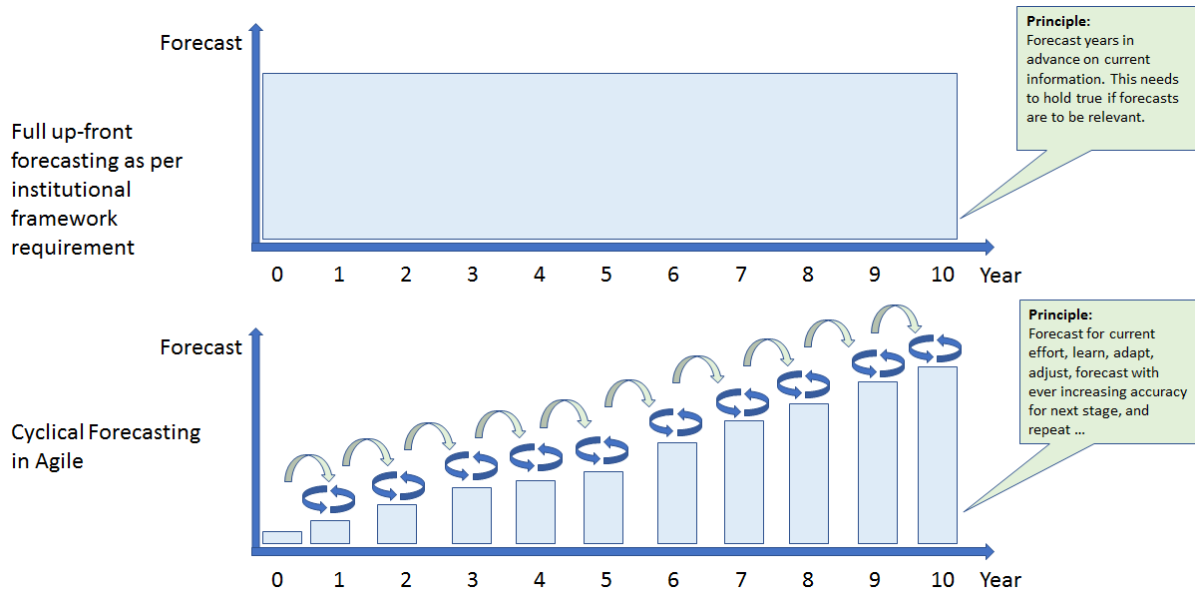
9.5.2 Financial management

The EPDP forecast, in full up-front, and the funding model were approved as part of the DBC. This was the institutional framework requirement. The EPDP approach changed substantially afterwards, including the change from a Waterfall to an Agile delivery program each with quite different financial management approaches and requirements, yet the centrally approved forecast remained as per the DBC. This was argued to have created ongoing challenges for the EPL.

The dynamic between the institutional framework requirement for a full up-front forecast, and the progressive forecasting of Agile is displayed in Figure 9-ii. With the full up-front forecast, as per the DBC, it is an estimate of what lays ahead many years into the future largely without having undertaken any major development. With Agile, it is a mantra of do a small bit, learn facts such as how long did it take, what resources were required, what was the cost, what do we need to change, then forecast for the next stage utilising this information. The argument being that accuracy and relevancy of the forecast will increase as the program progress. It was

also argued that this method of component-based funding, then review and forecasting for the next component, adds a level of financial management and financial governance that does not exist in the more traditional waterfall method.

Figure 9-ii: Simplified variances in forecasting approaches



9.5.3 Contract management

The EPDP opted for simple contracts. To fit with the Agile mantra, vendors were engaged to supply services for a particular ‘investment’ on a time and material basis to deliver that product. This would be reviewed for the next ‘investment’, the appropriate skills agreed with the vendor, and then commence. It was perceived to be a ‘win-win’ for both the EPL and the vendors.

9.5.4 Stakeholder management

Schools were the primary stakeholders, and they were front-and-centre of all planning and project activities. This was driven from the top-down and the elite interviewees indicated this customer-focus was imbued in all aspects of the program. Substantially improved schools’ customer satisfaction ratings indicate the success of the program in stakeholder management.

Internal stakeholder management was also perceived to be a priority, with a culture of open and honest communication between all levels of the program and EPL.

9.5.5 Methodologies

The SAFe methodology was utilised by the EPDP and from the perspectives of the elite interviewees this was effective in enabling the delivery of the EPDP products. Gateway Reviews were also utilised, with EPL management considering these to have been useful.

9.5.6 Accountability

The EPL Chief Executive, Arlene White, was clear on where the accountability for the delivery of the program rested, and that was with her. This was one of the cited reasons why White took on the EPDP Sponsor role.

9.5.7 Organisational learning

The EPDP incorporated past learnings, particularly from Novopay, into both written plans and into the culture of the program, such as the heavy emphasis on a customer focus and progressive staged voluntary deployments to schools. The Agile methodology was also perceived to have enabled real-time continuous learning; a feature claimed to have greatly assisted with each progressive delivery. There was an also awareness in all interviewees that the major mistakes of Novopay were not to be repeated.

Similar to a comparison used in the Novopay chapter, findings from *Dangerous Enthusiasms*⁶⁹ (Gauld & Goldfinch 2006, pp. 132-136) are compared to the EPDP findings (see Table 9-1). The Gauld and Goldfinch would be well pleased to note that the successful EPDP and their findings are in sync.

⁶⁹ This book researched past large New Zealand Government ICT projects, and analysis of INCIS and other projects were included its findings.

Table 9-1: Comparison of ‘Dangerous Enthusiasms’ lessons with EPDP

Dangerous Enthusiasms (Gauld & Goldfinch 2006, pp. 132-136)	EPDP (2016/20)
<i>Things to do if you want to increase the likelihood of failure:</i>	<i>The EPDP response:</i>
Make the project as big as possible.	The project was broken down into a series of 21 ‘investments’ – a series of small progressive projects.
Attempt organisational change and link this to the project, and then continually change specifications throughout.	A schools’ customer focus was central to change management. Extensive engagement in design, review, and testing, plus a progressive voluntary roll-out were utilised successfully. The change in schools’ awards was removed as a dependency of the project.
Assume the contract will solve any problems, and instead of breaking the contract into manageable components award one for the whole project.	Simple ‘win-win’ contracts based on a time and materials for each deliverable were utilised successfully.
<i>Be pessimistic, guiding principles:</i>	<i>The EPDP response:</i>
Be modest about what can be achieved.	With the use of Agile, achievement was based on the delivery of each of the 21 ‘investments.’ Each arguably modest as an individual challenge, but collectively a substantial achievement.
Believe solutions will work only when they can be shown to work.	Each product went through a careful, design, prototype, review, test, review, release process. Even the choice to schools’ use the product was voluntary and was dependent on the quality of the product.
Expect to encounter the problems of past project, they will happen.	They did, however the use of Agile was argued to have mitigated this and provided the ability to adapt to these challenges.
Excluding front-line staff is a high-risk strategy and could undermine the solution even if it works.	Front-line staff, within schools and the EPL service centre were central to the program ethic. They were considered part of the ‘team’ and vital in the design, and review of all products.

Additionally, when the EPDP findings are compared to the findings from the Novopay chapter (see Appendix F: Comparison of Novopay findings to EPDP findings) the differences could not be starker. The EPDP approached things differently and addressed many of the Novopay issues.

9.5.8 Leadership

From the perspectives of the elite interviewees, it is clear that the EPDP benefited from strong, capable, effective, and supportive internal leadership. The program was given organisational priority from the CE who has championed and supported the program throughout. However, the role of central agency leadership was perceived to have been variable, at times supportive, and at other times minimal.

9.5.9 Entrepreneurship

The EPDP did things differently, not only from Novopay, but from norms within the New Zealand institutional framework. Whilst the move to an Agile delivery was proposed and approved under an earlier EPL management team, the concept was embraced and fully supported by the new CE, Arlene White. Agile delivery itself was argued to encourage entrepreneurship as it is a cycle of continuous revision and adjustment.

The EPL Internal Audit team also displayed entrepreneurship by implementing a revised internal assurance approach, one that was argued to be effective by the elite interviewees but has also been recognised nationally. In addition, the EPL CIO was nationally recognised for her initiative in the program, and the EPL/EPDP have been nominated for an international technology award.

The program internally and externally has been considered a success as a result.

9.5.10 Agency

The EPL CE continued to support and defend the use of the Agile delivery method for EPDP. The elite interviewees perceived that without this support from the very top of the organisation, the EPDP outcomes would arguably have been quite different.

9.6 Conclusion

No interviewee argued that the EPDP was perfect as a result of the use of the Agile methodology, as it remained a large project and as such it was claimed there will always be challenges. The argument from the elite interviewees instead was that despite these issues the program has succeeded, and this was due to the benefits that the use of the Agile methodology and delivery approach provided, including being able to quickly adapt to these organisational challenges as they arose. There was common agreement from the elite interviewees that Agile can be used either in full or part for any large ICT software project. The issue is that the financial management, budgeting, and assurance of Agile projects remains at odds with the institutional framework requirements.

However, the overriding theme from the interviews was that despite the overwhelming support for Agile and the role it played in the program's success, the EPL and the EPDP benefited by chance in having a CE and Sponsor as capable and entrepreneurial as Arlene White. Without White at the helm, and whilst hypothetical, it was perceived that the result may have been quite different. It was stated that there was no appetite within the New Zealand Government for a repeat of Novopay, and White and her dedicated, collaborative, and capable team have successfully achieved this. They have done so by doing things differently and learning from the past, and the contrast with Novopay is stark. To do things differently required strong leadership, to have a leader willing to take up the fight institutionally, and that is where White came to the fore.

Chapter 10: Findings

'No institution can possibly survive if it needs geniuses or supermen to manage it. It must be organized in such a way as to be able to get along under a leadership composed of average human beings.' (Drucker 2008, p. 26)

10.1 Introduction

This thesis focusses on the institutional governance of large Australian and New Zealand government ICT software projects. Given that available evidence indicated across the sectors there is a pattern of ongoing and persistent poor outcomes in these projects, it was posited that governance is failing to meet desired outcomes. It was argued that given the impact — financial, reputational, organisationally, publicly, and politically of these poor outcomes — this was a significant problem and one worthy of research. Despite this, there is little to no research on this across the sectors, and this thesis addresses that void.

The theoretical framework applied to this research places governance in the new institutional theory realm as its key theoretical principles include the existence and evolution of schemes, rules, norms, and guidelines for organisational behaviour. This is important and relevant as these large ICT software projects within the Australian and New Zealand sectors are initiated, approved, and managed according to these organisational guidelines, collectively formalised via institutional frameworks. However, new institutionalism, whilst concerned with the impact of institutions on individual behaviour, is also concerned with the interaction between the institution and the individual (Koning 2016; Lowndes 2018). In addition, new institutionalism is argued to be a complementary means to research new governance as both are not only concerned with the structure provided by institutions, but also with agency in the adoption and adaptation of the institution (Bevir 2007). Therefore, it was argued that the use of new institutional theory to assess governance was pertinent.

The intent of the qualitative interpretive design of this thesis was to differentiate itself from other research, and to add relevancy to the data by undertaking a large number of elite interviews of stakeholders in these projects. What was their experience in these projects and how do they perceive the role and effectiveness of the governance in achieving good outcomes? Are there perceived challenges in adapting governance to address any issues?

What are the stories of these individuals and what is the overall narrative as a result? It was argued that by doing this something that is not yet known will be documented.

Therefore, the research questions under investigation in this thesis were:

Q1: What is the perceived effectiveness of governance in the Australian and New Zealand public sectors for large ICT software projects in achieving desired outcomes?

Q2: What, if any, are the perceived challenges with adapting governance for large ICT software projects in the Australian and New Zealand public sectors?

This chapter will detail the narrative that has emerged from the research, including a comparison between the Stage 1 (General) and Stage 2 (Case study) findings. There is also discussion on the theoretical, policy, and practical implications of the findings. Finally, there is a short conclusion, and possibilities for future research identified.

10.2 The narrative

The narrative to emerge from the stories of the elite interviewees is one of institutional inertia leading to a failure in governance leadership. It is a narrative of organisational forgetting, ignored complexity, and as a result a spattering of entrepreneurship by actors with agency. It is a narrative of possibility. Possibility that effective governance change can happen, if instead of imposing bureaucracy, leadership in governance was collaborative and flexible with a focus on the delivery. Finally, it is also a narrative of hypocrisy, imposing governance controls, yet in some instances ignoring them.

The governance, as enacted by the institutional frameworks, is argued to have failed to adapt to address lessons from the past, it is almost as though they are forgotten, until the next time it happens. Whilst there was evidence of some change, or attempts to change, this has been slow and was perceived as failing to address the critical governance issues. This is an interesting dynamic, as all interviewees highlighted the governance weaknesses and stressed the need for change, yet it was perceived that it is not an executive priority to do so. More to the point there was no evidence that governance leaders are collaborating with these actors to identify the issues and ideas for change; these actors have much to give. The complexity of the large ICT software projects was perceived as a major factor in current governance. These projects were identified in literature and by the elite interviewees as being hard, difficult, volatile, and arguably uncontrollable against original forecasts over extended periods. Therefore,

governance arguably needs to focus on reducing complexity not adding to it. If not inert, leadership in governance is at best indifferent to this issue. Therefore, there was a perceived high likelihood that the same mistakes will be repeated and poor outcomes for the large ICT software projects will continue across the Australian and New Zealand public sectors.

This narrative was highlighted in each of the three roles/disciplines analysed in this thesis. The sponsor is a critical project leadership role, yet the perception was it remains misunderstood, not prioritised, with little to no training provided, and that the skills do not exist except by chance. The project management discipline was also perceived to be misunderstood, with an executive focus on project management skills rather than to acknowledge it as an organisational discipline of which a project manager is just one aspect. Finally, there was perceived executive failure to understand the folly of the current guidelines for the approval and funding of large projects, and to treat ICT solutions as assets and to manage them accordingly.

Whilst the intent of governance via the institutional frameworks was argued to provide control and consistency, it in fact was perceived to limit the adaptation and entrepreneurship necessary to address the complexity, and to force projects down a path that increases the likelihood of poor outcomes. It is argued to be about bureaucratic control rather than supporting and enabling effective outcomes. Paul Barratt AO (APS Ex-Secretary of Department of Primary Industries and Energy & Department of Defence, Ex-Executive Director of the Business Council of Australia) when asked about the intent of institutional frameworks stated:

'... they [institutional frameworks] are designed to reduce risk but they do not enhance innovation and creativity ... they are almost the last common denominator [and are designed to] prevent the worst abuses, or the worst of incompetency, so you have to do A, B, C, but a person with their head screwed on right will operate within those boundaries but ignore them.'

Therefore, there is an argued dichotomy between the formal rules of the institutional framework that actors are prescribed to follow and to limit 'bad behaviour', and the entrepreneurship of an actor with agency to apply a more pragmatic approach to avoid further disasters. There was evidence that entrepreneurs have stepped outside aspects of the framework to improve outcomes yet remain limited by others. The problem is these entrepreneurs are rare, hence the majority of actors are left to follow the formal rules. There is also a hypocritical aspect to the application of the formal rules of the institutional framework.

Projects are approved to commence jurisdictionally and governmentally following these rules, yet the agency with responsibility for the project does not have the capability to deliver, setting the project up for failure from the outset.

To address, or perhaps avoid, the collective governance issues, this thesis posits that it is time to acknowledge that large ICT software projects are complex beasts and therefore there is a need to reduce the complexity, capability requirements, and risk, by doing things differently. Plan differently, fund differently, govern differently, else more of the same can be expected. This is currently being left up to actors with the entrepreneurship, initiative, and agency rather than through executive leadership addressing governance. It is argued that it is time for those with responsibility for leadership in governance to ask, listen, act, and in effect let go of some control.

10.3 Case study findings and comparison

The research design included a series of ‘general’ interviews with 57 elite interviewees across 2018/20, known as Stage 1. The research design also included two case studies of large ICT software projects, *Novopay* and the *Education Payroll Development Program* (EPDP), known as Stage 2. This section will compare the findings of the case studies with each other and against Stage 1, and the overall narrative of the research findings.

Novopay was approved in 2008 and followed the then institutional framework guidelines to undertake planning and approval. It was not some rogue project operating in secret. The institutional framework and the Novopay planning documents indicated that lessons from past failed projects had been incorporated in the management of the project. However, the mistakes were repeated, arguably magnified. There were some particularly important institutional governance issues highlighted with Novopay. Throughout the project Novopay operated within the institutional framework and was approved to start, continue, and go-live by project governance, central agencies, and government. The project was approved to commence even though there was an acknowledgement that the Ministry of Education (MoE) did not have the capability to undertake such a complex project. It was approved as a large single project even though the then guidelines recommended complex projects should be broken into components. Once started they were then largely left to manage independently without the capability to do so. This was argued as a failure in institutional governance, not a personal failing of the sponsor or the MoE. It was a sad and tragic tale, with disastrous

outcomes for all stakeholders. There was also a direct relationship between the issues identified in Novopay and those in the Stage 1 general interviews some 10 plus years later. This indicated that adaptation at best is slow, and at worst, has not happened at all (see Appendix E: Comparison of Novopay findings to Stage 1 findings).

The EPDP had a direct relationship with Novopay. It was to replace critical components of the Novopay solution that were ineffective. Therefore, the EPDP would encounter many of the same challenges as Novopay. Hence, central to the EPDP planning and management were the Novopay lessons learnt. The EPDP has been successful, and successfully addressed the risk of repeating Novopay issues. This arguably was due to three major factors. Firstly, the program benefited, by chance, in having an extremely capable project sponsor who took on the role, all of its responsibilities and accountability, with entrepreneurial gusto and skill; what a difference that made to the Novopay model. Secondly, capability and capacity to undertake the project was assessed and acknowledged up-front, with a strategy of acquiring that capability/capacity prior to commencing key tasks made a leadership priority. Finally, the project was not undertaken as a single large project, it was broken into components to break down complexity and to aid learning and was delivered via Agile methodology. This was credited as being the catalyst for the program's success. However, this approach was not necessarily supported by the institutional framework and the sponsor used their agency as the Chief Executive to work around this. The EPDP findings also indicated that despite the successful use of Agile, change to highlight this in the institutional framework was perceived to be slow.

The Novopay and the EPDP case studies also highlight the earlier mentioned hypocritical nature of the governance. It was widely acknowledged that the MoE did not have the capability to undertake the project, yet they were asked to do so. In addition, Novopay which followed the institutional framework and maintained government support throughout has now been widely cited as a catastrophic failure, costing the careers of senior bureaucrats. The EPDP indicates a project that has, where possible, avoided or worked around the standard guidelines as an acknowledgement that by following them they could not achieve the desired outcomes. This project is classified as a success and is being held up as an 'exemplar' in New Zealand. Which governance path should future projects follow, the one to avoid 'bad behaviour' or the one to focus on successful outcomes?

Similar to Novopay, the conceptual findings from the EPDP are also very closely aligned to those from the Stage 1 findings. Whilst the EPDP did things differently, the elite interviewees continued to raise the same issues. To break this comparison down further, Table 10-1 compares the Stage 1 and Stage 2 theoretical concept findings. The correlation between the Stage 1 and Novopay findings are eerie, the Novopay issues are still reflected a decade later. The EPDP findings highlight that the Stage 1 and Novopay issues were known to exist, but to address these they did things differently. They stepped outside the institutional framework to do so. The concepts are not listed in any priority order, however, without leadership to recognise the need for, and to drive and prioritise change, addressing any of the other concepts is unlikely to happen.

Table 10-1: Comparison of theoretical concept findings

Theoretical concept	Stage 1 General (2018/20)	Novopay case study (2008/212)	EPDP case study (2017/20)
Capability and capacity building	Capability and capacity do not exist, and it is not an organisational priority to address the issue. Where it does exist, this was seen to be by chance or luck rather than as a result of institutional framework outcomes.	The MoE did not have the capability to undertake Novopay and failed to address this. They were also left to act independently to do so. The Sponsor was lacking in capability and had no past experience.	Early recognition that both capability and capacity were lacking, hence the initial leadership focus was to address this prior to the project commencing key tasks and to implement capability upgrade and maintenance strategies. The sponsor had vast past experience in large ICT software projects. This was by chance, rather than a designed outcome.
Financial management	The requirement to forecast in full up-front at the initiation stage was seen as an impossible task that produces irrelevant figures and is a major issue with these projects.	Required to prepare a full up-front forecast which proved to be wildly inaccurate.	The program had to prepare a full up-front forecast, which remains a benchmark. This was inaccurate, and eventually irrelevant as the

Theoretical concept	Stage 1 General (2018/20)	Novopay case study (2008/212)	EPDP case study (2017/20)
			project moved to an Agile delivery method.
Organisational learning	Learning is not happening, with a reliance of written reports after the event. There is also a culture of ‘learned helplessness’ and of forgetting. Real-time continuous learning preferred.	Despite much past learnings available, Novopay arguably learnt nothing and repeated and exaggerated past errors.	The project effectively addressed key Novopay learnings and has not repeated the same mistakes. This was arguably largely enabled by the use of Agile methodology with a cycle of continuous learning and breaking down risk and capability demands. Importantly it also enabled progressive staged delivery.
Stakeholder management	A missing capability, with the function poorly undertaken. Vendor management perceived to be particularly poor.	Stakeholder management was poor. Schools were not engaged effectively, and the relationship with the vendor became toxic.	Stakeholder management was made a key focus of the program. Schools were actively and successfully engaged from the outset and continue to be so. Vendor management was also perceived to have been effective.
Contract management	Capability does not exist, with a focus on entering into long-term contracts based on up front estimates. Seen as an impossible task and setting the relationship up for failure.	The contract with Talent2 was based on a pre-determined amount in the forecast, not on the work to be undertaken which was largely unknown. It was also a long-term contract.	Vendor management was made effective due to the use of various vendors for specific tasks, with a focus on the capability and capacity to undertake each component. This was on a time and materials basis and was seen as a ‘win-win’ for all.
Accountability	Misunderstood, avoided, and applied inconsistently. Seen as all risk and no reward.	It was perceived that the sponsor misunderstood their accountability and as a result avoided key	The sponsor, the CE, fully understood her accountability and actively participated in the program and was

Theoretical concept	Stage 1 General (2018/20)	Novopay case study (2008/212)	EPDP case study (2017/20)
		responsibilities. However, they were held accountable and resigned from their MoE role as a result.	perceived to have led from the front.
Methodologies	Methodologies exist but were perceived to be applied inconsistently and largely ineffective in improving outcomes.	PRINCE2 was used but was seen as a 'tick in a box' to comply with an institutional requirement. It was argued to have been ineffective in improving project outcomes. Gateway Reviews were not used.	The program used an Agile delivery methodology which was widely perceived as being highly effective and enabled the program to meet many of its objectives as a result. Gateway Reviews were also used, with the sponsor stating these to have been helpful.
Leadership	Two key areas of leadership failure. Firstly, government and jurisdictional executive leadership to adapt institutional frameworks. Secondly, a lack of senior project leadership particularly in the sponsor role.	The sponsor failed to provide the leadership required and was perceived to distance herself from the project. However, there was also a perceived failure by government and central agencies in their governance roles. They endorsed the project throughout including the go-live decision.	The sponsor, who was also the CE, was perceived to have provided highly effective leadership, and was viewed as a major contributor to the program's success. Government and central agencies were perceived to have had little leadership input and largely left the program to its own devices.
Entrepreneurship	'Stop doing large projects' was the dominant idea. The preferred approach was to break large projects into smaller components to reduce complexity, risk, and capability demands.	Novopay was undertaken as a single large complex project and implemented 'big bang'.	The program was broken into many smaller components and delivered incrementally via an Agile methodology.
Agency	Some institutional frameworks do support doing this differently. However, there is a reliance on the agency of the project executive to	Agency was not used effectively in Novopay. The sponsor avoided responsibility. In a variation to the <i>Ministerial Inquiry</i>	The use of Agile in the EPDP was not an institutional framework guideline. It was pursued and supported due to the

Theoretical concept	Stage 1 General (2018/20)	Novopay case study (2008/212)	EPDP case study (2017/20)
	do so. This was seen as a positive. Political agency was seen as a negative as it can usurp institutional guidelines.	(Jack & Wevers 2013) findings, there was a perception that political influence did negatively impact on the go-live decision.	initiative and agency of the Sponsor/CE. Political influence was not a factor, arguably due to the ongoing success of the program and with a resultant contented minister.

Finally, this thesis is not researching how large government ICT software projects are classified as either a ‘success,’ or a ‘failure’ or parts in between. That is a major research undertaking requiring a different methodology to that applied here, and indeed a totally different research question. It has been highlighted in Section 10.9 as an area for potential future research. However, given the historical nature of the two case studies, and the perception of their outcomes, this does provide an opportunity to analyse why each is perceived respectively as a failure and a success. This is relevant as this section is also making a comparison between the two case study projects. The work of Allan McConnell (McConnell 2010a; McConnell 2010b; Howlett, 2012) that proposes a spectrum from success to failure for public policy is a suitable means of undertaking this assessment. It was argued that assessing an outcome traditionally based on the outcome of the program — for example, technical goals, cost, time, against that planned — was not alone suitable. Therefore, two additional measures were introduced. Firstly, the outcome as a policy, where due to institutional policies and processes there is a failure to move from idea to reality. The institutional frameworks reflect this policy and are applicable in this instance as they directly influenced how the case study projects were approved and managed. Thirdly is the political, as policy outcomes can have political implications. For each, McConnell proposed a spectrum roughly equated to moving between virtual universal support for the outcomes to a state where that support is virtually non-existent, success to failure or parts in between. In addition, it is important to note and aligned to comments in the introductory section of this thesis, the use of the term ‘virtually’ acknowledges that universal agreement remains utopian.

The two case studies are analysed against the McConnell spectrum (adapted from McConnell 2010a, pp. 352-356). For Novopay (see Table 10-2), for policy, and aligned to the findings of Chapter 8, the table indicates that whilst there may have been compliance success in

following the governance framework, this was at best conflicted as it was argued that by doing so contributed to the eventual poor outcomes of the project, and there was a drive for change as a result. As a program, support for Novopay’s outcomes was and remains virtually non-existent, as evidenced by the findings in the *Ministerial Inquiry* (Jack & Weevers 2013). Novopay was also very politically damaging. Based on this analysis it is arguably not difficult to understand why Novopay has been classified as a failure, almost universally so.

Table 10-2: Novopay assessment against the spectrum

Spectrum	Policy	Program	Politics
Success			
Resilient success			
Conflicted success	<ul style="list-style-type: none"> Governance framework was followed, but signs of disagreement. Long-term legitimacy was tainted. 		
Precarious success	<ul style="list-style-type: none"> Out of touch with viable alternatives. 		
Failure	<ul style="list-style-type: none"> Support for the governance framework was virtually non-existent. 	<ul style="list-style-type: none"> Implementation failed to be executed in line with objectives or achieve desired outcomes. Damaging to a particular target group (i.e., Schools). Program support is virtually non-existent. 	<ul style="list-style-type: none"> Damaging to the reputation of the government and leaders, with no redeeming political benefit.

For the EPDP (see Table 10-3), for policy, and aligned to the findings of Chapter 9, the table indicates much the same findings as Novopay. The findings were that the governance framework was followed where mandatory but was ineffective in meeting the requirements of

the project and did not support innovation. There was a desire for governance change as a result. The EPDP has found and continues to do so, wide support from all stakeholders in meeting program deliverables, it has been cited as an ‘exemplar’ in NZ government. Given this success, there has been virtually no negative political impact. However, as identified earlier, the EPDP has not delivered to time or budget, and yet its ‘success’ remains resilient. In this case, being able to effectively deliver a product and meet stakeholder and political expectations, arguably overrides this factor. It can also be argued that in the case of the EPDP the program and political successes were only possible due to the ability and determination of the project sponsor to do things differently and step away from policy shortcomings.

Table 10-3: EPDP assessment against the spectrum

Spectrum	Policy	Program	Politics
Success		<ul style="list-style-type: none"> Implementation in line with objectives and has almost universally been perceived as being successful, even cited as an ‘exemplar’ in NZ government. Schools have greatly benefited and there is now a strong relations and renewed trust. 	<ul style="list-style-type: none"> The political reputation has not been damaged. Opposition to the government for the initiative is virtually non-existent.
Resilient success		<ul style="list-style-type: none"> Outcomes broadly achieved despite some shortfalls (e.g., time, cost) 	
Conflicted success	<ul style="list-style-type: none"> Governance framework was followed, but signs of disagreement. Long-term legitimacy was tainted. 		
Precarious success	<ul style="list-style-type: none"> Out of touch with viable alternatives. 		
Failure	<ul style="list-style-type: none"> Support for the governance framework was virtually non-existent. 		

In summary, the perceptions of the elite interviewees indicate the Novopay issues remain a decade later across the Australian and New Zealand sectors. There was no evidence of widespread governance adaptation. The EPDP project, whilst impacted by institutional factors such as financial management guidelines, has been successful due to the program doing things differently. They stepped outside the institutional framework to avoid issues. The project adapted, the governance framework had not, and this was due to the entrepreneurial agency and skill of the Chief Executive/Sponsor. These findings fit within and support the overall narrative. In effect this reflects that the institutional frameworks were insufficient to provide effective governance for the project. Effective governance was provided through adaptation due to agency.

10.4 Theoretical implications

The theoretical framework chapter (see Chapter 3) discussed institutional theory. Institutionalism was identified as the study of institutions and defined as ‘humanly devised constraints that shape human interaction’ (North 1990, p. 3). These constraints shape behaviour that should and should not be done, with actors adhering to these rules as it is in their best interest to do so (Ferris & Tang 1993, p. 7). These constraints in turn then provide ‘stability and meaning to behaviour’ through the routinisation of tasks (Timney 1996, p. 101). This system of formal and informal rules, guidelines, procedures, roles that guide the behaviour of actors is classified as an institutional framework (North 1990, p. 6). All jurisdictions within the Australian and New Zealand public sectors have institutional frameworks for the operation of large ICT software projects, from how they are initiated and approved, how they are funded, what methodologies are to be used, resourced, assurance mechanisms, and so on. This in effect provides the governance for these projects with an emphasis on steering these projects with more ‘consistent and coordinated’ practices (Peters 2001, p. 78).

Analysis of the elite interview data indicated that governance via the institutional frameworks within the Australian and New Zealand public sectors is generally adhered to, that is, as a default agencies and actors follow these. For example, the preparation of business cases in a prescribed format at a prescribed timing to gain approval. However, as identified in the narrative, this adherence to the institutional frameworks was perceived to force agencies and

projects down a path that increases likelihood of poor outcomes. Therefore, compliance may be achieving consistency, but the problem is that it has been perceived as being consistently ineffective.

That leads to the issue of adaptation, as it is also an important part of institutional theory that these institutions and the resulting governance are not static, they innovate and adapt to evolving circumstances and environmental issues (Peters 2001, p. 84). This thesis argues that despite overwhelming evidence supporting change, the framework has not adapted accordingly. The desire for change from within, and the actual adaptation of the framework are not in sync. The narrative that has emerged is that adaptation fits somewhere between non-existent to slow, that there was in effect an institutional inertia to address the issue. Inertia can be thought of as the ‘stickiness’ of institutions (Pierson 2004, p. 8), they can be hard to budge. Alternatively, this stickiness can be thought of as the embeddedness of the various structures and practices (Starik & Rands 1995; Dacin et al 1999). This institutional embeddedness can make change a formidable task. The data in this thesis indicates the embedded structural institutional constraints via the framework are a major factor in this inertia. To analyse and explain this inertia further, with an institutionalist lens, the findings can be interpreted against several institutional factors.

Firstly, cost. The cost to implement all highlighted issues would be extensive. New structures, new skills, changed executive expectations, asset management, portfolio funding to name a few. From the interview data it was perceived that this cost was a definite factor in a failure to actively address the change required. The politicians and the executive balk at this as they see little benefit in it for them, but critically they fail to understand the true cost of failure as a result of not acting. As one example, a former government Education Minister was interviewed, and he posited that for him a choice between spending money on ICT software maintenance in preference to money to improve schools’ facilities was politically challenging, or in the immortal words of Humphrey Appleby, ‘a most courageous decision Minister’. The problem of course is that, as has been identified in this thesis, not maintaining a schools’ payroll solution can lead to major organisational, political, and public fallout. It has been argued that therefore the change required will only happen when the costs are low, the current framework is identified and accepted as being poor, and that all parties accept that the change is necessary (Espín-Sánchez 2014). Given the misalignment of those factors for large ICT software project governance, if this argument is true, then adaptation of the various

institutional frameworks to support large ICT software projects can be expected to remain inert.

Secondly, path dependence. This is interesting from a historical institutionalism perspective as events over an extended period of time seem to have had little impact in improving outcomes. That is not to say historically institutional frameworks have not evolved as a result of endogenous and exogenous factors as they have, for example the introduction of Gateway Reviews. However, based on the perceptions of the elite interviewees these changes have failed to-date to address the core issues with large ICT software projects. Mahoney (2000, p. 511) argues this can be thought of as a factor in institutional inertia as historically driven change once set-in motion tends to continue to track to that change and become embedded to the exclusion of other possibilities. This is an argument supported by Pierson (2000b, p. 75) who states once a path has been set, and other options discarded, an institutional commitment has been made and change becomes difficult. The requirement for a detailed business case at project initiation — perceived to be a pure guess on what will happen way into the future, and how long it will take and how much it will cost and classified as ‘a ridiculous nonsense’ of a process — on which the project is approved, and funds allocated is argued to be one example. The overwhelming perspective from the data in this thesis is that this alone contributes significantly to the continuing poor outcomes. However, the data indicated there was also a central agency and political resistance to ‘letting go’ as it was perceived they lose control. So, whilst there may be forces pushing for change, the public sector bureaucrats remain resistant to that change and innovation (Gains & John 2010).

Thirdly, the role of agency. The problem identified in this thesis is that the institutional frameworks can subjugate agency, or alternatively as Schmidt (2008, p. 314) states, there is a subordination of agency to structure. However, whilst subjugated institutionally, actors with agency are exerting influence over individual large ICT projects. If agency is thought of as ‘the capacity of individuals to act independently and to make their own free choices’ (Barker 2005, p. 448), or those with the capacity to ‘manipulate institutions’ (Abdelnour et al 2017, pp. 1781), then the use of agency was perceived and evidenced to be — with the exception of the political — largely a positive in the findings. Actors had used their agency, and entrepreneurial skills, effectively to circumvent perceived shortcomings in the institutional framework to improve project outcomes, or as a consequence of a struggle between institutionalised practices and the goals of the actor (DiMaggio 1988; Fligstein 1997; Beckert

1999; Lawrence 1999; Lockett et al 2012, p. 357). However, the perceived problem was that these actions and ideas are not leading to demonstratable institutional change. They remain independent initiatives, with localised learning, and the institution remains inert. To address this Bell (2011, p. 886) argued the answer was to bring agency back into the equation, for a more ‘discursive institutionalism’, a process where ideas and interactive discourse are communicated and feed into institutional change (Schmidt 2011, p. 684). That is not happening. As an example, the EPDP case study indicated that the program has been lauded nationally for its change in internal audit practices, nominated internationally for its use of Agile methodology, and been cited by New Zealand central agencies as an exemplar. However, from the elite interviewee perceptions this has not yet resulted in any change to the institutional framework, in fact for the internal auditors there seems to be suspicion from their peers. This is similar to findings in the ATO mini-case study (see Boxes 5.1 & 7.6), whilst the Commissioner used his agency to drive entrepreneurial change to great effect, there was no evidence that this has in turn resulted in wider endogenous change in the APS. If the use of agency is viewed as a reaction to the ineffectiveness of the governance framework, then a failure to learn from these successes and adapt governance accordingly reflects a weakness in governance.

Fourthly, leadership. A failure in leadership was perceived to be a contributing factor to the governance inertia. The failure was twofold, the second a consequence of the first. Firstly, there was a perceived failure of executive leadership in the adaptation and transformation of governance for these projects, and secondly a failure in leadership of the project by the sponsor.

Executive leadership in government was perceived to focus on control. Applying rules, guidelines, constraints, and the like. It is argued this approach is a poor fit with modern governance principles, the primary aims of which are claimed by Denhardt and Denhardt (2011, p. 422) to include fostering collaboration and building adaptive capacity and resilience. Whereas traditionally, adaptation was argued to be the result of transformational leadership (Van Wart 2003; Denhardt & Denhardt 2011, p. 424), it is argued that modern governance requires leadership that enables actors to fulfil their needs (Burns 1978, p. 19; Dugan 2012, p. 8). For example, whilst funding guidelines may support Treasury self-interest, they are ignoring the substantial negative impacts this has on the project. The two are at odds with each other. Collaboration is argued to address this dilemma with the decision-makers

recognising the legitimate interests of stakeholders by supporting the collaborative outcomes and letting go where necessary (Thomson & Perry 2006). This is a different style of governance leadership to that perceived in this thesis. I failed to identify any document or any evidence from the elite interviewees where there had been widespread engagement with the public sector stakeholders on governance concerns, and where this had led to the adaptation of the governance framework. It remains largely hierarchical control based.

The second aim of leadership was to build adaptive capacity and resilience into governance. It is argued that when everything seems to be out of control, such as in controlling large ICT projects, the natural reaction is that leadership reacts by applying more control via governance (Sutcliffe & Vogus 2003), which in turn can further reduce the organisational capacity and resilience to manage (Denhardt & Denhardt 2009). This does not result in adaptation that will transform, its intent is about more control. Moving from inertia to strangulation. Arguably the findings in this research support this perspective. The institutional frameworks are more about what must and must not be done, rather than what can and should be done. This rigid application of control is argued by Duit and Galaz (2008, p. 326) to be an inappropriate governance model when unpredictably exists, as it does in these projects. They argued instead for a more flexible governance model, one that is more adaptive to changing circumstances. Perhaps it is time for leadership to collaborate, listen, and act on those perspectives.

The failure in the critical sponsor project leadership role is argued to be causally related to the failure in governance of these large ICT projects to adapt. Actors are appointed to the role without the skills or experience, and there is no effective strategy to address this. Whilst there was evidence of some jurisdictional movement in this area, arguably it is insufficient.

Fifthly, is the matter of organisational learning, defined as when ‘the experiential lessons of history are captured in a way that makes the lessons, but not the history, accessible to organisations and organisational members who have not experienced that history’ (Levitt & March 1988, p. 320). This learning is then reflected in the cumulative adaptation of the ‘formal rules and structures, policy documents, manuals, standard operating procedures’ (Dekker & Hansen 2004, p. 217), that is, the adaptation of governance via the institutional framework. However, there has been a perceived failure to apply those learnings, contributing to the governance inertia, and the lack of adaptation in the institutional frameworks. This is argued to be a case of institutional amnesia, defined as the ‘ways in which government agents and organisations ... no longer remember or record policy-relevant lessons from the past’

(Stark & Head 2019, p. 1526). Pollitt (2000, p. 6) adds to this definition by arguing institutional amnesia is the ability and willingness of public sector institutions to access and make use of possibly relevant past experiences. Stark (2019, pp. 150-156) argued this amnesia is explained when amongst other factors, firstly, there is organisational churn. As has been noted in earlier chapters large ICT software projects are typically the responsibility of an individual agency hence learnings have been siloed, and to exacerbate this the teams can be very transitional, so learnings and storytelling walk out the door. Regular organisational restructuring adds to this issue. Secondly, an inability of the organisation to institutionalise change, to adapt. The complexity of the institutional frameworks for large ICT software projects, and their embeddedness, arguably limits the ability of an organisation to be adaptive change agents, as change then requires ‘intense and long-term political bargaining, such as planning regimes’ (Stark 2019, p. 152). Thirdly, is the passing of time, which can have two impacts. As time passes, there is a ‘drift’ in which risk perceptions fade, and coupled with the organisational churn factor, there is then an absence of historical storytelling to relive the lessons from past projects. This factor has a relationship with learning curve theory, which posits those organisational and individual learnings are forgotten when an activity ceases over a period of time or activities slow down (Globerson & Levin 1987; Cappelli 2000), and as a result there is danger to an organisation when it forgets key lessons from the past (Rigg 2016; Pedler & Hsu 2016; Biesenthal et al 2018, p. 44). This is relevant to large ICT software projects as they can be generational, with past stories lost or faded between each.

An example of this is one of the case studies in this thesis, Novopay. Project documentation stated it had applied learnings from past projects, including the previous payroll implementation many years earlier. However, Novopay amplified the mistakes. This organisational and individual forgetting was arguably magnified by the factor that a new project team was in place, hence no individual learning was brought forward. They were learning from scratch. Novopay was the responsibility of a specific agency, and there was no evidence of effective cross or inter-jurisdictional learnings. This supports a finding in research by Swan et al (2010, p. 327) who argued that organisations fail to learn from past projects when the learning is localised rather than organisation wide. This also aligns to perceptions of the elite interviewees who stated it was unrealistic to expect an agency to have the knowledge, experience, and skill to undertake a large ICT project when they are generational. People move on. Technology changes. Software changes. Therefore, when planning large projects, to apply the arguments of Kleiner et al (2012), the agency should first and foremost understand

they have forgotten how to undertake a large project or are not privy to localised learnings. Hence, whilst institutional frameworks try to adapt by adding ‘lessons learned’, the argument instead is that they are likely to have forgotten and inertia remains, as was the case with Novopay.

Finally, referring back to the spectrum for assessing policy success and failure and all bits in between, McConnell (2010a; 2010b) argued that this required assessment against three areas, policy, program, and the political. A comparison of the two case studies identified that each had similar problems with the policy area, as strictly adhering to or relying on the institutional governance framework and the policies therein would contribute to poor outcomes. Novopay followed the path to disaster. The EPDP, did not due to the agency, skill, and entrepreneurship of the sponsor, and achieved program and political success. Howlett (2012) argued that policy is the most difficult area to address shortcomings in due to factors such as the aforementioned leadership and organisational capability and capacity issues. The limitations need to be detected and altered and given organisational priority. Hence, similar to other theoretical findings, the road to policy success looks to be challenging.

In conclusion, with a governance focus, the findings indicate that the institutional frameworks do intend to create the ‘conditions for ordered rule and collective action’ (Stoker 1998, p. 17). However, if effectiveness of this governance is to be measured as actual performance against desired outcomes (Baekkeskow 2007, p. 258) then governance was perceived by the elite interviewees to have been ineffective, or at best insufficient in key areas. Part of the argued problem is that due to the multi-level nature of the governance effectiveness can be open to dispute (Baekkeskow 2007; McConnell 2015). An example would be the financial guidelines for these large projects. These were widely criticised by the elite interviewees yet supported politically and executively as it was seen to provide surety over costs, a self-interest, yet at the project level they were seen as a major factor in project issues. The findings also indicate that governance is largely ‘*impositional*’ (Richardson 2012), imposed from above, with a focus on control, and little evidence of governance adaptation through collaboration, participation, and responsiveness: adapting from the experiences of those impacted (Helco 1978; Katsamunská 2016). This therefore introduces a dilemma for project leadership. Do they follow an imposed governance that could lead to losing control of project outcomes, such as the financial aspect, for which they will be held accountable, or do they put self-interest first and step away from aspects of the governance to improve the likelihood of good project outcomes? The research

indicates this self-interest in the project does occur when there is both capability and agency. Hence agency is used to provide a balance between compliance and flexibility. The interesting aspect of this finding is that it not a secret when this happens, central agencies are aware of this 'stepping away', and there seems to be tacit support and trust. The EPDP case study is a prime example. This is arguably acceptance that institutional governance adaptation is slow, therefore localised adaptation is tolerated.

In conclusion, with a new institutionalism focus to understanding the relationship between institutions, behaviour, and outcomes (Diermeier & Krehbeil 2003; Scott 2005; Parsons 2007), the findings indicate institutional inertia, which is leading to tensions between the institution and the behaviour of individuals. The inertia is due to several factors. Firstly, whilst the elite interviewees may have perceived the institutions to be ineffective, they largely followed them as it was expected they should, almost from fear of not doing so, a key tenet of rational choice institutionalism (Schmidt 2010). As a result, change is static. Secondly, there were also indications that actors are influenced by the social legitimacy of the institution, a key tenet of sociological institutionalism (Thelen 2004; Parson 2007; Kenny 2007). They act not from a fear of not doing so but as they perceive it is appropriate to do so (Schmidt 2010). Potentially, a future example may be a more widespread use of Agile delivery methods as it gains (presumably) more wide-spread legitimacy. However, to gain legitimacy takes time (Bevir 2010), and as a result change has remained static. Thirdly, whilst there was evidence of historical institutional change such as the introduction of PRINCE2, Gateway Reviews, and revisions to financial rules, these have failed to address the key governance issues identified by the elite interviewees. The institution has become sticky, with embedded rules that tend to exclude alternatives (Starik & Rands 1995; Dacin et al 1999; Pierson 2004). Finally, a dynamic and endogenous means of change are ideas. Discursive institutionalism argues that these ideas are weapons for institutional change, that can both identify the problems and provide solutions for dealing with them (Blyth 2001). The problem is, the findings indicate that whilst the ideas exist, the change is not happening as the discursive interaction is absent. This lack of change in the institution to address key issues causes the tension, and as highlighted earlier, actors with capability and agency circumvent this by stepping away from the institutional framework and doing things differently to improve the likelihood of project outcomes.

However, the dilemma with a reliance on a match of capability and agency to address the shortcomings in governance and its frameworks, is that this thesis has found capability a matter of ‘chance’ or ‘luck’ across the sectors. Therefore, there will be a continued reliance on the institutional governance arrangements to steer these actors and projects.

10.5 Policy implications

There was no evidence from the elite interviews of any disagreement that governance of large ICT software projects via an institutional framework was necessary. The narrative however was that the framework is not working. It is not achieving the desired outcomes. The narrative was also that the framework was failing to adapt, that there was institutional inertia to change. This inertia was analysed theoretically, and due to a number of factors it was argued that the frameworks have become ‘sticky’ and themselves are a constraint to change. Therefore, this inertia and perceived constraints has policy implications (see Table 10-2).

Table 10-4: Policy implications for the factors of institutional inertia

Institutional inertia factor	Type of inertia	Implications on behaviour and project outcomes	Implications for policy
Cost	Cost is as a barrier to change, as the benefit of the expenditure is not recognised institutionally or politically. A failure to understand the cost of failure.	Projects will continue to struggle within the constraints.	The funding of all components related to an ICT large project (structure, skills, training, maintenance etc.) needs to meet requirements.
Path	There is ongoing commitment to policy implemented historically.	Forced to follow a path that has previously led to poor outcomes.	Removing ongoing commitment to past changes.
Agency & entrepreneurship	Governance is imposing structure over agency. Agency becomes reliant on entrepreneurship.	Due to a perceived lack of capability, actors with agency are following the framework. Those with agency and capability are	Tricky. Removing structure from agency when actors do not have the capability may lead to problems. However, the imposition of complex

Institutional inertia factor	Type of inertia	Implications on behaviour and project outcomes	Implications for policy
		being entrepreneurial and doing things their own way.	controls leads to agency being applied to circumvent these to improve outcomes.
Leadership (in governance)	<p>Failure in governance leadership to address major issues.</p> <p>Failure to collaborate, and imposing controls from above with disregard to discourse/ideas from jurisdictional actors.</p> <p>Typically respond to crisis by adding more control.</p>	<p>Imposing controls from above.</p> <p>Lack of capability and capacity to undertake large ICT software projects.</p>	<p>Governance requires a collaborative approach, not a hierarchical imposed one that ignores the needs of those impacted.</p>
Organisational learning	<p>There is a culture of forgetting, not learning, arguably due to the extended time frames between each large project, and the siloed approach to undertake these projects.</p>	<p>The same mistakes are repeated.</p> <p>This is exacerbated by the fact that large ICT projects are typically the responsibility of an agency, and there is little collaboration or sharing between agencies.</p>	<p>If you proceed with large ICT software projects acknowledge there is much you do not know up front.</p> <p>Alternative is not to do large projects. Negate the issue.</p>

(adapted from Munck af Rosenschöld et al 2014, p.645)

The problem is that there is major policy and cultural change over an extended period required to address the inertia. It is all a bit overwhelming, particularly as was stated in the interviews, part of the problem is that this change is likely to be just one of many policy issues happening within a jurisdiction at any time. So therefore, it is not just a matter of leaders recognising and prioritising the need for this change, but then prioritising this ahead of or along with other policy agendas, and over an extended timeframe. Given the lack of historical change and a stable political environment required to support the change, it is arguably not unreasonable to expect that the above will not be addressed in a timely manner, if at all.

Therefore, the major policy implication can be drawn from the discourse of the elite interviewees, and the narrative highlighted in this thesis. That is, what is required is not more governance, but less complexity. This is not an argument against governance, but rather the focus should be on increasing the effectiveness of governance to improve outcomes, not by adding further project controls. This was a finding in a Gartner report (Moore 2015) that posited despite 50 years of ongoing failures and lessons learnt the same things keep happening, and the common organisational response is to think that more governance control is the answer, and it has never worked. They argued the crux of the problem was a ‘refusal to address the complexity’ and that the solution is less bureaucracy in governance and a renewed emphasis on ensuring the project can meet its outcomes. These findings can therefore be summarised as, if there is a problem in the capacity of governance (inertia), then the answer is to change the nature of the problem (reduce complexity).

A number of key policy implications to address complexity have been identified. Firstly, it was argued to expect the public sector should have the capability and capacity across a range of roles and disciplines to undertake these extraordinarily complex large ICT software projects was lunacy. However, it was argued the sectors do have capability for smaller, less complex projects. They can deliver these projects. The following quote from Drucker (2008, p. 26) supports this perspective by arguing:

‘No institution can possibly survive if it needs geniuses or supermen to manage it. It must be organized in such a way as to be able to get along under a leadership composed of average human beings.’

Therefore, the argument from the elite interviewees was that policy should concentrate on the development of the project management roles and disciplines across the organisations to support the smaller and operational projects. There is no need for ‘superheros’, and where these are required for a large project, you bring them in with the experience and currency of skills. Therefore, do not approve any project to commence if it is planned as a single long-term project. This ideally should be via a series of smaller component-based projects that progressively deliver the solution. Continuation of the project is dependent upon the successful delivery of each component and evidence of benefit delivery to support the delivery of the next component. Whilst there was evidence of the growing use of delivery through component-based methods such as Agile across jurisdictions, and also some

resistance, the argument here is this approach should not just be applied to smaller projects, but to break down the complexity of the large projects.

Secondly, and coupled with the above, was the issue of how large ICT software projects are forecasted and funded. Do away with the need for a large project to forecast in full up-front and be funded on that basis. The alternative was progressive, gradual funding based on learnings and outcomes from each stage. This is different to some current policy, such as in Victoria, where a project is required to submit an up-front forecast, be approved on this, but is part allocated in stages based on previous outcomes. This is saying, though I have a clear scope and defensible benefits for the project, I do not know how much it will cost, I need so much to begin, and then as I progress the overall cost and time will become clearer, and I only expect to be supported if I have succeeded and the project is worthy of continuation as a result. The political need to forecast in full was the common reasoning for continuation of the policy, however if the ethical requirement is to forecast with accuracy, then change is required (Wachs 1990). This is a major cultural change in the governance of these projects.

Thirdly, regardless of any move to component-based delivery, the sponsor role remains critical. It was unanimously perceived that the sectors do not have this capability, and there remains a failure in leadership to address this gap. One of the reasons it was argued this was not being fully addressed was simply the effort and cost in establishing a detailed program for sponsors within a jurisdiction. For example, in Tasmania it was stated this would not be justifiable. However, this arguably is the situation for all of the Australian and New Zealand public sectors. The economies of scale are not there within individual jurisdictions to establish something akin to the UK Infrastructure and Projects Authority (IPA) sponsored *Major Projects Leadership Academy* (MPLA), delivered in partnership with the Saïd Business School, University of Oxford. Whilst not specifically targeted at ICT projects, it is targeted at the leadership skills to ‘transform the implementation of Government policy through world-class delivery of major projects’ with a focus on ‘securing transformational outcomes.’ To achieve this the MPLA aims to provide the leaders with ‘the broad set of skills’ required to do so. The course is intensive and extensive. It recognises the importance and criticality of effective leadership in large projects, and it is a prerequisite to undertake specific roles in a large project. It was argued that:

‘The launch of the MPLA makes the UK Government the first in the world to introduce mandatory leadership development across its entire major project portfolio, supporting and

equipping its project leaders at the most senior levels in Government with the right skills and capabilities to deliver major projects effectively (Deloitte 2016).'

There is potential for a similar school to be established for Australian and New Zealand public sector use. The Victorian Government, to their credit, in 2019 established the *Victorian Major Projects Leadership Academy* (VMPLA), developed in cooperation with the Säid Business School and based on the UK model. This is a 12-month tertiary-based course. The course has now been rebranded the *Australian Major Projects Leadership Academy* (AMPLA)⁷⁰ and open to participants across Australia. However, and arguably a reflection or confirmation of the perception that ICT project skills are treated as '2nd fiddle' to other infrastructure projects, Person BN a Snr Assurance Officer (2018, pers. comm. 18 September), confirmed that the course is not open to ICT project staff, whilst also admitting there was possibility they could. Therefore, there remains a policy gap in how to address the capability of senior leadership roles in large ICT projects. Potentially this is an opportunity for other jurisdictions to work with the AMPLA stakeholders to look for opportunities to expand this to ICT project leaders. Also, there is potential for an institution such as the Australia and New Zealand School of Government (ANZSOG) to take leadership on this issue similar to the *Executive Master of Public Administration* initiative in partnership with jurisdictions and universities across Australia and New Zealand. A key part of this policy would be a requirement that senior executives be required to undertake this training so that it is part of their organisational skill set, and as a prerequisite to being appointed to a project leadership role.

Lastly, almost as an acknowledgement that major policy change may take time, meet with organisational resistance, or not happen, is a 'quick-win' via the implementation of a checkpoint at project initiation. Whilst the institutional frameworks may make mention of the need for capability to undertake a project, there was little evidence of an assessment being made at initiation and this being made part of the approval to proceed. The Novopay case study is the classic example. Approved to undertake an extremely difficult and complex project without the capability, set up to fail from the outset. Therefore, the logical place to

⁷⁰ AMPLA, Office of Projects Victoria, viewed 18 January 2021, viewed [https://www.google.com/search?q=Victorian+Major+Projects+Leadership+Academy+\(VMPLA\)&rlz=1C1CHBD_en-GBAU718AU718&oq=Victorian+Major+Projects+Leadership+Academy+\(VMPLA\)&aqs=chrome..69i57j0i10i22i30i457.1309j0j15&sourceid=chrome&ie=UTF-8](https://www.google.com/search?q=Victorian+Major+Projects+Leadership+Academy+(VMPLA)&rlz=1C1CHBD_en-GBAU718AU718&oq=Victorian+Major+Projects+Leadership+Academy+(VMPLA)&aqs=chrome..69i57j0i10i22i30i457.1309j0j15&sourceid=chrome&ie=UTF-8)

assess a large project and the ability of the agency to deliver as planned, is at the project initiation stage. The notion is simple, if you are not capable to deliver as planned, rethink the approach before commencing.

Whilst there should be a Gateway Review at this initiation/business case stage, it was perceived by the elite interviewees that this was to more to assure information in the proposal, for which there is a reliance on the agency to provide the information, with all its inherent enthusiasm, optimism, and self-interest, rather than being a truly independent assessment of the ability to deliver. In support of this is the fact that since the implementation of Gateways poor outcomes have continued, despite passing this stage gate, largely due to the inability of agencies to deliver as planned.

However, it has been highlighted throughout this thesis that the projects operate in a political environment, and regardless of policy, decisions can be made to the contrary with validity.

10.6 Practical implications

The practical steps outlined below are aligned to the identified policy implications, resulting in a five-step project approval and funding process. Its intent is to stop poorly conceived large ICT projects at initiation rather than set them up for failure. It is a process to match the approach to capability. It is also a practical solution to the stated policy implications in Section 10.6, namely that governance change through policy change is in a state of inertia, therefore, change the problem by reducing the complexity of the projects at initiation.

1. Assessments of the organisational capability to undertake the project must be made at the project initiation stage. If the capability does not fit the plan, the project is not approved. There should be no excuse, or avoidance of accountability, for jurisdictional approval of a project that the agency is incapable of delivering.
2. No project is approved to commence unless the project is broken into smaller component-based projects, or at worst a mixture of traditional waterfall and component-based, together with a capability and capacity plan to deliver.
3. Product delivery to be iterative and progressive; no big-bang approach. Learning is to be applied from each stage to the next stage.
4. Sponsor is to be experienced, skilled, and assigned with an appropriate resource and support model. No variance.

5. A full up-front forecast should not be required for the project, nor a project full budget allocation based on this made. Whilst an end goal on project scope and deliverables is required — as all parties need to know what the objectives and benefits of the projects will be — there should be acknowledgement that final costs will only be known and become more relevant as the project progresses through each stage. It is a process of providing seeding money, delivering, replanning, and providing more money based on those results. In effect a total cost is not yet known, it will evolve. This is a paradigm shift in public finance for these projects.

During the review of the final draft of this thesis, including the above practical implications, I was reading a magazine out of interest and came across an article in the *itnews* (Hendry 2021). It was timely and is mentioned here as it is pertinent to the above practical implications (see Box 10.1).

Box 10.1: Change afoot in NSW

The heading of an article in the *itnews* was ‘*NSW govt IT cost overruns fall; by 90 percent in four years*’ (Hendry 2021). The article claimed that due to an initiative by a NSW Government agency to introduce a new assurance framework for large ICT projects, the jurisdiction had successfully reduced the risk, failure, and cost overruns of these projects. It was stated that under the auspices of the *Digital Restart Fund* any project forecasted to be AUS\$5m or over undergoes extensive review before it is allowed to proceed. In addition, it was claimed that the initiative had been successful in reducing the average cost and size of these projects.

Via the *Digital Restart Fund* (digital.nsw 2021) the NSW Government has allocated AUS\$1.6b over three years to invest in ICT projects and is administered by the Department of Customer Service. Projects that are eligible for funding include customer journeys and life events, state digital assets, legacy systems, and capability building. The fund develops a ‘pipeline’, or portfolio, of eligible projects from across the jurisdiction and investment in these is prioritised against specific criterion. Successful projects are then allocated a budget from the fund but are required to comply with monitoring guidelines. The fund provides up to AUS\$5m as ‘seeding money’ which the project can use in a discovery, alpha, beta phases, or to build prototypes. Projects in excess of AUS\$5m must undergo a more detailed business case preparation and assessment; however, a key part of this case is a plan to break the project into iterative component-based deliverables. For these projects, whilst a full up-front forecast

is still required, funding is provided in 'tranches.' Continued funding is dependent upon the outcomes of each stage (this has similarities with the Victorian model), and as a guide funding is set at AUS\$20m tranches. Key to the provision of any funding, or in effect approval for the project to commence, is that the project must pass an initial assessment. This includes factors such as strategic alignment and desirability. However, also included is an up-front assessment 'to ensure the project can be delivered with reasonable effort given existing capabilities.' That is, if you cannot deliver as planned with existing — internal or purchased — capabilities then the project will not be funded to commence.

I contacted Mark Howard (Executive Director, ICT/Digital Investment and Assurance, Department of Customer Services) to discuss this initiative. Howard confirmed that the key aim is to reduce the risk in these large projects by reducing their complexity. This means component-based delivery methods, shortening timeframes, progressive and restricted funding based on demonstrable good outcomes, and reducing capability demands. Howard stated the seed funding was an acknowledgment that for these large projects there can be much unknown, hence the seed funding is there for the project to 'test the water' before committing to a path or a major investment. Howard stated that the unit has paused approval on projects as initially planned until complexity and capability concerns are addressed. Howard also confirmed that the unit has stopped large projects that whilst initially funded had failed to deliver as planned. A major factor looked at is timeframe, with Howard stating it is highly unlikely that approval for any project beyond a two-year timeframe would be approved without delivering ongoing benefits/outcomes. The framework that governs this fund was also stated to have been developed after consultation with jurisdictional stakeholders in the projects. It was collaboratively developed and not simply imposed from above.

The intent of this framework is closely aligned with the practical implications identified from the findings in this thesis. That is, it is better to stop the project at initiation, and look for a less complex path, if the capability is not there to deliver as planned. If other jurisdictions were to collaborate with NSW there is arguably much to learn from this initiative. However, it is also interesting to note that for large projects over the AUS\$5m level, a full up-front forecast is still required. It seems to be that this change is one-step too far.

10.7 Conclusion

Initially, it is important to reiterate that there were no major divergences between the Australian and New Zealand elite interviewee perspectives, they were closely aligned. Arguably this consistency provides added relevancy and emphasis to the findings for all Australian and New Zealand public sectors and their agencies.

To answer research question one, the overwhelming perspective of the elite interviewees was that the governance of large ICT software projects within the Australian and New Zealand public sectors has not been effective in achieving the desired outcomes.

To answer research question two, it was perceived that the governance has not been adapting as required, is static, with historically embedded practices. The major issue was that governance is being imposed top-down, rather than evolving through a collaborative exercise with actors with the knowledge, experience, and ideas. The governance is focussed on control, adding to the complexity of these projects, where less complexity and more flexibility is required.

The key theoretical conclusion is that major and timely reform of the governance for large government ICT software projects across the Australian and New Zealand public sectors is in reality unachievable. This is because of inertia and the lack of leadership committed to and prioritising adaptation. Therefore, the practical solution to avert future large-scale disasters is to avoid large complex projects that require superhuman efforts and capabilities. Instead break down large projects into components that align with capabilities. In effect an acknowledgement that if there is difficulty in changing the capacity to govern, change the nature of what is to be governed.

10.8 Research limitations and problems

The willingness of current public sector staff to participate in the interviews varied. Most were extremely supportive, and I am grateful to all these people. However, almost all public sector staff wished to be anonymised and participated on that basis. Given the generalisation of most data, this was not usually an issue. However, in some situations this did limit potentially important analysis. For example, in one jurisdiction there was a publicly much-vaunted political initiative to address ICT project governance. An actor involved in implementing those initiatives was interviewed and confirmed despite the media hype not

much has actually been achieved, or likely to. This could have been an excellent mini-case study but was not possible to do without putting the interviewee at risk of exposure and its consequences.

10.9 Potential for further research

Whilst this thesis aimed to address an identified gap in literature and to answer two specific research questions, many issues were identified in the process of this research, and they have been documented in the various chapters. It was not feasible or appropriate to expand on all of these in this thesis, however many present possibilities for further research. Several of these have been highlighted below.

Firstly, the ability of the political to override institutional governance guidelines was highlighted in this thesis. The ‘Robodebt’⁷¹ project was an Australian federal government policy initiative, to be managed via an ICT solution. It proved to be a disaster of monumental proportions that resulted in a class against the government, and eventually settled by the government at a cost of AUS\$1.2b⁷². It was and remains a highly political and national issue. Following a qualitative interpretive approach as employed in this thesis, it would be valuable and highly interesting to gain the perspectives of the public servants and other stakeholders involved in the development and implementation of Robodebt. This is to gain an understanding of the impact of the political on effective governance of the project, and on the accountability for outcomes.

Secondly, whilst there remains an ‘official’ assessment of project outcomes against the project’s original forecast of time, cost, and scope, it appears this is flexible in its application. This was highlighted in the EPDP case study where the project has been classified as a success despite being over time and budget. The EPDP has been highly effective in delivering quality outcomes and continues to gain strong government support as a result. Other projects highlighted in this thesis have been considered ‘failures’ as they were over time and budget. Who makes this call, and to whom is it important? What is a successful project, and what is a

⁷¹ ‘label commonly applied to the initiative starting in 2016 designed to increase recoveries by government of “overpayments” made to social security recipients, retrospectively dating back to 2010.’: ‘Robodebt was a policy fiasco with a human cost we have yet to fully appreciate’, *The Conversation*, viewed 12 January 2021, <https://theconversation.com/robodebt-was-a-policy-fiasco-with-a-human-cost-we-have-yet-to-fully-appreciate-150169>

⁷² *ibid*

failed project in the Australian and New Zealand public sectors? Is it even possible to provide a consistent assessment, or is it inevitably variable based on other factors? There is much literature on this issue, but a concentration on large ICT software projects in the Australian and New Zealand public sectors would provide a new perspective and potentially inform public policy.

Thirdly, treating ICT solutions as assets in the Australian and New Zealand public sectors. Why is this not a practice? What are the barriers to this? What change is required to do so? Are there international comparisons of where this has been done?

Fourthly, the political influence on decision making and the resulting accountability. The Novopay case study highlighted a perceived political influence on the go-live decision, where actors were arguably influenced by a 'need' to get it in and 'fix' it later. A disastrous decision. This raises various issues, such as the capability of the minister themselves in these projects, as they are highly unlikely to have experience in such projects, so on what basis are these decisions made? Do they understand the implications? What can public servants do? This was something Paul Barratt (ex-Secretary, Department of Defence, and Department of Primary Industries and Energy) labelled as Ministers exhibiting the 'Dunning-Kruger' effect, where they have little experience in an area, yet they overestimate their knowledge and ability based on their position.

Fifthly, is the matter of institutional amnesia, not just a failure to learn, but forgetting the lessons learnt and the effective adaptation of governance as a result. There were factors for this amnesia identified in the theoretical implications section, such as organisational churn, the fading of risk and memory over time between projects, and the embeddedness of institutional frameworks. Stark and Head (2019, pp. 1528-1529) argued that to solve all issues with institutional amnesia is 'utopian and partly misplaced'. Instead, they argue a more reasonable approach is to tackle 'specific deficiencies rather than seek general cures.' For large government ICT software projects, what are these specific deficiencies and how can they be tackled?

Finally, although not originally intended as such, the sponsor, project management, and forecasting chapters, can also potentially be read standalone and provide rich detail on each of these areas. There are options within each for further research, such as accountability, perceived to be quite variable and situational.

10.10 *Autobiographical reflection*

My professional life was a major influence on the genesis of this thesis. I was a long-term NSW State Government employee. For the last 20 plus years I managed various ICT software and infrastructure projects and programs. My final responsibility was managing components of the *Learning Management and Business Reform* (LMBR) program within the NSW Department of Education (NSW DoE). LMBR was an exceptionally large program of work, attempting to undertake multiple organisational transformations: a new financial system, a new student administration, learning and management system, and a new HR/Payroll system. For an organisation, the size of the NSW DoE, any single one of these was a huge undertaking and to attempt all of these together under the umbrella of one program was arguably delusional.

LMBR became a political and organisational hot-potato and was the subject of much negative media interest⁷³. Working within this program, was extremely challenging and demanding — it was also eventually rewarding — but provided extensive and prolonged exposure to many of the factors that impact on these types of large ICT programs and projects. From the political impacts, environmental influences, to the maturity, capability, and capacity of the NSW DoE to undertake such a large complex program of work.

At the completion of my final role in the program, I left the NSW DoE, and indeed the NSW public sector. Part of this reason was that there was to be a continuation of LMBR to deliver the final product. I had no confidence that the organisation would adapt and do things differently and not repeat the same mistakes, however it was also time for a break, and to look for new challenges.

After I left work, I had time to reflect, not just on the NSW DoE but the government sector in general and why these large ICT projects continue to have so much trouble achieving successful outcomes and learning from the past. I personally believed this was a worthy puzzle to research. It is both interesting and important. Hence the move into student life again, and the commencement of this PhD. Additionally, the qualitative interpretive research design was key. Not once in my working life was I ever asked to provide feedback on the governance

⁷³ The then Minister, Adrian Piccoli, was interviewed for this thesis. His perspectives on this program and other issues have been included in this thesis.

of these projects, the expectation was to follow the controls and guidelines imposed by central agencies, and then left to deal with events independently. I was curious to put my views aside and to find out what others felt.

I should also point out that the NSW DoE and its Information Technology Directorate have done and continue to do great things and was a wonderful place to work for many years. I have seen and been part of projects that were rightly classified as great successes. Staff are skilled and dedicated and committed to providing an excellent service, and this I believe is true for the public sector generally, and that was confirmed by the many elite interviewees who participated in this research. The puzzle addressed in this thesis relates specifically to large ICT software projects. That distinction between outcomes for operational and smaller projects, and for large ICT software projects was also made clear by the interview participants in this research.

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Appendix A: Stage 1 interviewee data

#	Identifier/Name	Jurisdiction	Role	Date interviewed
1	Person A	APS	CIO	25 May 2018
2	Person B	NSW	Executive	21 May 2018
3	Person C	NSW	Snr IQA/Consultant	24 May 2018
4	Person D Ofar ZWIKAEL ⁷⁴	Private sector	Academia	18 May 2018
5	Person E	NSW	Executive	25 May 2018
6	Person F	APS	Snr Project Officer	30 May 2018
7	Person G	APS	CIO	30 May 2018
8	Person H	NSW	Assurance	24 May 2018
9	Person I Adrian PICCOLI ⁷⁵	NSW	Politician	31 May 2018
10	Person J	NZ	Snr Project Officer	12 June 2018
11	Person K	NZ	Executive	12 June 2018
12	Person L	NZ	CIO	13 June 2018
13	Person M	NZ	Snr Project Officer	14 June 2018
14	Person N	NZ	Snr Project Officer	19 June 2018
15	Person O	NZ	CIO	19 June 2018

⁷⁴ Professor, Director, Research School of Management, Australian National University; Associate Editor, International Journal of Project Management.

⁷⁵ NSW Education Minister (2011/2017)

Appendix A

#	Identifier/Name	Jurisdiction	Role	Date interviewed
16	Person P	NZ	Snr Project Officer	20 June 2018
17	Person Q	NZ	Assurance	21 June 2018
18	Person R	NZ	Assurance	22 June 2018
19	Person S	NZ	CIO	28 June 2018
20	Person T	NZ	Assurance	28 June 2018
21	Person U	NZ	Executive	29 June 2018
22	Person V	Private sector	Academia	4 July 2018
23	Person W	NZ	CIO	5 July 2018
24	Person X	NZ	Executive	6 July 2018
25	Person Y	NZ	Snr Project Officer	6 July 2018
26	Person Z	NSW	Assurance	25 July 2018
27	Person AA	NSW	Assurance	25 July 2018
28	Person AB	APS	Snr Project Officer	31 July 2018
29	Person AC David BOYLE ⁷⁶	Private sector	CIO	8 August 2018
30	Person AD	APS	Assurance	13 August 2018
31	Person AE	APS	Assurance	15 August 2018
32	Person AF	Vic	Assurance	20 August 2018

⁷⁶ CIO, National Australia Bank (2014/2017); CIO, Financial Services, Commonwealth Bank of Australia (2009/2011); CIO, Group Services, Commonwealth Bank of Australia (2006/2008).

#	Identifier/Name	Jurisdiction	Role	Date interviewed
33	Person AG	Vic	Assurance	20 August 2018
34	Person AH	Vic	CIO	20 August 2018
35	Person AI	Vic	CIO	20 August 2018
36	Person AJ	Private sector	Academia	21 August 2018
37	Person AK	Vic	CIO	22 August 2018
38	Person AL	Private sector	Snr Project Officer	23 August 2018
39	Person AM	NT	Executive	10 September 2018
40	Person AN	NT	Executive	10&11 September 2018
41	Person AO	NT	Assurance	11 September 2018
42	Person AP	NT	Assurance	11 September 2018
43	Person AQ	NT	Assurance	11 September 2018
44	Person AR	NT	Executive	12 September 2018
45	Person AS	NT	Assurance	12 September 2018
46	Person AT	NT	Assurance	12 September 2018
47	Person AU	NT	Snr Project Officer	12 September 2018
48	Person AV	NT	Snr Project Officer	12 September 2018
49	Person AW	NT	Executive (private sector)	10 September 2018
50	Person AX	NT	Assurance	12 September 2018
51	Person AY	APS	Executive	19 December 2018

Appendix A

#	Identifier/Name	Jurisdiction	Role	Date interviewed
	Michael CARMODY ⁷⁷			
52	Person BL	Tas	Executive	21 August 2019
53	Person BM	Tas	Snr Project Officer	21 August 2019
54	Person BN	Vic	Assurance	6 October 2020
55	Person BO	Tas	Assurance	26 March 2019
56	Person BP Paul BARRATT ⁷⁸	APS	Executive	23 June 2020
57	Person BQ	Anonymised ⁷⁹	Executive	2018

⁷⁷ Commissioner of Taxation, Australian Taxation Office (1993/2005); CEO, Australian Customs Service (2006/2009); CEO, CEO, Australian Customs and Border Force Service (2009/2012).

⁷⁸ Secretary, Department of Defence, APS (1998/1999); Secretary, Department of Primary Industries and Energy, APS (1996/1998); Executive Director, Business Council of Australia (1992/1996).

⁷⁹ This interviewee provided sensitive information that was used in the thesis and has been totally anonymised (that is no jurisdiction, or date/month of interview) to reduce any likelihood of identification.

Appendix B: Novopay interviewee data

#	Identifier/Name	Jurisdiction	Role	Date interviewed
1	Person AZ	MoE	Snr Project Manager	11 July 2019
2	Person BA	Datacom	Executive	12 July 2019
3	Person BB	MoE	Snr Executive	12 July 2019
4	Person BC	MoE	Snr Project Manager	15 July 2019
5	Person BD	MoE	Snr Executive	16 July 2019
6	Person BE	NZ Jurisdiction	Snr ICT Executive	18 July 2019
7	Person BF	MoE	Snr Executive	25 July 2019
8	Person BG	Talent2	Executive	29 July 2019
9	Person BH	NZ Teachers Union	Snr Representative	15 August 2019
10	Person BI	Talent2	Snr Project Manager	16 August 2019

Appendix C: EPDP interviewee data

#	Identifier/Name	Jurisdiction	Role	Date interviewed
1	Arlene WHITE	EPL	EPL Chief Executive & EPDP Sponsor	16 August 2019 & 6 October 2020
2	Jeffrey BRANDT	Deloitte	EPDP Program Director	16 August 2019 & 15 August 2020
3	Person BR	EPL	Snr Project Officer	6 October 2019
4	Person BS	EPL	Snr Audit/Assurance	6 October 2020
5	Person BT	EPL	Snr Audit/Assurance	9 October 2020
6	Person BU	EPL	Snr Project Officer	22 August 2020
7	Person BV	EPL	Snr Project Officer	14 August 2020
8	Person BW	EPL	Snr Project Officer	9 October 2020

Appendix D: Interview questions

The full list of possible questions is detailed below. The interview was semi-structured, as the conversation flowed a different path or additional questioning about that topic may have ensued. The same list of possible questions was used for both the Stage1 (General) interviews, and the Stage 2 (Case Study) interviews. The difference was that for the Stage 1 elite interviewees the responses were generalised based on the past experience of the participant. For Stage 2, the questions were specific to the case study project.

Sponsor related questions:

- The sponsor is a key role, do they have the required capability to undertake the role?
- Are you aware of any process to assess the capability of the sponsor prior to their appointment? If not, any views on this?
- How aware are sponsors of the role, and its full responsibilities and accountabilities?
- Where would sponsors get information about the role and what is expected? Is this sufficient?
- Do sponsors willingly accept the responsibility and accountability. That is, do they undertake this key leadership role?
- Vendor and stakeholder management are key responsibilities of the sponsor. How capably has this been undertaken, and what institutional support is there for them in these areas?
- How is the sponsor typically selected and appointed?
- What training is provided to the sponsor? Any views on the adequacy and relevancy of this?
- What support is provided to the sponsor in undertaking their role?

Project management related questions:

- How would you rate the organisational project management capability and capacity?
- Are you aware of any process to assess the project management capability of agency prior to them undertaking the projects? If not, any views on this?
- Public sector project management capacity/capability has been identified as an issue in many reports. Do you have an opinion on this, and how is this being addressed?
- What are the challenges that public sector agencies have building project management capacity and capability, and in implementing project management techniques and methodologies?
- Is addressing project management capability and capacity an organisational priority? What factors have impacted on this?
- Where does the role of project management fit within the importance and hierarchy of public sector organisations?
- How are key project management roles typically filled within a project?
- For large ICT software projects, are there differences in requirements for addressing capability and capacity and how do you address this?
- Contract management, establishment, structure, oversight is also critical to large projects who typically have 3rd parties, how would you assess this capability?
- How well do these large projects undertake benefits management and realisation?
- What authority does the project manager have in overall management of the ICT project?
- What role do methodologies play in project management capability and maturity?
- How are vendor and stakeholder management managed?
- How are prior lessons learned reported and implemented? Has this been effective?
- If large ICT software projects are so problematic, as evidence suggests, what are the alternative?

Forecasting related questions:

- How would you rate the organisational capability and capacity to develop forecasts for the large ICT software projects?
- Are you aware of any process to assess the forecasting capability of agency prior to them undertaking the projects? If not, any views on this?
- What is the institutional requirement for preparing forecasts, and how appropriate is this? How has this then impacted on the project pre- and post-approval?
- How has the organisation's project management capacity and capability (e.g., maturity, techniques, and methodologies) impacted positively/negatively on the preparation of forecasts?
- Are you aware of the methods/techniques used by agencies to prepare their initial plan and forecasts?
- Have you seen evidence of the project's assessing organisational factors (e.g., culture, geographical spread) and adjusting forecasts accordingly?
- What other public sector environmental factors (e.g., politics, and funding guidelines) can influence this planning/forecasting process?
- How do customisations impact on forecasts, and has this ever been an issue?
- How do agencies address optimism bias in their planning/forecasting?
- How effectively are these forecasts/plans assessed/reviewed?
- How are 'lessons learnt' shared and incorporated in future planning?
- How effective are the Gateway Reviews in providing assurance (e.g., validating forecasts)?
- Do you, or have you ever collaborated internally or externally when preparing forecasts?
- Is project financial maturity an issue at all?
- Are ICT solutions treated as part of an overall asset management plan? For example, does a proposal to replace an organisation's ERP solution 'come out of the blue' as an urgent requirement, or is part of a portfolio of assets with a depreciation and replacement plan?
- Is it possible to provide an accurate forecast for a long-term large ICT software project? If not, what are the alternatives?

Concluding questions:

- How would you assess a project's outcome?
- What are your top three issues?
- Anything else you would like to add, or suggest I look at, including any recommendations for interviewing, or additional documents?

Appendix E: Comparison of Novopay findings to Stage 1 findings

Novopay findings (2008/12)	Stage 1 findings (2018/20)	Match?
<i>Sponsor capability</i>		
<i>Sponsor capability (Chapter 5)</i>		
Sponsor not capable	Capability does not exist	✓
No assessment on sponsor capability prior to appointment (even though this was a requirement in the institutional framework)	No capability assessment is undertaken	✓
Reliant on written documentation for sponsor roles and responsibilities	Simply reading documents does not provide the level of understanding required	✓
Sponsor was held personally accountable for the project failure: punishment was the action	Sponsors are not held to account	✗
Selected and appointed due to senior organisational role and line responsibility for the project	Selected on domain rather than capability	✓
Sponsor had to undertake role on top of existing substantive role, which was already excessively busy	Default model is to undertake the role on top of the substantive position	✓
Sponsor was provided with no training	Whilst some initiatives to provide training existed, in the main this does not exist or where it does is not suitable	✓
A support model existed, but failed to provide quality advice to the Sponsor	Models exist, usually standard, but their effectiveness is variable	✓
<i>Project management capability</i>		
<i>Project management capability (Chapter 6)</i>		
MoE not capable	Capability does not exist	✓
No assessment on capability prior to appointment (even though this was a requirement in the institutional framework)	No capability assessment is undertaken	✓

Novopay findings (2008/12)	Stage 1 findings (2018/20)	Match?
Not an organisational priority to address	Capability is not an organisational priority	✓
MoE had to act independently to address capability issues	Largely left to individual agencies to address	✓
PRINCE2 was used as a 'tick in the box' but did not aid capability	Methodologies alone do not uplift capability and are often used as 'lip service'.	✓
Project team a mixture of internal and external/contract staff	A blend of internal and external resources is commonly used	✓
A skilled Project/Program Director was not engaged; the role was undertaken by an internal resource without the capability	Whilst the Project/Program Director should be sourced externally agencies are still allocating the role to internal resources without the capability	✓
Budget constraints influenced the ability to get the A-Team; resulted in focus on capacity instead of capability	Cost concerns can limit the ability to engage the best resources	✓
Vendor management capability was particularly poor	Vendor management capability are typically poor and need to be a pre-requisite	✓
<i>Forecasting capability</i>	<i>Forecasting capability</i> <i>(Chapter 7)</i>	
Capability did not exist internally – sourced externally but poorly undertaken	Capability does not exist	✓
Up-front forecast for full project required	Up-front forecast for entire project is common	✓
Up-front forecast seen as a major contributor to Novopay problems	Up-front forecast a major contributor to past and ongoing poor outcomes	✓
Novopay planners did not know what was involved yet prepared a forecast anyway	Incorrect assumptions you can plan now for future complex unknowns	✓
No standard forecasting/method; used 'workshops' run by a consultant	Jurisdictional standards/methods for forecasting do not exist	✓
The forecasting (full-up front) described as a 'nonsense' and 'impossible'	Forecasting accurately for long-term plans is impossible	✓
The assurance process was poor and ineffective	Assurance capability is seen as poor	✓

Novopay findings (2008/12)	Stage 1 findings (2018/20)	Match?
Central agency capability to assurance and advice was poor	Central role varies as does capability	✓
Customisation not factored into planning/forecast hence impacts excluded	Customisation costs regularly excluded	✓
Planned organisational change did not happen, the solution was instead customised	Organisations do not change processes to fit the solution – easier to change the solution than to change the organisation	✓
Contract management was poor and led to major project issues	Contract management capability is a problem	✓
MoE took a commercial and aggressive stance with the vendor, rather than a collaborative partnership where both win	Culture of ‘mistrust’ of the vendor leads to poor outcomes; focus is not on a win-win and it should be	✓
Talent2 contract was long term and there was so much unknown when this was negotiated	Long-term contracts have the same problems as long-term plans; cannot plan for the unknown	✓
Lessons learned were included in planning, however they were largely repeated	Same issues reappear in future projects: A failure to learn?	✓
There was no evidence of seeking any ‘outside view’ as part of planning/forecasting	No standard method or requirement to include an outside view.	✓
There was a failure to, or a best an underestimation of, organisational factors as part of forecasting	Including organisational factors in forecasts is not common	✓
Financial management capability for large ICT project was missing	Project financial management capability is missing	✓
Project argued on a ‘urgent’ replacement basis rather than as part of a long-term asset management or portfolio of works program	Public sector does not do ICT asset management as a formal process	✓
Novopay was only planned as a large ICT project, no alternatives seem to have been considered	There is no need to do large projects, there are always alternatives in planning	✗

Appendix F: Comparison of Novopay findings to EPDP findings

Novopay findings (2008/12)	EPDP findings (2016/20)	Match?
<i>Sponsor</i>		
Sponsor not capable.	Sponsor was capable with extensive past operational experience in large ICT software projects: however, this was due to chance rather than as a result of an institutional framework initiative.	✗
No assessment on sponsor capability prior to appointment.	No assessment on sponsor capability prior to appointment.	✓
Reliant on written documentation for sponsor roles and responsibilities	Reliant on written documentation for sponsor roles and responsibilities: however due to past experience the sponsor was personally aware of the roles and responsibilities.	✓
Sponsor was held personally accountable for the project failure: punishment was the action.	The Sponsor was very aware and accepting of their accountability for program outcomes.	✓
Selected and appointed due to senior organisational role and line responsibility for the project.	The Chief Executive personally undertook the sponsor role due to their accountability for outcomes, and also due to their past experience in the role.	✗
Sponsor had to undertake role on top of existing substantive role, which was already excessively busy.	Sponsor undertook role on top of existing substantive role: however, argued this was manageable due to support structure implemented.	✓
Sponsor was provided with no training.	Sponsor was provided with no training nor was any offered: however, sponsor stated they did not seek this due to their own past experience.	✓
A support model existed but failed to provide quality advice to the sponsor.	The sponsor implemented a successful, largely internal, and independently organised, support structure. However central assurance and support was variable in quality and effectiveness.	✗
<i>Project management capability</i>		
MoE not capable	The EPL identified at the outset that both capability and capacity to	✗

Novopay findings (2008/12)	EPDP findings (2016/20)	Match?
	undertake the EPDP was missing, hence they embarked on a pre-emptive strategy to successfully address this.	
No assessment on capability prior to appointment (even though this was a requirement in the institutional framework)	Refer above; however, this was as a result of an EPL initiative not as part of a formal institutional assessment.	✘
Not an organisational priority to address	The EPL Chief Executive made it an organisational priority to address the capability and capacity issues.	✘
MoE had to act independently to address capability issues	EPL had to act independently to address capability issues.	✔
PRINCE2 was used as a 'tick in the box' but did not aid capability	The use of and training in SAFe methodology was seen as an important tool in the successful implementation of the Agile delivery within the EPDP.	✘
Project team a mixture of internal and external/contract staff	Project team a mixture of internal and external/contract staff	✔
A skilled Project/Program Director was not engaged; the role was undertaken by an internal resource without the capability	It was made a priority to source a highly skilled and experienced external resource to fill the Program Director role.	✘
Budget constraints influenced the ability to get the A-Team; resulted in focus on capacity instead of capability.	Sourcing the best resource was made a priority and not influenced by imposed cost limits.	✘
Vendor management capability was particularly poor.	Vendor management was simplified and aligned to each product. It was stated to have worked well and was focussed on a 'win-win' arrangement.	✘
Forecasting	Forecasting	
Capability did not exist internally – sourced externally but poorly undertaken.	The original forecast in the DBC has proven to be inaccurate.	✔
Up-front forecast for full project required.	Up-front forecast for full project required: this continued to negatively impact on EPDP throughout.	✔
Up-front forecast seen as a major contributor to Novopay problems	Assessing EPDP outcomes against the DBC forecast, which bore no relationship with the Agile approach	✔

Novopay findings (2008/12)	EPDP findings (2016/20)	Match?
	implemented, has caused ongoing issues.	
Novopay planners did not know what was involved yet prepared a forecast anyway	The EPDP DBC planners did not make correct assumptions for the future tasks. However, if considered as forecasting progressively in the Agile delivery method, the forecasting was relevant and improved at every cycle.	✗
No standard forecasting/method; used 'workshops' run by a consultant	The DBC methods are unclear. However, for the Agile delivery, the iterative review, and reforecasting cycles were effective and part of the methodology.	✗
The forecasting (full-up front) described as a 'nonsense' and 'impossible'	The requirement to originally forecast in full up front and be approved on this was perceived to be a 'waste of time'.	✓
The assurance process was poor and ineffective	The assurance process was perceived to have been effective, but this was largely due to independent and internally applied processes.	✗
Central agency capability to assurance and advice was poor	Central agency capability to assurance and advice was perceived as variable.	✓
Customisation not factored into planning/forecast hence impacts excluded	The impacts of the Novopay customisations were well known by EPDP who implemented strategies remove some of these complexities for future support.	✗
Planned organisational change did not happen, the solution was instead customised	Organisational change, via schools and EPL service centre adoption of the new products, was central to EPDP planning. It has proved to be successful.	✗
Contract management was poor and led to major project issues	Contract management was effective, aided by the simplification of the contractual arrangement.	✗
MoE took a commercial and aggressive stance with the vendor, rather than a collaborative partnership where both win	The vendors were seen as an integral part of the EPDP team and treated as such.	✗
Talent2 contract was long term and there was so much unknown when this was negotiated	Contracts were largely based on the provision of services on a time and	✗

Novopay findings (2008/12)	EPDP findings (2016/20)	Match?
Lessons learned were included in planning, however they were largely repeated	material basis for each deliverable: no longer than 12 weeks in duration. Past lessons, particularly Novopay were included in planning documents but also in the program culture. Key past mistakes were not repeated. The iterative real-time learning aspect of Agile was also perceived as key.	
There was no evidence of seeking any ‘outside view’ as part of planning/forecasting	It was argued that the external experience in Agile bought into the program, combined with the progressive planned/replanning and reforecasting of the progressive deliverables, provided that outside perspective based on their extensive past experience and then internal learning from each progressive stage.	
There was a failure to, or at best an underestimation of, organisational factors as part of forecasting	Whilst there was consideration to organisational aspects initially in planning, there was a perception that Agile assisted by progressively identifying and addressing with each deliverable.	
Financial management capability for large ICT project was missing	It was claimed that via the use of a specialised financial manager the project finances were managed well. The issue was not within the project but trying to explain Agile financial management to central agencies and gaining acceptance of this.	
Project argued on a ‘urgent’ replacement basis rather than as part of a long-term asset management or portfolio of works program	EPL intend to treat the EPDP suite of products as assets and manage appropriately.	
Novopay was only planned as a large ICT project, no alternatives seem to have been considered	The EPL did not undertake the EPDP as a single large ICT project, but rather as a series of 21 smaller progressive projects.	