Corporate Improvement in Project Management: A Design Thinking Approach Investigating an Adaptable Model

A Thesis submitted by

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ABSTRACT

Organisational portfolio, program and project management (OP3M) is integral to achieving efficient and effective business outcomes. Despite this, OP3M is often overlooked or applied in a piecemeal way. This problem is exacerbated by factors such as non-alignment with business procedures and management, a lack of expertise in change management and benefits realisation management, and poor work-based targeted professional development programs including a lack of effective succession planning, leadership strategies and cultural competence. These problems arise because business improvement strategies generally do not incorporate the concept of OP3M and, as a result, improvement is often only applied at the project level. These degrees of separation do not reflect an integrated approach, resulting in continued program and project failure, with planned business outcomes either not realised or achieving less-than-optimal results. This study uses a mixed methods approach that incorporates design thinking to underpin model analysis, prototyping and testing, and systems thinking to assist with the development of the model's structure. The study's literature review examines existing maturity models for portfolio, program and project management (P3M) and identifies specific management functions that might be incorporated into the components of a prototype model. The study sought a broad range of views from relevant practitioners and experts through surveys and interviews and demonstrates how a prototype model is being applied in private and public case studies in Australia, Malaysia and Sri Lanka. The centrepiece of the improvement model is leadership, teams management, and succession planning that is enabled by cooperative intelligence: putting people first. The model accentuates the need for behavioural and attitudinal change resulting in OP3M cultural competence. The study concludes with an adaptable combined improvement model for OP3M not previously considered or formalised in the literature. Its results provide guidance for business managers, scholars and practitioners involved in the design, enhancement and application of the P3M Corporate Improvement Model (P3MCIM).

CERTIFICATION OF THESIS

I James Murray Gough declare that the PhD Thesis entitled Corporate Improvement in Project Management: A Design Thinking Approach Investigating an Adaptable Model is not more than 100,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references, and footnotes. The thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Date: 14July 2022 re-submitted after Examiners reports January 2023

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LIST OF ABBREVIATIONS

AIPM - Australian Institute of Project Management

BAU – Business as Usual

EPMO – Enterprise-wide Program or Project Management Office

GAPPS – Global Association of Project Professionals

IPMA - International Project Management Association (Europe)

PMI - Project Management Institute of the United States of America

OPM3 - Organisational Project Management Maturity Model

OP3M – Organisational Portfolio, Program and Project Management

P3M - Portfolio, Program and Project Management

P3M3 - Portfolio, Program and Project Management Maturity Model

PHC – Project Health Check

PMO - Program or Project Management Office

PMMM – Project Management Methodology Matrix

ROI – Return on Investment

CHAPTER 1: INTRODUCTION

1.1.   INTRODUCTION

Timely business improvement models are crucial for both public and private sector organisations, according to Kerzner (2017a), who suggests that it is essential to demonstrate improvement as markets and contexts change. In a similar vein, Albrecht and Spang (2016) point out various methodologies developed since the late twentieth century that have been employed to improve business management. These business models have included Total Quality Management (TQM), Model-Based Integrated Improvement Methodology, Super Methodology, Benchmarking Methodology, Deming's PDCA (ISO 9001), Six Sigma (DMAIC and DMADV), Lean Management, Lean Six Sigma, Agile Management, Business Process Re-engineering, Theory of Constraints (TOC), Just-In-Time, Kaplan and Norton's Balanced Scorecard, Kaizen, Kanban, Hoshin Planning, Design of Experiments, Process Excellence, and Digital Twin Simulation on Business Process Improvement (MOSIMTEC).

The models have been complemented by a corresponding range of project management maturity models and have been analysed and researched by the following prominent authors: Cooke-Davies's (2007) Project Management Maturity Models, Khoshgoftar's (2009) Comparison of Maturity Models, Crawford's (2011) Fitting Project Management Capability to Strategy, Christoph's (2014) Project Complexity as an Influence Factor on the Balance of Costs and Benefits in Project Management Maturity Modelling, and Backlund's (2015) Maturity Assessment: Towards Continuous Improvements for Project-based Organisations. These authors are critical of the connection between the strategic intent of business models and their integration with project management models.

Other commentators have also expressed concern about the use of project management models to improve business management. Simmert et al. (2019) caution against selecting a project-based business model because it can neglect the legacy of policies and processes already being implemented in enterprises. The authors highlight the 'importance of collaboration between managers in developing a business model project that considers existing processes' (Simmert et al. 2019, p. 466). Simmert et al. (2019) also suggest that designing a business improvement model that is project-focussed can enable companies to embed continuous and recurring business improvement from a practical perspective, and without expensive external consultancy support.

Similarly, as internal and external characteristics constrain a maturity model's applicability in its standard version, Röglinger, Pöppelbuß and Becker (2012) maintain that project-based maturity models need to be contextualised. Furthermore, they suggest that these models serve a comparative purpose if they allow internal or external benchmarking. In an earlier phase of this discussion, King and Kraemer (1984), cited in Röglinger, Pöppelbuß and Becker (2012, p. 230), were 'critical of maturity models that focus on the sequence of levels toward a predefined "end state" instead of the factors that influence evolution and change'. Additionally, McAdam and Bailie (2002, p. 993) maintained that 'there must be alignment between a broader range of eclectic performance measures captured longitudinally against a business strategy conducted over points in time outside the project cycle'.

These perspectives are diverse but appear to seek to achieve similar outcomes focussed on project-based maturity models aimed at business improvement. This study, therefore, seeks to investigate a diverse range of processes and mixed measures for improvement in portfolio, program and project management (P3M), aligned with business improvement as a practice-based approach. As such, it will consider the business context of organisations and their combination with P3M, in order to resolve current disparities by presenting a consolidated approach to organisational project management (OPM).

1.2 BACKGROUND

According to Jugdev and Thomas (2002) and Cooke-Davies and Arzymanow (2003), Australian organisations used a range of project management maturity models to measure the level of management capability for P3M in order to gain business improvement. The models were primarily used to assess and improve performance and capability against pre-ordained criteria. As an example, the Australian Department of Finance mandated the use of the Portfolio, Program and Project Management Maturity Model (P3M3) reporting for all departments, especially for ICT divisions. This approach was adopted during 2011-2014 and subsequently drew considerable criticism from (Young, Young & Romero Zapata 2014). The authors identified a range of weaknesses and concluded that agencies should focus on program management and selective areas of portfolio management to increase their capability to realise benefits from ICT investments. This recommendation was a departure from advice at the time that emphasised project management and ignored portfolio and program management or indiscriminately recommended that all areas (of an external model) be targeted for improvement. The report further suggested the P3M3 model had no formal organisational

change management approach incorporating a targeted methodology to bind and embed internal change into P3M capability.

P3M has been well documented in both knowledge and competency standards by Crawford (2013) and Crawford, Ba and Stretton (2018). National and international competency standards for P3M have been published by national project management institutes, such as PMI (USA), AIPM (Australia), IPMA (Europe) and APM (UK). While originally these standards focussed on skills and knowledge essential to the achievement of business and project objectives, recent revisions have seen them align more closely with curricula and learning outcomes. Consequently, maturity models that employ project management are well defined but vary considerably according to Aubry et al. (2012), Backlund, Chronéer and Sundqvist (2014) and Grant and Pennypacker (2006). The authors acknowledge that the competency standards and maturity models are no longer structured and managed to plan in order to deliver business results at an organisational level. Similarly, Backlund, Chronéer and Sundqvist (2014) maintain that the conventional project cycle (on which the standards are based) does not include return on investment analysis and reporting, change management, business benefits realisation, longitudinal empirical studies, the impact of external influences and continuous improvement. As such, there is dissonance between business improvement models and a project management approach to achieving these.

The problem is exacerbated by organisations that view project management methodologies as the panacea for all project management considerations. The following methodologies have been prominent in Australian organisations (percentage distribution cited in KPMG Report 2017): PRINCE2 (54%), ISO 21500:2012, Agile, based on SCRUM (43%), APM 2012, Lean Six Sigma, PRAXIS, PMBOK, 7th Ed 2021 (30%) and inhouse methodologies (52%). It is deciding which methodology to use for which project stream and type to achieve a given outcome that is a crucial step that may be influenced by: 'the maturity of the organisation and its business processes that support project management, presence of existing methodologies, methodologies used in the supply chain, customers or clients, degree of customisation necessary, management skills available, the agility of the organisation and the stability of requirements' (Pearson, Larsen & Gray 2019, p. 52). In other words, methodology selection is of organisational concern and requires fit-for-purpose and context assessment and a range of several factors that influence capability.

Furthermore, Rutherford (2007) stated that methodologies and maturity models do not adequately reflect the skills and performance required for the sometimes chaotic environment of project management. In particular are the skills needed to address sudden and unexpected

changes which create chaos within the project environment, such as clients declaring bankruptcy or prearranged goods or funding not materialising. The author contends that any professional development programs for P3M must be linked to business strategies and outcomes (further discussed in Chapter 2) in order to deal with change whilst remaining focussed on the principal objective. Both Rutherford and Dombkins (2007) discuss the influence of complexity on the project team and the considerable effect that this has on the P3M environment. In addition, despite the continuous effort to improve P3M processes, such as introducing new and modern methodologies in organisations (e.g., Agile, Scrum, Kanban), project success rates have not significantly improved over the years (PMI Pulse of the Profession 2015; 2016; 2017; 2018; 2019; 2020), discussed in Chapter 2.

The amount of effort that has been put into advancing project management practices bears no relation to realised changes in project success rates, according to Glowasz (2020). In some industries, he states there is no improvement (e.g., Olympic Games consistently overrun their project budgets). In rethinking current practice, Svejig and Andersen (2015, p. 278) assert that six overarching categories have emerged that affect project management: 'contextualisation, social and political aspects, rethinking practices, complexity and uncertainty, the actuality of projects and broader conceptualisation'. The authors note that a more comprehensive organisational approach is still needed to address project and business improvement. This study aims to explore what a more comprehensive organisational approach may look like in practice.

Additionally, Stretton (2017) suggests that a business planning framework, including strategy execution, the achievement of planned business outcomes, and the realisation of ensuing benefits, are crucial in informing P3M practice. However, the author affirms that other initiatives and functions are necessary to realise these outcomes and advantages. Stretton (2017) emphasises that project management ought to be incorporated into a broader contextual framework. This stance is further corroborated by Coelho Viana and de Miranda Mota (2016). They emphasise the importance of integrating organisational decision-making to underpin the institutionalisation of project management appropriate for organisational context and strategies.

In reconstructing the concept of corporate project management, Morris (2013) articulates the need for a broader, more integrated view for managing projects. He highlights the need to include addressing strategy and governance, context, technology, commercial and supply chain issues, and control. He also emphasises that 'the focus on people management dramatically outweighs the benefits of seeing project management merely as a control-driven, delivery execution management function' (Morris 2013, p. 5).

As a result, from the viewpoint of a practitioner in this field, the researcher has discovered that the P3M standards and maturity models are not contextualised and integrated throughout most organisations to meet, or at least be aligned to, strategic and operational management needs. More often, the P3M standards or methodologies adopted by an organisation require conformance, and their imposition is likely to interrupt or differ from the working environment and standard work practices. This study examines the current practice of P3M approaches with operational management and, for example, change management, business benefits realisation, cross-cultural competence and professional development.

The problem is hindered by a lack of executive/sponsor management and leadership. In a survey of executive managers, Chandler and Thomas (2015) found that in current practice there is no significant relationship between the prevalence of the sponsorship role and project management value outcomes; indicating that sponsor leadership is lacking. In support, McMahon (2016) stressed that a leadership regime in the project environment is necessary but requires significant development. Whereas Pasian, Sankaran and Boydell (2012) state that the challenge to project management maturity theorists is to recognise the possibility of project management maturity in an environment characterised by undefined project elements and the requirement for greater flexibility in their management and leadership. Hence, from a practice perspective, this study contends that a holistic, adaptive, integrated model for sustainable P3M rarely exists, or when it does, there are significant missing factors.

This initial overview of key issues and associated illustration of the problem indicates that there has been no comprehensive corporate improvement model focusing on systemic, cultural change concerning P3M. An integrated assessment and management model incorporating change management and competency development and the factors mentioned above is rarely evident. This study seeks to address this problem by examining selected current models and proposing a flexible and adaptive 'project management model' incorporating projects, programs and portfolio management that integrate with business operations delivering capability in OPM and, thus, sustained performance against strategic and business outcomes.

The problem formulation and rationale justifying this study are also gleaned from the researcher's own experience in industry, across the private and public sectors over several decades, and the problems many client organisations face in addressing OPM challenges. It represents a practitioner's view. The study will attempt to explain the stigma associated with the conventional understanding of terms used in the OPM field, and how a broader, more comprehensive, contextualised approach to language inclusive of new complementary disciplines can influence the concept, structure and application of an improvement model.

1.3 PROBLEM STATEMENT

As previously mentioned, with an ever-changing business environment, organisations need to change and improve products and services to meet market demands (Kerzner 2017a). Change programs seeking to address these challenges are usually driven by business process reengineering or project management maturity assessments which are not integrated and benefits not realised in a whole-of-business perspective (Albrecht & Spang 2016). Program and project failure rates are reported as still high in successive Pulse of the Profession reports, (PMI 2017; 2018; 2019), discussed in detail in Chapter 2.

The problem appears to be that OPM needs to combine with business management improvement for optimal benefit. But the two are rarely practised simultaneously in an integrated fashion.

To address the problem, the study first sought to establish current knowledge related to the problem by conducting a systematic literature review (Chapter 2) and rigorous research design (Chapter 4) that included two surveys and interviews with prominent experts and leaders in the field. It also used case studies across both the private and public sectors in an attempt to illustrate examples of evidence-based practice.

This study notes the difference between project management and OPM. One of the fundamental problems with using the term 'project management' is that it has been used in the more traditional sense relating to a single project, whereas in the context of national and international standards, there are at least three levels: portfolio, program and project management (P3M), that when integrated, serve as the means of conceptualising, designing, developing, implementing, delivering and concluding a range of programs and projects that benefit the outcomes (business, development and change) required for an organisation. Thereby, this study is concerned with OPM, noting that certain perspectives may relate to project management. The study delineates these differences where necessary. However, the study also includes related disciplines that affect attaining a well-rounded OPM regime, such as benefits management, change management, anticipation management, uncertainty management, business governance, professional development, cooperative intelligence and leadership strategies.

1.4 OVERVIEW OF STUDY

This study has been organised in the following sequence of chapters:

1. Chapter 1 introduces the study, background, and the problem statement
2. Chapter 2 provides a national and international literature review of OP3M, and the research questions
1. Chapter 3 contains a prototype model for two types that cater to organisations with no PM system and those organisations that already have a P3M system but seek improvement
2. Chapter 4 describes how a mixed methods research methodology incorporating a two-phased explanatory approach (QUAN > QUAL) has been used for this research and considers a design thinking approach
3. Chapter 5 explains how five case studies were applied to the previous and current models
4. Chapter 6 incorporates the results from the surveys and interviews
5. Chapter 7 discusses results from the surveys, interviews and case studies
6. Chapter 8 explains the revised types of the model and suggests a combined model
7. Chapter 9 summarises how the research has made an original contribution to the field of OP3M and the personal and professional development of the researcher, including a review of the research questions to determine whether the study has met the required outcomes. Limitations of the research and further research are also discussed in this chapter.

CHAPTER 2: LITERATURE REVIEW

This chapter addresses issues critical to organisational maturity in OP3M by exploring literature that may provide essential components of a corporate improvement model. It also suggests how the contemplation of prominent knowledge contributes to the development of a model that provides a link between business and P3M managers. The chapter is arranged as follows:

2.1 Preface to the Literature Review

2.2 Background to the Problem of Organisational Improvement

2.3 Context of Organisational Project Management (OPM)

2.4 Project Management Maturity Models Employed in Australia and Internationally

2.5 Critical OPM Language

2.6 The Current Status of Organisational Project Management (OPM) in Australia and Internationally (A Change in Culture)

2.7 Business Strategic Planning (the Portfolio) and Governance for OPM

2.8 Pipeline of Programs and Projects

2.9 Benefits Realisation Management (Longitudinal)

2.10 Enterprise, Portfolio, Program and Project Management Office (EPMO & PMO)

2.11 Anticipation and Uncertainty Management

2.12 P3M Talent Management Pathways and Succession Planning

2.13 P3M Reviews and Performance Management: KPIs Linked to Maturity Assessment

2.14 Change Management: Strategy for OPM Improvement

2.15 P3M Leadership for OPM

2.16 Cultural Competence in P3M and OPM (OP3M)

2.17 Interconnecting the Research Themes

2.18 Design Thinking: Conceptual Framework for Developing an OP3M Corporate Improvement Model

2.19 Research Questions.

2.1 PREFACE TO THE LITERATURE REVIEW

Randolph (2009) describes key issues that should precede a literature review, including the review goal, perspective, coverage, organisation and audience. He cites (Cooper 1998), who

suggested that these considerations are essential elements as a preface to undertaking a study. Cooper's taxonomy provides an approach to this literature review.

2.1.1 REVIEW GOAL

This review aims to consolidate findings on current approaches to improve organisational project management drawn from a range of national and international sources. The study recommends using a holistic model for corporate project management. It also introduces new concepts, management disciplines and language for consideration. The study will critically analyse previous research, identify central issues, and illustrate a line of argument for corporate improvement in project management. This dissertation aims to advance the view that a new model with new concepts and techniques is needed and can be readily adapted and applied.

2.1.2 PERSPECTIVE

(Cooper 1998) stated that review authors often reveal their own pre-existing biases in primary qualitative research, and he discusses how these might affect the review. To some extent, this may be evident in this review, given the researcher's background as a commercial practitioner and consultant. Cooper also suggested that, as is often the case in primary quantitative research, authors attempt to take a neutral perspective and present the review findings as fact. As such, some bias may occur in the selection of material for the qualitative review. The author suggests that this depends on whether the review employs quantitative and/or qualitative traditions. However, this dichotomy can be overcome using a mixed methods approach (see Chapter 4 Methodology and Methods). This study will involve a mixed methods and design thinking approach and its findings will strike a balance between qualitative and quantitative research.

2.1.3 COVERAGE

Deciding how wide to cast the net is a critical step in conducting a review. Cooper proposed four coverage scenarios: an exhaustive review, one with selected citations, one with representative samples and one with samples that are representative of the study population, and one where purposive samples are central or pivotal to the topic. In this study, the researcher intends to adopt a combination of the second, third and fourth approaches; focusing on samples that relate to components of an improvement model. These approaches suit a mixed methods model where selected citations are presented from seminal authors, books and articles.

Representatives samples from AIPM, IMPA, PMI Members exemplify most of the study population, and are central to the emerging improvement model.

2.1.4 ORGANISATION

Cooper stated that there are many formats in which to organise a review. Three of the most common are: the historical format, the conceptual format and the methodological format. This study intends to use a combination of Cooper's methods, emphasising the second and third formats but not excluding the historical significance exemplified in the three longitudinal case studies chosen by the researcher.

2.1.5 AUDIENCE

The final characteristic of Cooper's taxonomy is the concept of audience. In a study of this nature, the supervisor and reviewers of the study are the primary audience. The scholars within the specific field of endeavour (i.e., OPM) are the secondary audience. Nevertheless, this study will have an industry-based focus. It will attract a much wider audience that will provide perspectives on a model that could be potentially adopted, as appropriate, in a variety of workplaces. Although written for an academic audience, it will also cater to an executive business management-oriented group. As mentioned earlier, the researcher intends to involve a wide range of Australian and international practitioners in formulating an improvement model and proving its viability through surveys, interviews, and application to a selection of case studies.

2.2 BACKGROUND TO THE PROBLEM OF ORGANISATIONAL IMPROVEMENT

Aubry et al. (2012) suggest that there is usually no formal change management strategy incorporating methodology and people development to bind internal change in P3M capability and promote an OPM structure. The authors point out that there is no corporate improvement project and process allocated to systemic, cultural change.. This study investigates the literature that analyses current models and identifies the gap in knowledge concerning organisational performance. It also explores a range of management and behavioural disciplines targeted at corporate improvement. This analysis will result in a theoretical model (prototype). It will test the hypothesis that an integrated, more holistic model can deliver both capability in P3M and sustained organisational performance that underpin strategic and business results.

As stated in Chapter 1, the 'problem' is that the standards for P3M are not contextualised and integrated throughout organisations, especially concerning strategic and operational management levels. In other words, a holistic, integrated model for sustainable P3M does not exist; or if it does, there are significant components in OPM that are missing or not utilised. Much of the research in this literature review will confirm the 'problem' and examine crucial components to be included in a suggested corporate improvement model.

2.3   CONTEXT OF ORGANISATIONAL PROJECT MANAGEMENT (OPM)

The term Organisational Project Management (OPM) has several sub-meanings regarding how projects are managed in an organisation. In short, 'organisational project management is the systematic management of projects, programs and portfolios aligned with the achievement of strategic goals' (Project Management Institute 2003, p. 10). The degree to which this is satisfied is often referred to as its maturity. The term Organisational Project Management Maturity Model (OPM3) was first used by the Project Management Institute (PMI USA) in 1998 as a standard that would allow organisations to understand and practise OPM as a broad-based set of procedures that would underpin organisational improvement. According to PMI, an OPM system seeks to provide a range of corporate benefits for all those engaged in project management activities. In summary, an OPM system:

1. strengthens the link between strategic planning and execution
2. allows project outcomes to become predictable, reliable, consistent and correlate with organisational success
3. identifies the best practices that support the implementation of corporate strategy through successful projects
4. identifies the specific capabilities that make up best practices
5. includes best practices and capabilities for P3M
6. provides a means to assess an organisation's maturity at prescribed levels
7. provides a system that is flexible in its application to each organisation's context and needs
8. is based on P3M competency standards recognised nationally and internationally
9. draws on the expertise of a wide range of practitioners and consultants across industry
10. provides a comprehensive body of knowledge and expertise in P3M for the organisation and its industry segment.

This literature review will examine the extent to which these factors are considered within organisations, and this analysis will be a crucial element in developing a future model.

In their fifth review of project management, Cleland and Ireland (2007) acknowledge that the discipline of project management has provided a means of coping with change. There has been a growing interest in P3M as a building block in the strategic management of enterprises. They assert that project management should become the principal means of managing operational and strategic changes in contemporary profit and non-profit organisations. While they point out that growing maturity has enabled organisations to integrate project management into standard practice, these international experts warn that in dealing with change, organisations, and especially senior managers, are still inclined to view project management in terms that limit its scope and fail to link major projects with strategic significance (Cleland & Ireland 2007). The authors contend that this is a significant flaw in managerial expertise and contributes to the lack of OPM success.

As Crawford (2012) has articulated, organisations undertake projects for many reasons. For some organisations, projects are their prime business. They carry out projects on behalf of customers or deliver products to them under contract. For others, projects are how they change and improve the organisation. The author suggests that undertaking projects may be part of the organisational strategy, or they may be how the strategy is implemented. In either case, organisational capability to manage projects is a core or enabling competence, and it behoves executives to develop and retain this competence in their people (Crawford 2012). Crawford also maintains that these organisations must separate programs and projects from operations and the operational context. As such, pointing out that this division of responsibilities makes professional development priorities difficult. That is, what has the highest priority? Technical, operational or project management expertise, or a combination of each. Crawford argues that a balanced variety would be appropriate, given the individual manager's professional and business priorities and needs.

There is also interest in what effective project management encompasses and how it is demonstrated, giving rise to various generic models, frameworks and methods (i.e., best practice). The concept that one-size-fits-all is contradicted by research into the value of project management (Thomas & Mullaly 2009; Zweikael & Smirk 2011). Thomas and Mullaly (2009) highlight the importance of 'fit' (contextualisation), whereby an organisation's internal and external context determines the configuration of project management and its framework, methodologies, procedures and templates; thereby adding value. They suggest that the specific

set of processes and routines used in program/project management will vary from company to company and agency to agency according to the market's nature and the positioning or strategy of the company in that market. Therefore, the link between an ever-changing business strategy and the planning for, and conduct of, programs and projects is vital.

As indicated in Chapter 1, generic standards for the management of individual programs and projects and maturity or excellence models to assess and guide the development of organisational project management can both provide a useful starting point. However, it makes little sense for a company, government department or agency to invest in project management systems that are not directly suited to the nature of its businesses. Maturity models have been criticised for lacking an appreciation of context. Thomas and Mullaly (2009) suggest that introducing fit and contingency theory principles into exploring maturity could make them more productive and relevant. This is another issue this research addresses: contextualisation and strategic significance for program/project management.

Several studies, including Cooke-Davies and Arzymanow (2003), Crawford (2006) and Hobbs and Besner (2016), have demonstrated variations in the use of practices in the management of different types of programs and projects within a range of other markets or industries such as engineering and construction, information technology, pharmaceutical R&D, defence and financial services. While differences in practices have been identified, this information has been addressed by studies undertaken over decades. These authors suggest that there has been no empirical research linking strategic drivers with project management capability patterns and valued outcomes in these different industry sectors. This situation highlights another major issue for the development of effective OPM. Such research could potentially assist organisations in making more informed decisions about contextually applicable investments in project management capability and what P3M and operational staff need for professional development. Hence, this study highlights the need for professional development and P3M managers' needs in terms of human resource capability to support OPM.

One aspect of getting the right fit (and therefore contextualising the OPM approach) has been proposed by Cooke-Davies, Crawford and Lechler (2009) who noted that if an organisation's project management capability fits with its strategy, it will contribute strategic value. They suggest that this links both the lack of appreciation for context and the need for strategic value. They point out that each organisation will have specific strategic drivers, influencing the configuration of its structure, governance and systems, and the outcomes it will value. These strategic drivers will also affect and be influenced by the market or industry sector in which the enterprise operates. The authors also suggest that if the approach to learning a P3M

contextualised system is integrated into planned workforce professional development, it will be readily accepted. In this case, the right fit will also apply to portfolio, program and project managers, project teams and administrative staff who deal with programs and projects across the organisation.

To delineate the focus of this study from the project to the strategic level, project types such as revenue/contract-based, ICT-based, transformational change, new product/service-based, capital development-based, marketing-based will be mentioned. Regardless, they all need to fit the contextualised strategic design and be framed in a suitable methodology for their specific stream of business. Cleland and Ireland (2007) suggest that the contextualised strategic design and implementation of a P3M system and culture are arguably more complex than previously thought, as it involves: the strategic context of a project (i.e., strategic and annual business planning) and organisational design to include project management, project operations (program and project management offices, see below), interpersonal dynamics (e.g., leadership, communications, cultural elements, use of teams in unusual environments and globally), and continuous improvement (Cleland & Ireland 2007). This is a comprehensive list, and these themes will be explored by the literature review.

In a wide-ranging text with contributions from 27 prominent project management specialists, Hodgson and Cicmil (2006) comment on making projects critical in management, work and organisations. These authors attempt to articulate concerns outside the mainstream project management space with new theoretical perspectives relevant to this study, including the legitimacy of project management knowledge (Hodgson & Cicmil), project management communities of virtue (Linehan & Kavanagh), organisational change and learning (Bresnen); and problematising project management (Thomas), cited in (Hodgson & Cicmil 2006). These works stress the need to view project management within organisations differently and challenge conventional historical truths about managing projects. In short, this thesis aims to open new trajectories within research in the field of studies relevant to project structure, project performance and project management. For example, Clegg, Pitsis, Marosszesky and Rua-Polley, in Hodgson and Cicmil (2006) argue that the success of the 2000 Olympics in Sydney lay in the project team's understanding of the project in the future perfect. They saw the work to be accomplished as simultaneously past and future, as a cognitive and strategic shift that allows for a radically different conception of how projects can be managed (Hodgson & Cicmil 2006, p. 20). This study's research indicates that in improving an organisational approach to P3M, the idea of future perfect is related to established agreed benefits and measuring them outside the project cycle (Letavec 2014).

Morris in Hodgson and Cicmil (2016) emphasises how to make the management of projects critical. The author's most significant criticism of organisations is that they value improving project management practices but have difficulty getting people to pay attention to lessons learned from past projects. Morris maintains that most problems are with people issues, and following the Scandinavian School, agrees that we should bring a more sociological perspective to the study of project management (Hodgson & Cicmil 2006, pp. 336-7).

Furthermore, Morris agrees that models and methodologies of project management should not be used as definite frameworks, but as a means of managing programs and projects in their context. His treatise on reconstructing project management outlines the judgement needed for such tailoring by addressing the principles of managing projects and programs: looking at how they may be applied in practice in different ways (Morris 2013). He asserts that managers can influence and directly shape these contextual forces. Once again, this study will emphasise the need for contextualisation of program and project methods and managers' professional development that includes team building, cohesion and socialisation.

Hodgson and Cicmil (2016) conducted several "making projects critical" (MPC) workshops (2001-2016) that resulted in 'a fundamental reappraisal of many core tenets of project management theory and technique. An undertaking which posed a challenge for many whose careers are intimately connected to project management as it stands' (Hodgson, Lindgren, Packendorff Cicmil 2016, p. 478). As such, they suggest that any attempt to introduce new and different perspectives to project management will cause professional concern. In light of this, change management (as discussed below) is considered vital to making projects critical (Pollack & Algeo 2016).

2.4 PROJECT MANAGEMENT MATURITY MODELS EMPLOYED IN AUSTRALIA

Steyn, Jordaan and Pretorius (2012) state that sophisticated organisational systems and processes assist the achievement of consistent project management excellence. The authors point out, however, that the understanding of maturity is often a subjective concept; suggesting that project success is subjective, perceived and challenging to measure, and is influenced by various factors including formal project management practices, skills and competencies of the project manager and other team members, organisational culture, excellent communication, and support from senior management (Steyn, Jordaan & Pretorius 2012). They also maintain that maturity models typically have a conceptual underpinning with constituent components that

define the progressive development of capabilities and outline the processes that organisations could implement to achieve a more mature state. The authors finally emphasise that maturity improvements require a concerted effort of continuous review and reflection at an organisational management level, and that maturity models apply generically to any industry sector.

Five Maturity Models Examined. Previously introduced in Chapter 1, Australian organisations use a range of Project Management Maturity Models to measure the management capability for P3M. Discussion regarding five more prominent models follows.

2.4.1 THE CAPABILITY MATURITY MODEL INTEGRATION (CMMI)

The CMMI was first published in 1986, further developed in 1993, and more recently aligned to new principles and practice. There are five maturity levels used in the staged representation of CMMI that are common to other models:

1. *Initial*: Processes are unpredictable, poorly controlled and reactive
2. *Managed*: Processes are characterised for projects and are often reactive
3. *Defined*: Processes are characterised by the organisation and are proactive
4. *Quantitatively managed*: Processes are measured and controlled
5. *Optimising*: There is a focus on process improvement.

Devised by Crawford (2011) and the PMI USA, the model outlines the levels (above) of maturity and links with the knowledge areas for project management (functions) incorporated in the PMI (USA) standards for project management. This model allows for a thorough investigation at the project level but does not incorporate program or portfolio management assessments that later models employ. Note also that this model does not recommend an 'action plan'. An action plan will consequently only be compiled against the criteria listed in the knowledge areas. These do not necessarily address all OPM concerns and disciplines (to be discussed in this study). Nevertheless, the CMMI provided a substantial model for project-level managers and included stakeholder management.

2.4.2 PORTFOLIO, PROGRAM AND PROJECT MANAGEMENT MATURITY MODEL (P3M3)

The United Kingdom Office of Government Commerce (OGC) fostered a government maturity standard called the Portfolio, Program and Project Management Maturity Model (P3M3), aligned to the PRINCE2 methodology. P3M3 focuses on adding portfolio and program

management domains to earlier versions of the model, helping to expand emerging processes of project complexity that contribute to overall success. The maturity levels in P3M3 are, effectively, identical to those for CMMI. The model is built on seven process-related perspectives in project, program and portfolio domains and is assessed at five levels of increasing maturity. These perspectives are outlined in (Silvius et al. 2012Appendix G):

1. Management control
2. Benefits management
3. Fiscal management
4. Stakeholder management
5. Risk management
6. Organisational governance
7. Resource management.

Of note in these perspectives is the addition of benefits management, management control (at three levels) and finance management, making it more of an OPM model. Young, Young and Romero Zapata (2014) argue that one deficiency of the P3M3 model is that it 'uses a single number to represent maturity at the project, program and portfolio level. This number is the lowest score in either generic attributes or the process perspectives across each sub-model. Therefore, the single number reported is misleading and will generally report a lower level of maturity than what is present in an organisation, not only painting a poorer picture than what might exist, disregarding the relative closeness of the next higher level' (Young, Young & Romero Zapata 2014, p. 4). Another shortcoming is that the generic attributes evaluated in all three P3M3 domains are essential to improving project management maturity. They suggest, however, that it is doubtful whether these generic attributes are appropriate for program and portfolio management domains which are typically more complex than standalone project management.

2.4.3 ORGANISATIONAL PROJECT MANAGEMENT MATURITY MODEL (OPM3)

As previously referenced in Chapter 1, another widely-used model in the project management discipline is OPM3 (2008), and OPM3 (2013a). Developed by a team of volunteers from the PMI (USA) since 1998, it is suitable for organisations of any size, location or practice environment. It aims to enumerate the maturity level of projects and practices based on best practices as a methodology for assessment. Like P3M3, it sets out requirements to help develop better capabilities that underpin projects, programs and portfolios, and assists organisations in realising strategic objectives by delivering successful outcomes.

The OPM3 model supports continuous process improvement to diagnose existing organisational systems and uniquely highlights potential problems or deficiencies, including the detailed design of necessary revisions. OPM3 is explicitly aligned to the widely recognised PMBOK methodology (upon which Australian Competency Standards are based). OPM3 compares organisational activities with standardised best practices, measuring them in project, program, and portfolio management contexts by examining capabilities and related outcomes. Organisations are classified into four levels of maturity development, not five as embedded in CMMI and P3M3, for each process area in each domain:

1. *Standardise:* Structured processes are adopted

2. *Measure:* Data is used to evaluate process performance

3. *Control:* Control plan developed for measures

4. *Continuously improve:* Processes are optimised.

In commentating on OPM3, Cooke-Davies and Arzymanow (2003) stated that the basic building blocks of OPM3 are: use of best practices related to organisational project management; core capabilities that are needed to support the achievement of each best practice outcome, observable evidence that attests to the existence of specific abilities that are routinely applied within an organisation, key performance indicators (KPIs) and other metrics that provide a basis for objective outcome measurement, and pathways that identify the capabilities that aggregate to the attainment of relevant best practice outcomes.

Therefore, the OPM3 model meets many OPM requirements. However, its weakness is potentially its first claim, namely that it assumes that it incorporates best practices related to OPM and core capabilities. The research of this study is to determine whether the indicators contained in OPM3 are current and appropriate to an organisational assessment (refer to Backlund's study below). OPM3 is a sophisticated maturity model in the discipline of project management but also the most resource-intensive (Backlund, Chronéer & Sundqvist 2014). These researchers also state that current maturity models are unlikely to ever be the 'silver bullet' that one might hope for because they typically:

1. lack a well-researched and theoretical understanding of what is needed for successful project management outcomes

2. are founded on the assumption that there is an ideal path of development towards maturity that most organisations should pursue regardless of discipline area, project scope, competitive marketplace context or chosen strategy

3. must walk a fine line between over-simplification and excessive complexity.

Finally, Bento, Gomes and Romao (2019), in their study of the impact of OPM3 on project performance, state that little evidence is found in the academic literature regarding the impact of the maturity models on project performance. Nevertheless, their results show that OPM3 provided a positive contribution to project performance. Interviewees in Bento's study stated that the adoption of OPM3 brought improvements at the process level which made it possible to define scope, schedule, costs and goals to perform improvements in the stakeholder's communication more appropriately. The implication for developing an improvement model is that the P3M process is not all-important, and that a broader range of factors will determine business/corporate results.

2.4.4 4Q QUADRANT

Human Systems International (HSI), an Australian-based project management capability organisation (now owned by PMI USA), developed an assessment tool for organisational project management that states OPM is strategy execution. The model consists of five linked pillars: Strategy, Ownership, Enablers, Talent and Delivery. The "4Q" Quadrant model draws on a database of organisational material internationally allowing it the capability of being a preferred benchmarking tool for P3M. Its parts, aim to develop corporate culture (its centrepiece) and include the following assessments:

1. Assessing the documented methods and processes for managing programs and projects (Approach and Process Assessment)
2. Reviewing the reality of what is happening in program and project management (Deployment Assessments)
3. Evaluating the corporate approach to developing and training the P3M workforce (Talent Management Assessments)
4. Considering the degree of difficulty in delivery of the portfolio, conducted in multiple at business unit or divisional level (Portfolio Characterisation Assessments).

Interfacing with external environmental factors, the centrepiece of 4Q is the development of a corporate culture. Unlike the previous models, it insists on the professional development of the P3M workforce. The other three components are synonymous with prior models. Importantly, the model also assesses an extensive array of (integrated) business and program/project functions.

Of note in this model is that management is divided into: Strategy, Ownership, Delivery and Enablers. This separation puts the onus for the model on Portfolio Managers. It also means that the model is not a maturity assessment taken as a snapshot, but a model geared towards a

holistic OPM and corporate culture development. This survey's significant additions are the following functions: Strategic Portfolio Management, Success Measures, Program Management, Transition and Lifecycle Management, Team Performance, Program Management Office (PMO), Performance Management and Metrics, and Management of Behavioural Change.

Nevertheless, external consultants use this comprehensive tool as a diagnostic reporting device to establish how an organisation compares to its industry benchmark and best practice; pinpointing the practice gap. The HSI 4Q Quadrant model highlights where and how an organisation needs to improve and indicates its benefits. It does not, however, create a contextualised improvement plan to proceed. That work remains the province of preferred facilitators. Herein lies the problem for organisations. A preferred model needs to be accepted by the organisation and its portfolio managers/executives, and integrated as part of standard operational management practice with program and project managers, as noted by Cooke-Davies, Crawford and Lechler (2009). In other words, portfolio managers need to own the model as part of an organisational norm. This strategy and its effect are discussed below under Portfolio Management.

2.4.5 MANAGEMENT MATURITY MODEL (MMM)

In devising and applying the Management Maturity Model (MMM), Langston and Ghanbaripour (2016) state that maturity models function as a bridge between organisational strategy and project success. However, they maintain that it is not clear how to measure organisation-wide success objectively. Cooke-Davies (2011) highlights confusion between terms such as 'project success' (doing the right project) and 'project management success' (doing the project right), and between 'success factors' (that lead to success) and 'success criteria' (that evaluate success). Criteria/factors are often specific to project types and client objectives. Success criteria (such as key performance indicators [KPIs]) and success factors (such as core project constraints) are commonly linked, according to Langston and Ghanbaripour (2016). In any business environment, certain factors will be critical to the achievement of success. So, logically, if objectives associated with the factors are not realised, the business will fail unless project delivery is linked to organisational goals. (This topic and its relevance to a new model is further examined in Chapter 3).

Langston and Ghanbaripour (2016) had previously employed success factors and criteria to explain how successful projects might be planned and implemented. Their AIPM and IPMA award-winning model and structure for describing project integration are represented as

a tetrahedron containing all knowledge areas existing in the PMBOK™ Guide (Project Management Institute 2017a). They also include a new area of project environmental management (centrepiece) that recognises sustainability as an emerging aspect of modern project delivery (Ebbesen and Hope, 2013; Fernández-Sánchez & Rodríguez-López, 2010; Hwang & Ng, 2013), and mentioned later in this study. Langston contends that his model can be deployed to measure project teams' abilities to deliver successful performances at all stages of a project life cycle. This outcome is achieved by identifying success factors (represented by the four vertices of the model) and success criteria (defined by the edges of the model). KPIs are derived from the model to describe the relationships between success factors. They are constructed to be relevant to any project type as well as being capable of numeric measurement. Project integration management, a significant knowledge area in the PMBOK™ Guide (PMI, 2017), is intended to ensure that the right balance between all parts of a project is achieved throughout the project life cycle and is reflected in the 3D nature of the model itself.

Their 3D project integration model includes six generic success criteria (KPIs) related to project delivery success. The key relationships between the four success factors (cost, time, scope and risk) and the six success criteria (KPIs for value, efficiency, speed, innovation, complication and impact) are illustrated in Langston and Ghanbaripour (2016, pp. 68-85). This model's strength is that it is customisable, strategic, systematic, and uses a practical methodology. It is not linked to traditional rigid increments of maturity; these criteria appear relevant to developing an OPM improvement model.

2.4.6 GENERAL CRITICISMS OF THE MODELS

As summarised by Langston and Ghanbaripour (2016), one of the criticisms of applying the current models in organisations is the focus on specific project management knowledge areas rather than intangible assets which are less obvious but contribute to a mature project management capability. Intangible assets include context-specific outcomes such as customer involvement and implicit human factors including creativity, integrity and trust (Pasian, Sankaran & Boydell 2012; Backlund, Chronéer & Sundqvist 2014). But they can be included in business-related rather than project-specific indicators, according to the authors.

Another problem with many models is framework complexity; preventing potential users from implementing them based on time and cost commitment (Cooke-Davies & Crawford 2011). Crawford argues that a model should be sufficiently simple and easy to access and use (Crawford 2007), whereas, Jugdev and Thomas (2002) summarised common criticisms of maturity models as follows:

1. Primarily inflexible to change and ongoing improvements and cannot address specific areas of specialisation

2. Often orientated towards the identification of problems rather than solving problems

3. Do not consider the rapid pace of change and emerging technologies and innovative processes or practices adopted by organisations over time

4. Structured levels of maturity models do not propose sufficient detail to assess progress achievement

5. Methodologies are mono-disciplined, disconnected from practice and, at times, overwhelming

6. The models mostly ignore human resource or operational aspects.

More pertinently, Backlund, Chroner and Sundqvist (2015) suggest the following for future reviews. They contend that continuous research of the PM maturity assessment initiated at the project director level would be valuable, such as learning more about the various aspects of assessment process. They propose that it would be interesting to study how the project director (program manager) continues to assess and evaluate project manager capabilities and see how these managers handle intangible factors such as promoting a cultural change in their progression towards continuous improvement. This proposal is in line with the reasoning of Thomas and Mullaly (2009) who argue that the evaluation of organisational development requires the ability to follow up results successively.

Many different PM Maturity Models have been created, making it problematic for PM practitioners to know which model to use. Backlund, Chroner and Sundqvist (2015) believe that no single PM Maturity Model is suitable for all types of organisations and contexts. However, they suggest it would be valuable for organisations to have some guidance, such as selection criteria, on different models and their pros and cons in different PM contexts, e.g., based on the classification by Turner and Cochrane (1993). This further supports the view that an improvement model should have both practicable and value-laden components for the organisation, that are selected and agreed by both P3M and business managers.

Being critical of current models, yet offering alternatives for organisational project management, Görög (2016) introduces a broader approach to assessing project management maturity. Gorog states that the level of organisational project management maturity indicates the actual state of being prepared for implementing a portfolio of projects. The author proposes separate project management maturity assessments in terms of: single-project management maturity, program management maturity, and organisational project governance structure maturity (portfolio level). This approach concludes that both single-project and program

management assessments focus on the available process-related professionalism. At the same time, 'organisational project governance structure assessment focuses on the appropriateness of the project/program-management-related organisational governance framework' (Görög 2016, p. 1667). This valuable insight reinforces the need for an improvement model that concentrates on process improvement but requires an appropriate cross-business organisational framework for governance support. Such an approach was previously researched by Too and Weaver (2014), who stated that four elements constitute a project management governance framework:

1. Portfolio management: focused on selecting the suitable projects and programs to support the organisation's strategy and terminating those that no longer contribute to the business success of the organisation

2. Project sponsorship: providing the direct link between the executive and the project or program manager, focused on the whole project lifecycle

3. Project Management Office (PMO): providing oversight and strategic reporting capabilities

4. Projects and program support: the practical support and management of projects and programs are the measures of an effective governance system (Too & Weaver 2014). These elements will be examined further and included in the design and development of this study's improvement model.

In most models, the highest level implies an organisation dedicated to continuous improvement (CI). However, the meaning of CI is extensive, and many organisations underestimate what it takes to get there. Pennypacker (2006) and Brookes, Butler and Dey Clark (2014) point out that more research studies are needed to examine how project management maturity relates to project performance and success. This reflects the context in which the development of this study's improvement model is explored.

Finally, PMI USA's annual survey, the Pulse of the Profession PMI (2015; 2016; 2017; 2018; 2019; 2020), features feedback and insights from over 3,000 project management professionals, 200 senior executives, and 500 PMO directors from a range of industries, and interviews with corporate leaders, PMO directors and directors of project management. Respondents span North America, the Asia Pacific, Europe, the Middle East and Africa (EMEA), and Latin America and Caribbean regions. The reports have emphasised the need for organisations to apply project management as a core skill in their business and corporate contexts, and for portfolio and program management to be prominent. For example, the 2017 report (Project Management Institute 2017b) stated that, in the 2000s, the idea of project

management as a core skill was influenced mainly by the Global Financial Crisis during which corporate governance and accountability for decisions were challenged, leading to a general re-examination of responsibility and management liability at all organisational levels. Simultaneously, as organisations strove to identify competitive and performance advantages and leverage them through improved efficiency and delivery, management models designed to assess performance and identify improvement opportunities became increasingly important. This situation led to an emphasis on P3M in corporate settings.

The PMI Pulse of the Profession report, Project Management Institute (2018) stated that business strategy and projects need to be strongly linked. The report indicated that too much money was wasted on poor project performance for many reasons. It suggested that organisations had failed to bridge the gap between strategy design and delivery, and that executives did not recognise that strategy is delivered through projects. The report also emphasised that the essential importance of project management as the driver of an organisation's approach was not fully realised.

Similarly, the Project Management Institute (2019) report stated that organisations wasted almost 12 per cent of their investment in project spend in 2018 due to poor performance. This number had barely moved over the previous five years. Moreover, it recommended that it was time to add a new ingredient to the old formula, especially given the fundamental shift in how work is done. It pointed out that an increasing number of individuals across all roles within organisations would be hired to manage a portfolio of projects. Those programs and projects would increasingly be tied to corporate/business strategy and technology.

In 2020, having undertaken interviews with 3,060 project professionals, 358 senior executives, and 554 project directors globally, the Pulse of the Profession report stated that change is as relentless as it is pervasive, and that "organisations that remain with the status quo are not treading water but sinking" (Project Management Institute 2020, p. 3). The report, considered as an essential business asset, highlighted that change happens through projects. The report emphasised that organisations undergo a fundamental paradigm shift where projects are not adjacent to operations but rather instrumental to how work gets done and problems are solved. The report suggested that it is the portfolio of programs and projects that disrupts, innovates, expands and thrives. It points out that 'the organisation is its projects - led by a variety of titles, executed by a variety of approaches, and focussed unwaveringly on delivering financial and societal value' (Project Management Institute 2020, p. 2). It also emphasised that leading-edge organisations adopted three tenets: 'ability is agility, technology rules, but people

influence results, and it is a project leader's world where project professionals require tried and true skills mixed with emerging ones' (Project Management Institute 2020, p. 7).

Considering these issues, this study proposes developing an improvement model for P3M that can be used within organisations and businesses that is robust, dynamic, change-oriented and systemic, but firmly based on managers' strategic direction and professional expertise in OPM. This approach addresses the problem, previously stated, that organisations need to link OPM with business operations and management. A critical step in developing expertise is the use of language that is common, context-driven and organisationally acceptable.

2.5   CRITICAL OPM LANGUAGE

As described in Chapter 1, one of the fundamental problems with using the term 'project management' is that it has been used in the more traditional sense; relating to a single project, whereas in the context of national and international standards, there are at least three levels: portfolio, program and project management. This study contends that a more appropriate term should be used, for example, organisational portfolio, program and project management (OP3M) or enterprise project management.

The use of project management language across an organisation can pose problems. Therefore, deciding on a common idiom will affect the intended OP3M culture. A valuable reference for commonly used terms is the Australian Defence Report into a strategy for project management (Australian Defence Force 2012). It outlines key terms operating in the project management space. These include general management, traditional project management, and systems thinking, including systems engineering and complex project management. Using this terminology can provide an organisation with a far more accurate view of how programs and projects are managed. Although cited in a defence context, these explanations are commonly used in Australian public and private organisations. The following discussion provides a general description of some of these terms to determine what could be employed in an OP3M improvement model.

2.5.1 GENERAL MANAGEMENT AND TRADITIONAL PROJECT MANAGEMENT

The Australian Defence Force (2012) report points out that general management and traditional project management have developed concurrently and possess similar approaches to certainty. It suggests that general management is based on defined processes, structures and

mechanistic systems, and focuses on ongoing organisations. It states that organisational architecture, business process, long-range planning, and tools such as Six-Sigma are based on project stability and certainty. It suggests that, over the past decade, the failure of strategic planning and the increased rate of environmental change have brought these assumptions of certainty under increasing pressure. In response to these phenomena, it proposes that, while still maintaining its philosophical foundations in certainty, the concept of general management has evolved to stress the importance of leadership, emotional intelligence, empowerment, communication, alignment, and teams to provide greater flexibility and responsiveness. The report also suggests that traditional project management has followed general management and incorporated similar criteria into traditional project management competency standards (see the explanations below). In response to these changes, the concurrent development of general management and traditional project management has established a significant overlap between traditional project management and general management. However, the report maintains that general management has not embraced either systems engineering or systems thinking.

The report also suggests that traditional project management has been based upon relative project certainty in project scope and context (environment). This means that traditional project management was initially based on three outcomes – time, cost and quality – with trade-offs between them. It points out that traditional project management's toolset has since expanded to include ten functions with matching sets of competency standards: integration, stakeholder engagement, scope, time, cost, quality, risk, human resources, communication and procurement; included in the Project Management Book of Knowledge (PMBoK) (Project Management Institute 2017a). It further suggests that continuing high project failure incidents have led to an international movement to expand traditional project management competencies, including general management (Global Alliance for the Project Professions 2017). These changes, it suggests, enable traditional project management to overcome the increasing failure rate of projects to ensure scope certainty that can be applied to, and implemented in, uncertain environments. The report points out that this can assist in overcoming the adversarial nature of the traditional project management paradigm. The lesson taken from this report, in developing an OP3M improvement model, is that the integration of general management and P3M management must be seamless.

Another reference for the researcher is the IPMA Competency Model developed by Vukomanović, Young and Huynink (2016). They state that traditional project management's new competency areas include a range of business and soft competencies, and suggest that this has blurred the boundaries between traditional project management and general management.

They add that, as reflected in general management, changes to traditional project management have also failed to adopt systems thinking. This topic appears crucial in an improvement model as its structure is dependent on creating a system for improvement: situation/problem analysis, design, development, implementation, evaluation and validation (discussed later in this review).

2.5.2 TRADITIONAL AND COMPLEX PROJECT MANAGEMENT

Projects can be classified according to their certainty in both scope (the WHAT) and delivery methodology (the HOW) and are classified as minor, medium or major, with attendant methodology levels (traditional project management). However, according to Ahern, Leavy and Byrne (2014), complex projects are open, emergent and adaptive systems characterised by recursiveness and non-linear feedback loops. Their sensitivity to minor differences in initial conditions significantly inhibits detailed long-term planning for these projects, and their implementation is a dynamic process. Nevertheless, they do rely heavily on complex problem-solving. According to Dombkins (2007), who introduced Australia to P3M complexity, complex projects are: usually adaptive systems of systems, have high uncertainty in scope definition, are distributed, have ongoing environmental and internal turbulence, are implemented through wave planning, and are unable to be decomposed to elements with clearly defined boundaries. Dombkins' view is also corroborated by the work of Botchkarev and Finnigan (2015) represented diagrammatically in Figure 2.1, taken from Figure 1 in Botchkarev and Finnigan (2015).
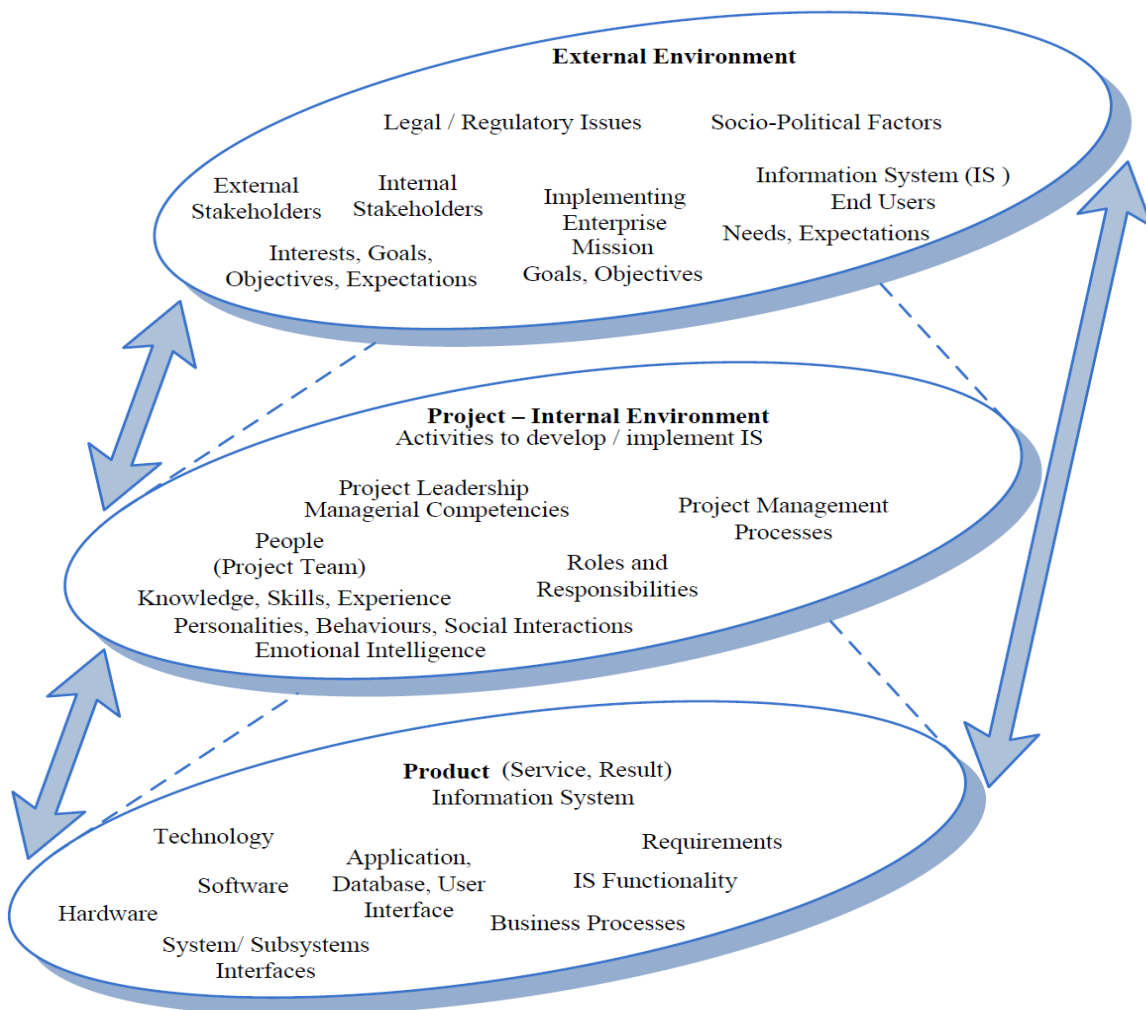
Figure 1. Project as a system of systems for complexity mapping

Figure 2.1 Project as a system of systems for complexity mapping

Botchkarev and Finnigan (2015) focused on identifying individual attributes of complexity. They acknowledge that real-life projects are prone to a single complexity or unique attributes of diverse types and combinations of complexities with unpredictable integral impacts. Interactions with other projects and shared systems can come into play, saying that their proposed framework is not a suggestion to treat projects as standalone entities. The authors point out that when practitioners assess a project, they inevitably take a snapshot of the complexities, risks, uncertainties and state of interactions, as documenting a moving target does not seem realistic, suggesting that while this snapshot may look like a standalone entity, the environments and any interactions' potential dynamics are also considered. Botchkarev and Finnigan emphasise that users of the framework should identify each of the complexity

attributes shown and analyse how they interact within their specific projects. Consequently, these complexities can be managed appropriately. The authors maintain, therefore, that project management is a continuum. At one node is traditional project management, with its philosophy, organisational architecture, methodology, toolset and contracts all firmly based on the expectation of stable conditions and certainty. At the other node is complex project management, with its philosophy, organisational architecture, methodology, toolset, and contracts all firmly based on uncertainty and complexity.

Previously introduced in this study, p Dombkins (2007) also argues that the intersection between traditional and complex project management is a point on this continuum that he refers to as executive project management. He points out that the project manager needs to be highly competent in traditional project management, aware of the complex project management paradigm, and has developed capability in a range of complex project management competencies. Nevertheless, he reasons that applying traditional project management approaches to complex projects is counterproductive. Dombkins suggests that traditional project management focuses on detailed long-term planning, rigid structures, precise work breakdown structure definition, and elaborate control rules that drive complex projects towards failure. Dombkins concludes that although the specific path followed by complex systems' behaviour is chaotic, there are underlying patterns. The ability (competence) to understand and proactively deal with these patterns distinguishes complex, executive and traditional project managers. Of note here, and examined later by the researcher, is the ability of managers to adapt their behaviours to project situations that change (see the discussion on leadership below).

More recently, Ahern, Leavy and Byrne (2014) have asserted that the distinction between complex and traditional is not as important as developing an integrated view of programs and project management, given that the latter approach is grounded in problem-solving learning and organising. More specifically, they maintain that a project is reconceptualised to organise to accomplish a temporary undertaking with intrinsic wisdom and understanding by the organisation. This perspective views complex projects under knowledge uncertainty as 'learning organisations,' with implications for project management theory and practice. Nevertheless, they conclude by pointing out that this debate is not over, and the project world now includes new perspectives and language (see the discussion on Cultural Competence below).

2.5.3 GAPPS PROJECT MANAGEMENT COMPLEXITY FRAMEWORK AND LANGUAGE

From a more pragmatic viewpoint, assessing projects is critical when assigning project managers to oversee them. According to the Global Alliance for the Project Professions (GAPPS), some projects and programs are inherently more challenging to manage than others. They maintain that a competent practitioner tasked with planning and executing a more straightforward, less complicated endeavour may not yet be capable of handling more complex ones. GAPPS has developed an approach to categorising projects based on their management complexity. The GAPPS (2007) framework uses the Crawford-Ishikura Factor Table for Evaluating Roles, or CIFTER. The device, named after two significant contributors to GAPPS (Crawford and Ishikura), is used to differentiate project manager roles based on the complexity of the projects managed (Aitken & Crawford 2007, pp. 6-9). Therefore, using this or other models for the competency development of project managers and appointment to projects needs to be part of the corporate improvement process for OPM and introduces a new language into the project management field.

More recently, GAPPS has embarked on a Guiding Framework that excludes all traditional P3M terminology (Global Alliance for the Project Professions 2020). Called 'Getting Stuff Done' it is still a work in progress; however, it indicates how an organisation can use its terminology for P3M and not learn a 'new language'. This initiative focuses attention on the need for an improvement model to use appropriate language that suits, and aligns with, an organisation's P3M environment.

2.5.4 PROJECTS: COMPLICATED AND COMPLEX

Two case studies undertaken by Ahern, Leavy and Byrne (2014) reveal a notable difference between complicated and complex projects and the use of Complex Problem Solving (CPS) as an organisational management device. Informed by their findings (incomplete pre-given knowledge and coordinating emergent knowledge), the authors reviewed the literature (and its language) on complex projects. In respect of knowledge management as described within the traditional PM paradigm (that assumes full pre-given knowledge) and, under more recent pragmatist perspectives of PM, accepts the idea of incomplete pre-given knowledge in projects and the need for learning. Considering these findings, the authors have distinguished between 'complicated' projects that can be specified entirely in advance, and 'complex' projects that cannot be set in advance., They conclude that different modes of problem-solving learning

(and language) are involved, including complex PM as a form of organisational problem-solving. This strategy facilitates the creation of new un-specifiable knowledge at the outset and coordinates this emergent knowledge through what they call a 'common will of mutual interest' (Ahern, Leavy & Byrne 2014, p. 1372) as a distributed tacit dimension.

They claim that the term is new to the literature. It is inspired by an interaction between the case study data and the literature to represent the cooperation achieved in projects when a team spirit is successfully fostered. They suggest that this approach becomes self-reproducing as a collective will, around an interest that is mutually desired and experienced. They offer it as a self-organising process for coordinating the behaviour, hence the collective learning of project teams in complex PM settings. They conclude that leadership is the key to creating mutual interest. 'Holistically, then, the PM complexity spectrum from traditional PM to complex PM can be approached as a continuous rational domain for the management of projects when viewed as social science, like neo-classical economics, rather than applied science, like robotics' (Ahern, Leavy & Byrne 2014, p. 1379).

This approach appears vital for an improvement model. It underscores the notion that leaders need mutual organisational interest, collaboration and complex problem-solving in programs and projects, especially if knowledge is uncertain and risks of successful completion are high. The approach includes significant effort and adaptability by teams. It also emphasises that an improvement model needs to have a problem-solving capacity based on traditional and complex strategies and new supporting language**.**

2.5.5 PROJECTS AS SYSTEMS AND SYSTEMS THINKING

Several authors have endorsed the concept of systems thinking in project management. These include Lewis (1998), who states that it enables managers to extend and sharpen their project management skills. Kapsali (2011) discusses why conventional project management practices lead to the failure of publicly funded innovation deployment projects and investigates how systems thinking in project management can help projects succeed. Their key finding was that systems thinking methods provide the flexibility to manage innovativeness, complexity, and uncertainty in innovation projects more successfully. Similarly, Elia, Margherita and Secundo (2020) use a systems thinking framework to address project complexity. According to the Australian Defence Force Report, systems thinking has developed a typology that enables practitioners to select a particular project's appropriate philosophy, methodology and toolset. Therefore, a comprehensive, strategic view of the portfolio, programs and projects will determine where conventional systems should be applied and where complex problem solving

and systems thinking solutions should be considered (Australian Defence Force 2012, p. 8) . The systems thinking view of projects provides a potential powerful tool for establishing a philosophical understanding. This point will be subsequently discussed in developing a corporate improvement model in Chapter 8.

2.6   THE CURRENT STATUS OF ORGANISATIONAL PROJECT MANAGEMENT (OPM) IN AUSTRALIA AND INTERNATIONALLY (A CHANGE IN CULTURE)

OPM in Australia, which includes the term Project Portfolio Management (PPM) used by the authors below, has not been widely understood and practised, though it does seem to be increasingly accepted (Koh & Crawford 2012). Several authors indicate that Australian organisations embrace change when it concerns them (Perry 2011; Koh & Crawford 2012; Young, Young, Jordan O'Connor 2012; Kohl 2016; Young & Pasian 2016). A description of their views and others, relevant statistical data and commentary from the Project Management Institute (PMI USA) 'Pulse of the Profession' follow.

In their appraisal of PPM in Australia, Koh and Crawford (2012) state that the project management community acknowledges PPM as the coordinated management of portfolio components to achieve specific organisational objectives within a project management context in the organisation. They suggest that it is a technique for optimising the corporate returns from project investments by improving the alignment of projects with strategy, ensuring resource sufficiency, and optimising the governance method for selecting and prioritising projects or programs. They point out that organisations that do not align their project portfolio with organisational strategy and governance tend to increase the risk of running low-priority initiatives leading to critical resource shortages and investments that will not be optimised. Agreeing with Elonen and Artto (2003) and Blomquist and Müller (2006), Koh and Crawford's view is that 'the manager's roles and responsibilities in multi-projects vary, are unclear, and are characterised by a lack of resources, low levels of support or commitment, and poor information flow. This situation suggests a need to investigate and improve practices of PPM.' (Koh & Crawford 2012, p. 33).

Koh and Crawford (2012) conclude that applying PPM techniques within organisational governance provides reasonable assurance that the organisational strategy (outputs and benefits) can be achieved, however, it must be intricately linked to program and project success. PPM, therefore, can be seen as providing governance structures adopted to minimise the overall

costs in converting "input" to "output" through projects. The authors also claim that PPM presents a challenge for middle managers to manage its processes, people and practices, and suggest that PPM capability should be pivotal in planning and controlling complex projects more effectively and efficiently.

As noted above, Young, Young, Jordan O'Connor (2012) similarly describe the connection between portfolio and program management as critical in successful organisational leadership. Still, they suggest that the link between strategic and program/project results does not necessarily match. They indicate that agreed project governance is a critical dimension in achieving both program and project success. They describe project governance as a very recent development providing high-level guiding principles for top-level managers. Indeed, they highlight that organisations do not set business strategy-oriented goals related to projects and measure them. Likewise, Backlund, Chroner and Sundqvist (2015) state that organisations that mainly perform their business through projects need to improve their project management capabilities on an ongoing basis. They state that 'numerous project-based organisations seem to ignore evaluating their capabilities and instead choose to live in the present and ignore future strategic aspects.' (Backlund et al., 2015, p. 256). They conclude that there is little longitudinal connection between strategic intent and measured results. The authors maintain that this eventuality gives rise to a project organisation needing an ongoing integrated corporate improvement model (the emphasis and contribution of this research).

Backlund further asserts that some guidance (e.g., AS8016, 2010; ISO 38500, 2008) is consistent with well-accepted corporate governance guidelines. However, the author points out that these guidelines appear to be little more than an attempt to mandate organisational structures, thereby bringing project management concerns to top-level managers' attention. They further suggest that the principle-based approach provides a strong linkage between project management and top-level management. It focuses on the actions that boards of directors and managers need to assist in realising strategic goals. However, this study suggests that the authors do not reinforce how the guidelines are employed, how they form part of a portfolio manager role, and how their professional development might be enhanced with suitable educational/vocational programs and measured performance reviews (to be included in a next-generation model, see Chapter 8).

Young, Young, Jordan O'Connor (2012) also cite a handbook published by Standards Australia HB280, Case Studies - How Boards and Senior Management Have Governed ICT Projects to Succeed or Fail (Standards 2006). The guide emphasises six critical questions that

boards of directors and top managers need to address to influence projects to succeed:

1. What strategic benefits are targeted?
2. How much (organisational) change is required to realise these benefits?
3. Who has the passion and influence to drive this change?
4. How will success be measured?
5. Is the project culture right (for unexpected issues to be raised and resolved)?
6. Is the project on track (i.e., will it realise the expected benefits)?

This organisational strategy closely mirrors an intended corporate improvement model (discussed later in Chapters 3 and 8) so that organisational project management capability is a means of realising and measuring change, results, benefits and, thereby, culture.

However, by applying these questions in their investigation of the Victorian Government, Young, Young, Jordan O'Connor (2012) found that, although the proper governance was in place, its program management and project governance practices (for portfolio managers) were not focused on the realisation of strategic goals. "The focus or unit of funding was based on individual asset investments" (Young, Young, Jordan O'Connor 2012, p. 888). Therefore, they suggest that while a benefit to be realised was identified, there was no requirement to establish that benefit directly to a strategic goal. They concluded that, although the Victorian Investment Management frameworks focus on benefits and differentiate between projects and programmes, 'the emphasis is to ensure that an asset is aligned to a benefit rather than realising a benefit and there is no focus on realising higher-order strategic goals.' (Young, Young, Jordan O'Connor 2012, p. 898). This study suggests that this example raises, not only measurement of results, but the critical nature of executive leadership. This topic will be examined later in this review.

Similarly, the PMI 2016 international survey (Project Management Institute 2016, p. 3) states that, 'Executive leaders and PMO directors do not view organisational success and the benefits of project management in the same way. They have significantly disparate views about their organisation's performance when it comes to formulating strategy, prioritising and funding projects, executing strategic projects, and recognising lessons learned'. The survey found that, in practice, senior managers vie for their budget allocation and guard the results for their domain, perhaps even for an individual benefit (including monetary remuneration). As such, the survey highlighted that, while proper management guidelines may be in place, formalising results could be assisted by developing a corporate improvement plan based on an agreed model for OP3M. This issue is explored further in interviews with Australian senior managers and is addressed by the researcher later in this study.

In developing a standard for PPM, Young and Conboy (2013) attest that many industries have not mastered the art of effective PPM. They suggest that a challenge for organisations is managing a potentially diverse range of projects while ensuring that suitable projects are selected. They state that 'PPM research has gained significant momentum in recent years, with the emergence, formulation and popularity of the concept heavily influenced by industry. They point out that, in many ways, this is very positive and represents a welcome departure from much research in project management, which all too often lacks relevance to practice. However, they maintain that industry has not yet fully mastered PPM concepts in practice.' (Young and Conboy, 2013, p. 1089).

One author who does indicate how a framework might be designed and implemented is Kohl (2016), who describes PPM as providing a framework to facilitate embedding sustainability into an organisation. She indicates that using portfolio analysis allows senior leadership to select components (i.e., projects, programs and sub-portfolios) that strategically fit the organisation's vision. She stresses the importance of working towards sustainability links with the achievement of organisational strategy. Kohl indicates that this process focuses on project benefits, assessment and realignment to ensure that corporate and sustainability goals (PPM outputs) are achieved. She maintains that, 'developing a process of component criteria and assessment to promote sustainability strategy guides the processes toward alignment with the organisation's strategic vision. Supporting a portfolio process through effective organisational structure and communication helps drive sustainability into an organisation.' (Kohl 2016, p. 143). Furthermore, the author reasons that creating a body of sustainability knowledge and a portfolio process can incorporate lessons learned from earlier programs and projects, assess component impacts, and realign resources to support priority components.

Kohl also asserts that identifying a matrix of portfolio criteria (using KPIs see below) against which to assess project proposals facilitates selecting projects that deliver benefits in line with the strategic sustainability vision at the front end of the project cycle. As noted above, this process facilitates selecting material components to the organisation and aligning with long-term sustainability targets (and measured by KPIs). Kohl asserts that establishing project standards (and assessing those standards) also facilitates the communication of sustainability and business goals throughout the organisation by providing a framework that focuses project sponsors on challenges and opportunities aligned with strategic interests (Global Alliance for the Project Professions 2017). It also provides a framework to address governance issues about policies, supplier standards, a code of ethics, and compliance standards such as client and regulatory requirement thresholds. In other words, Kohl (2016) suggests that projects are

formed, realised and evaluated in a multi-dimensional business context. The researcher will be examining this concept within the context of an improvement model by analysing five case studies presented later in this study (see Chapter 6).

Kohl's analysis tracks both the importance of PPM, a process to achieve its sustainability, and its strategy and vision. More importantly, however, the author discusses goals and metrics for measurement. She cites that in many instances, sustainability-related projects begin with feel-good aspirations rather than tangible business-related metrics. Kohl suggests that while the intentions are admirable, projects with vague goals do not flourish because no one understands what constitutes a successful outcome, the organisational benefits, and their roles in the process. Kohl also asserts that, to create a successful sustainability program, precise and meaningful organisational goals must be established. A process must be agreed upon to gather data, establish a baseline, and then identify and measure KPIs.

Moreover, the author points out that goals and metrics provide project managers with a vital communication tool to convey program and project direction, demonstrate progress, and align team members' actions and behaviours. Fortunately, Kohl describes and tabulates example KPIs by 'aligning sustainable strategy and business objectives and tying sustainable objectives to metrics, targets, and projects' (Kohl 2016, pp. 308-9). In considering Kohl's work, this study acknowledges that KPIs can and should be included in a corporate improvement model's goals and metrics (see inclusion in the model later in Chapter 3). However, the problem with KPIs for strategic or project measurement is that this form of measurement must be a known and well-regarded part of the organisational culture (as discussed later in this literature review).

In addition to the governance and structural approach employed by Kohl and the PMI surveys, a quantitative study by Huang (2017) suggests a relationship between organisational project management maturity and the soft skills used by P3M staff. The perceived competitive advantages by surveyed project managers suggested 'that the soft skills of project management such as client relationships, stakeholder management and communications ability are also significant factors to consider when analysing the competitive advantages of an organisation' (Huang 2017, p. 62). The author raises the critical importance of behavioural aspects in P3M. This issue will be considered and researched later in this review, highlighted in the case studies (Chapter 5), discussed in this study's interviews (Chapter 6) and suggested for further research (Chapter 9).

Furthermore, Clegg, Killen, Biesenthal Sankaran (2018) state that PPM bridges strategy and project management. Traditional research in PPM has primarily investigated the rational, top-down and structural aspects of strategising. They say it has failed to focus on the underlying

practices triggered by the strategy and how these practices frame strategy implementation. They suggest that practice-based research provides a methodological lens to explore the reality of strategic enactment through the project portfolio. They also indicate that practice-based perspectives are under-represented in PPM research. Their paper aimed to provide an agenda for further practice-based research in PPM. To address these issues, in this study, the researcher has included five case studies that will examine practice-based research, using an indicative (prototype) model to review and discuss underlying practices (see Chapters 3, 5 & 6).

Again, the PMI's Pulse of the Profession, authored by Johnson, Blackman and Buick (2018) reinforces the view that effective project management within an organisation's strategy is critical and dramatically impacts the bottom line. It suggests that organisations that invest in proven project management practices continue to experience greater success than their underperforming counterparts. Over the past decade, the PMI has identified several global trends to help improve project performance. PMI records a 27% decrease in financial resource waste in organisations due to poor project performance since 2013. Organisations can reinvest those savings into other areas, allowing them to move faster, produce more and achieve greater success.

The findings from the 2018 report reinforce that organisations classified as champions continue to mature their project talent, project capabilities and culture. PMI states that they have higher project success rates (92% versus 32% of underperformers), enjoy more successful business outcomes, and waste significantly less money due to poor project performance - 21 times less, or only 1.4% of every dollar wasted versus 29.1% for those who ignore their project management capability. They point out that champion organisations ensure their project and program managers have the right skills to drive and navigate change in dynamic environments. These managers bring about organisational change through projects and programs and save millions of dollars by outperforming their competition. The report also states that the traditional scope, time and cost measures are essential but no longer sufficient in today's competitive environment. According to the report, the ability of projects to deliver what they set out to do—the expected business benefits—is what organisations need. When determining project success, PMI analysed levels of benefits realisation maturity as well as the traditional measures.

The report's key features indicate that organisations with actively engaged executive sponsors report greater collaboration and mutual support, better project success rates, and experience less risk. It suggests that influential project sponsors use their influence within an organisation to actively overcome challenges by communicating the project's alignment to

strategy, removing roadblocks and driving organisational change. Moreover, highly pertinent to this study, they conclude that organisations with mature capabilities can minimise risks, control costs, and are better able to adapt to changing market conditions using all approaches to project delivery -predictive, iterative, incremental, and agile - using the one that fits both program, project and organisational needs.

Conclusions for OPM

In the literature reviewed, authors noted an increase in interest by organisations and their leaders in OPM. However, this has not necessarily resulted in a corresponding actual development in expertise or a marked change in project and program results (PMI Reports 2015-2020). This also indicates that there are expertise gaps in OPM and their integration with P3M needs further research and application. Suggested solutions for improved organisational project performance will be addressed further in this chapter and developed later in this study (Chapters 3, 7 and 8).

2.7   BUSINESS STRATEGIC PLANNING (THE PORTFOLIO) AND GOVERNANCE FOR OPM

According to PMI's Pulse of the Profession Surveys, the definition of project success is evolving. Mentioned earlier, the reports suggest that traditional measures of scope, time and cost are no longer sufficient in today's competitive and dynamic environment. A project's, or group of projects', abilities to deliver what they set out to do - the expected benefits - is just as important. As such, for the first time, the PMI surveys (Project Management Institute 2015, 2016, 2017b) have examined levels of benefits realisation maturity and the traditional measures in determining project success.

Stretton (2017) suggests matching of the strategic business framework with the project cycle is typical of current thinking (as above) and emphasises the link between strategy and portfolio formulation (programs and projects) definition and strategy execution and measurement (Figure 2.2), taken from Figure 2 in Stretton (2017).
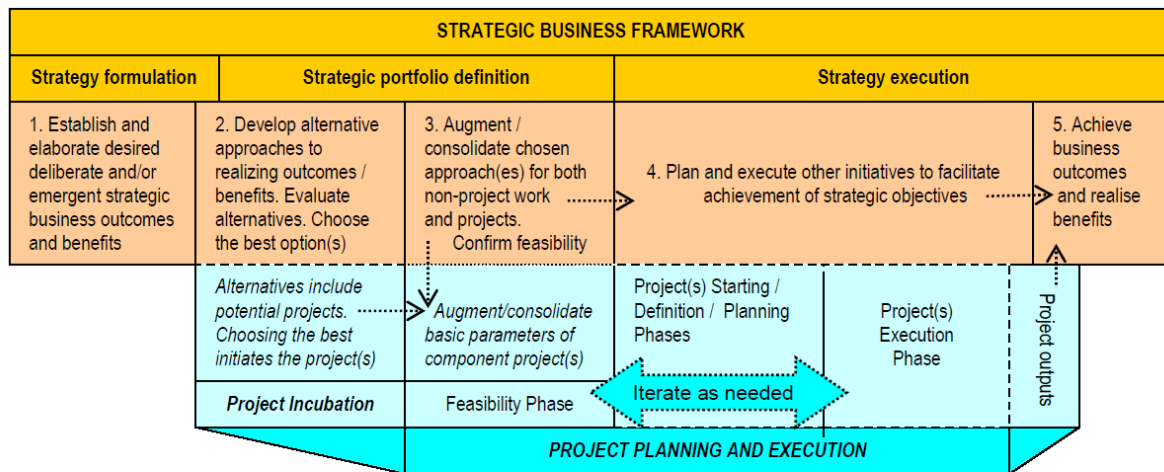
Figure 2: Project management within an extended strategic business framework

Figure 2.2 Strategic Business Framework

Stretton (2017) followed Butler (2008) in adopting these three broader headings. Butler presents quite an extensive overview of strategy formulation. The subject has received substantial coverage in the business management literature, along with models and tools and techniques for formulating an organisational strategy. By contrast, however, Butler points out that there is comparatively little practical literature on strategic execution. Furthermore, she says that organisations pay more attention to strategy formulation in practice than to strategy execution and that most organisations do not execute their strategies effectively. She then introduces a key element to link strategy formulation with strategy execution in the form of a phase that she describes as Strategic Portfolio Definition that includes project incubation and feasibility phases. This more detailed definition is commonly known as a 'pipeline' of priority programs and projects agreed upon and monitored by executive managers and is inextricably linked to the execution phase.

2.8   PIPELINE OF PRIORITY PROGRAMS AND PROJECTS

As exemplified by Figure 2.3 (Link-PM's example of a dashboard display of portfolio management software), the use of these tools is not new. However, the ability to link what they represent and determine their priority is vital for portfolio managers, executives and boards.
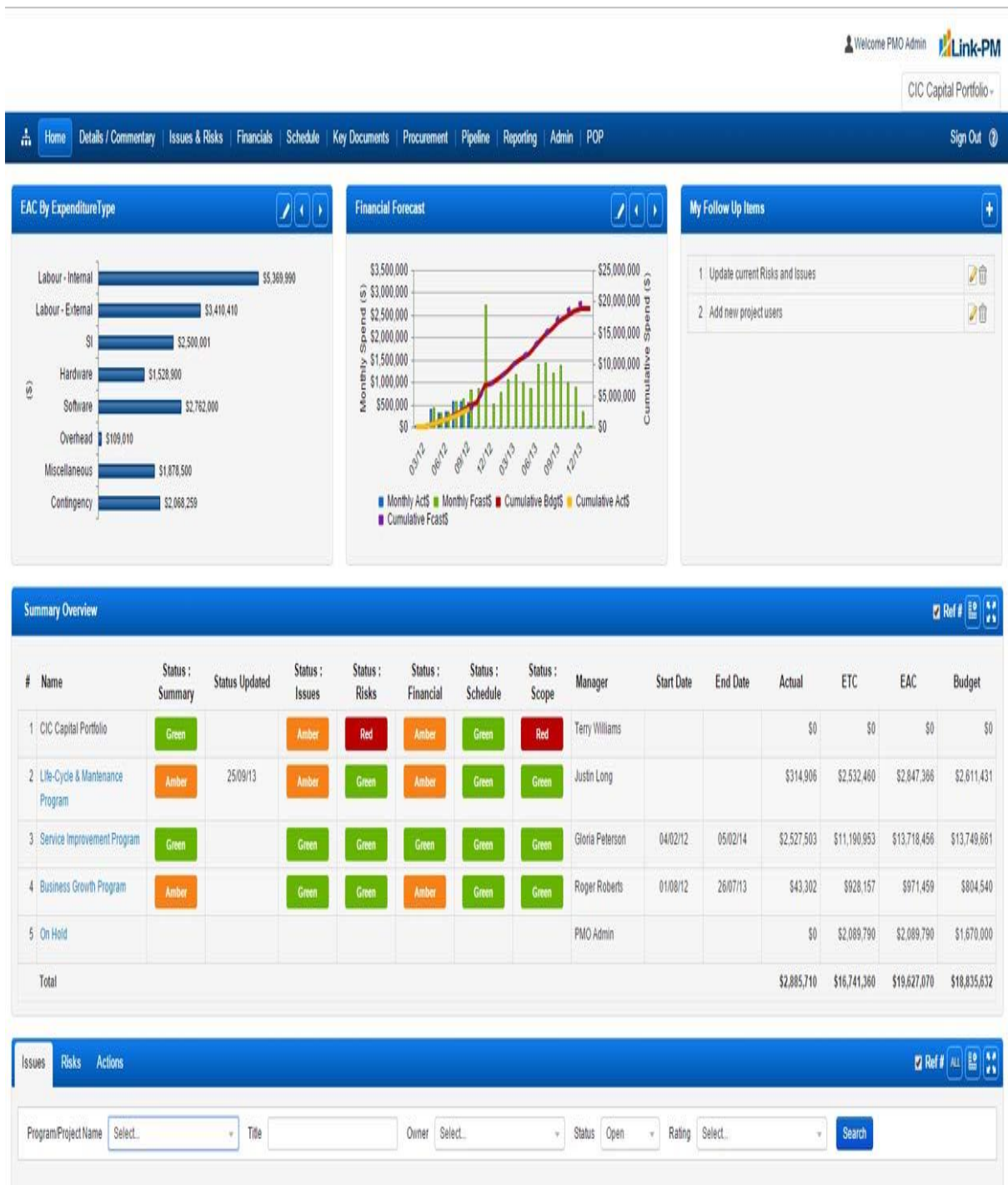
Figure 2.3 Example Portfolio of Projects Dashboard ©Link-PM (2017)

This business-oriented software represents the tools available for integrating information about the start-up to the completion of programs and projects. The solution delivers intuitive dashboards that enable portfolio evaluation to be undertaken effectively and provides visually compelling dashboards that feature information about costs, resources, and planning priorities and updates. The dashboard comes with standard financial and non-financial KPIs.

The dashboard is an organic data centre of all portfolio and project key information as a central repository of valuable program and project essentials. Its advantages include: informational integrity with timeliness, aligning ICT with strategic business goals by making better project portfolio decisions, defining actionable intelligence, delivering powerful reporting, using highly business-oriented graphs and utility panes, and improving forecasting. Importantly the toolset can be customised so that users can add business-specific indicators to their context and needs. An improvement model may include the use of such platforms.

An example of the shift to a portfolio and pipeline management of projects is proposed in Sun (2011a). Firstly, he emphasises the structure and dependencies for portfolio management, particularly the relationship of pipeline management within the model. The project portfolio cannot be 'pipelined' without resources as shown below (Figure 2.4). This suggests the need for suitably skilled personnel to be involved in the relevant projects, and these resources need to be managed both operationally and strategically.
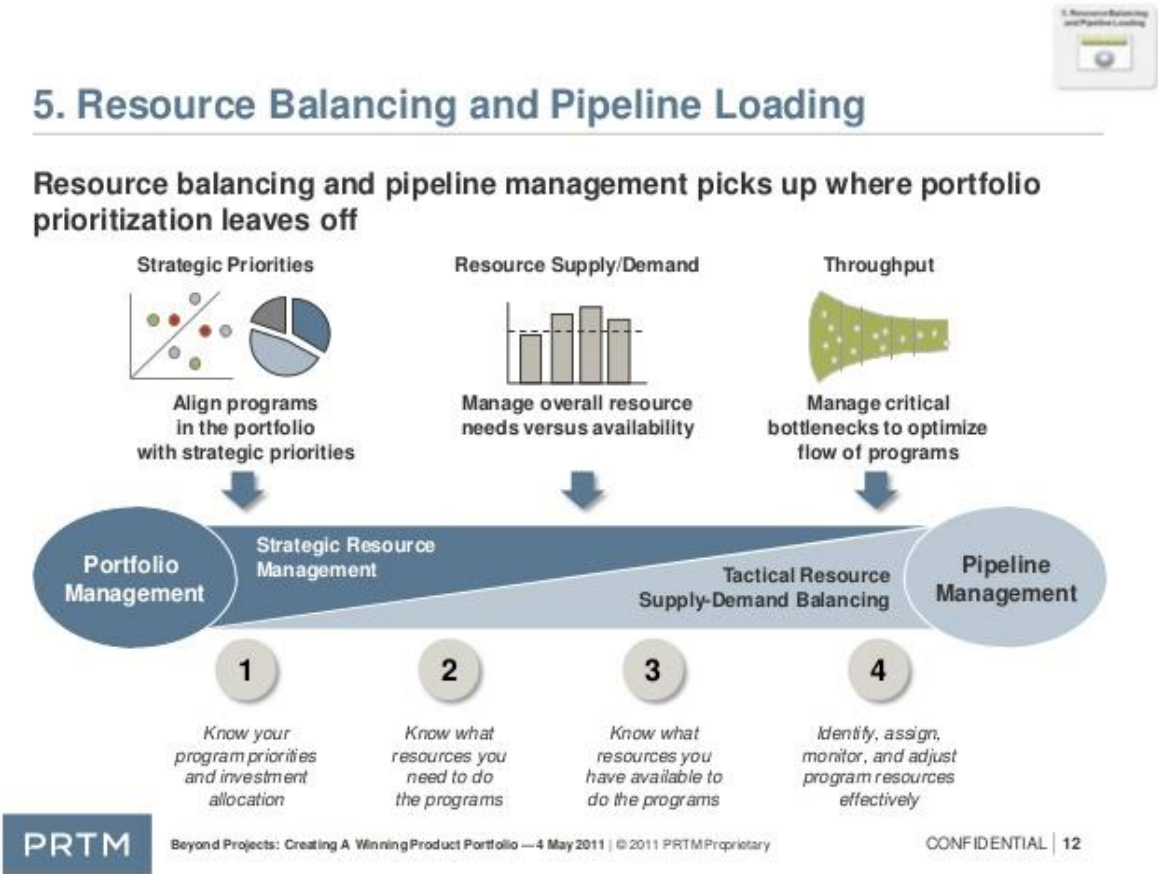
Figure 2.4 Resource balancing and pipeline loading (Sun 2011b)

This PRTM model, used by Sun (2011b), accentuates the need to resource and forecast correctly. It also suggests that the responsibility attribution should be at the portfolio or corporate level rather than the program or project level. It indicates that the need for an integrated organisational approach is fundamental to project success, and accentuates how higher-order benefits realisation can be forecast, tracked and managed. This strategy fits with the problem this study is attempting to address.

2.9   BENEFITS REALISATION MANAGEMENT (BRM)

As mentioned in the Sun model (above) as portfolio reviews, BRM is a powerful way to align projects, programs, and portfolios to an organisation's overarching strategy. However, the discipline has intimidated many because there is no single, widely accepted BRM process to follow, according to the PMI Surveys 2015-2017 (Project Management Institute 2017b). However, the PMI survey indicates that more organisations are establishing procedures for identifying benefits and monitoring progress toward achieving them throughout the project life cycle and beyond. Only 31 per cent of organisations in the PMI 2017 survey reported high benefits realisation maturity.

In the PMI 2017 report, Telstra Corporation focuses on capturing one or two critical benefits for every project. The organisation has well-formed processes to guide investment decisions to projects that will deliver a strategy. As explained by Clere, Executive Director of Capital Planning and Delivery, 'Our largest challenge is to consistently deliver projects that address the strategic issues, as per the scopes of those projects or the business requirements' (Project Management Institute 2017b, p. 8).

The 2017 PMI report also stated that Phillipe Husser, Senior Partner of Progress Direction at Michelin, was working to transform how the initial promise of benefits was delivered in his organisation. 'If we think we could increase the market sales by 3 per cent with a specific customer-oriented project, then we would design and produce the project,' he explained. 'However, the problem arises when our people identify the benefit at the beginning of the project, but, in the end, the project is either light or not delivering according to the identified benefits' (Project Management Institute 2017b, p. 9). Both these comments suggest that choosing well-aimed measurements of success linked to the organisation's strategic mission is vital. They also indicate that an agile-oriented review approach to a project is critical, especially for those projects that respond to market needs.

Letavec (2014) takes the idea of strategic benefits realisation further by explaining how value can be optimised through projects, programs, portfolios and organisational change management. Serra (2017) reinforces the strategic importance of realising benefits through P3M. Dupont and Eskerod (2016) also suggest that benefits realisation can be enhanced by integrating line managers (operations managers) as project benefit managers. This approach means that line management job descriptions need to specify this role and that line managers are suitably educated/trained (see Professional Development below).

To realise benefits and the means of doing so, organisations are becoming more dependent and sophisticated by employing a centralised control to monitor benefits management. One such model of a mechanism that suits long-term control and post-project benefits management is the much maligned and poorly practised project management office (PMO), discussed below.

2.10 ENTERPRISE, PORTFOLIO, PROGRAM OR PROJECT MANAGEMENT OFFICE (EPMO AND PMO)

Organisations can bridge the chasm between high-level strategic vision and its implementation by using a project management office (PMO). According to Gale (2010), PMOs rely on a charter and governance model to centralise practice and excellence. The author suggests that organisations provide their definition and allocation of responsibility for this unique asset. It may also contain P3M concentric systems (applications) and function as a central repository for advice, learning and coaching. In her challenging treatise, the PMO Survival Guide, Gale notes that, 'things are looking good for project management offices—at least the ones that can deliver a return on investment (ROI)" and that, "when the economy dived, those with a weak mission and no executive support were among the first on the chopping block' (Gale 2010, p. 3). This situation reflects poorly on executive management and their understanding of OP3M.

Crawford (2011) poses vital information about PMOs and their implementation. The project office, by definition, is the centre of excellence for project management. Significantly he raises the issue of the most appropriate level of the organisation to implement a project office. Less clear is the status of the organisation at which the centre should exist. This selection will depend, according to Crawford, on the degree of organisational maturity. Organisations typically have a project office at higher organisational levels than those just developing project management expertise. Typically, what we see, Crawford suggests, is that organisations with

well-established processes for project management already have competently functioning project offices at a primary level and are working on their implementation of a more comprehensive project office. Very mature organisations will likely be working on enterprise-level project offices. In each case, the assessment will determine the actions necessary to ensure success in the next step of the PMO implementation. In all the above cases, the author suggests it will become evident that the ownership for improving project management within the organisation must rest within a centralised location; usually the project management office in some form.

In his publication on business-driven PMOs, Perry (2009) provides a range of practical insights, techniques and case examples to ensure PMOs' success. The contributors in his study discuss and exemplify how PMOs: solidify and deliver on organisational mission, goals and objectives, and are business-driven rather than theory-driven; embrace flexibility rather than managing conformance; establish an architecture rather than implementing a tool; keep executive reporting simple; provide leadership as a servant-leader (defined later in this review) rather than a subject matter expert; create high-performance teams; offer a practical roadmap for programs and projects; service the needs of the business; adopt a value-based approach; create an execution-oriented project environment; emphasise the value of proper stakeholder management and situational project management leadership (also explained later in this review); and how to transform the culture with a PMO (Perry 2009). This study contends that many of these PMO initiatives are fundamental to OP3M and will be contained in an improvement model. However, it is only through strong leadership that they are implemented and maintained.

According to Gale (2010), those PMOs with solid leadership and a clear strategy that added quantifiable value to the bottom line not only made the cut (in times of financial crisis), they were progressively thought of as a go-to resource for the executive suite. Gale further states that the role of the PMO is to work across all organisational levels in harmony and to take the role of an advocate, thereby assuring a level of transparency for executives. Gale also quotes Zafeiris Konstantinos Petalas, PhD, portfolio management office lead at financial services giant Barclays, London, England: 'Basic metrics are not enough. PMO leaders cannot just rephrase data from one document to another. They must critically analyse the problems and be seen as an organisation that can design and implement solutions. PMOs need to stand up and show their executive team what they can do' (Gale 2010, p. 37).

PMOs regarded as merely administrative support struggle to gain traction within the organisation, according to Crawford (2011). The author suggests that while valuable PMOs set

processes and track projects as an ordinary matter of performance, the more advanced PMOs also deal with governance, resource optimisation, performance measurement and portfolio management. The author also adds that, 'you need to make sure that the message of the PMO matches the direction senior leadership is going … PMOs show the greatest value when portfolio performance is related to the strategic objectives of the organisation' (Crawford 2011, p. 213).

Van Der Linde and Steyn (2016) use their case study to demonstrate how a PMO adds value to organisations. The authors found three main reasons. The first was for the PMO to have a specific purpose and role for the business and fulfilling that purpose. The second was to determine the capabilities that the PMO provided for the organisation. For example, in their case study, the PMO was meant to have the ability to manage a portfolio of programs and projects and serve that purpose. It provided a link between strategy and a "pipeline" of projects, which added to its maturity and productivity. The third initiative was measured performance through specific KPIs (specifically in their case for capital forecasting). Their study supported the proposition that there are more ways of valuing the impact of a PMO than merely a financial determinant. They reasoned that a PMO's effect on an organisation would be determined by its functions (its charter), what changes it enables, and its leadership (Van Der Linde & Steyn 2016, pp. 159-60).

In concluding the discussion about PMOs, it is worth considering where these centres of excellence and value are heading. Work by Glowasz (2020) over 25 years indicates that today's projects are increasingly facing challenges with missed project deadlines, cost overruns and failure to deliver business value. This result has an impact on overall organisational performance. The PMO needs to build capabilities to adapt continuously to business uncertainties and changing organisational needs. He maintains that PMOs need to shift from being a traditional project support function to an influential centre of excellence. Glowasz argues that an effective enterprise PMO requires a forward-looking capability to act early on a broader range of factors that impact project performance, such as technology trends and advancements, to ensure projects' successful and value-based delivery.

Consequently, the PMO needs to transition to a function that effectively contributes to the organisational strategy with actionable recommendations. Glowasz advocates disruptive technologies and innovation in project management. He is also actively involved in innovating the project management practice towards a delivery model supported by data analytics and artificial intelligence. While these topics are not addressed in this study, they assist in

considering that the role of a PMO, or enterprise wide PMO (EPMO), is also to explore and engage with supportive technologies.

2.11 ANTICIPATION AND UNCERTAINTY MANAGEMENT

Another field of analysis and support for programs and projects is anticipation and uncertainty (risk and opportunity) management. Globally, following the research by Miller, Poli and Rossel (2013), UNESCO established the Chair in Anticipatory Systems, to establish the discipline of anticipation internationally (United Nations Educational 2020). The project's main objective is the development of a system of anticipatory strategies and techniques. The project considers that, the more the culture of anticipation spreads, the easier it will be to develop socially acceptable anticipatory strategies. It will then be possible to accumulate relevant experience on how to think about the future and use anticipatory methods. It will also be possible to try and develop a language and a body of practices that are more adapted for thinking about the future and for developing new ways to address threats and opportunities across the world.

At an organisational level, the point of undertaking market analysis and research and development is to anticipate the future of the organisation's business, discuss the need for flexibility, integration and decision making, and issues identified in their uncertainty management survey (Syrett & Devine 2012). The authors say that the need for plans that are adaptable and able to be changed quickly was one of the most important lessons learned by respondents. Just over half the organisations surveyed employ flexible planning and another quarter intend to do so in future. With integration, they assert that a whole of company/business perspective is necessary and that operational and project processes need to overlap. Using their BMW example, five principles were identified as necessary to follow if strategy determination and execution are to be effectively integrated. Strategy must be treated as part of individual manager responsibilities throughout the organisation rather than a central function. In highly dynamic and uncertain external environments, competitiveness must be regarded as a multidimensional construct comprising customer values, shareholder values and the organisation's ability to act and react. The internal environment must provide a high degree of stability (procedure and process), while at the same time offering flexibility to respond quickly to change. Strategy formulation must, therefore, be regarded as a constant learning process with the quality of strategy depending on the quality of the organisation's cognitive and behavioural learning mechanisms. The speed at which strategic change can be achieved depends on the

speed of strategy formulation together with the way strategy is determined in the organisation through collective anticipation, collaboration, consultation and decision-making.

Using the Proctor and Gamble (PG) approach, Syrett and Devine (2012) indicate that all parts of the organisation are expected to search for growth opportunities through different types of innovation. Senior executives need to convince managers and employees that the growth strategy is not separate from running the core business, even when trading conditions are tough. As a result, decision-making is a shared responsibility. PG has several professional development modules for senior managers to help foster internal innovation. These are modules that help them understand the mindsets and behaviours that foster innovation. Step-by-step business guides with tools and templates are available to help teams run innovation projects. There are also experts across the organisation to support teams working on and anticipating some form of growth opportunity.

Syrett and Devine (2012) also found that to maintain momentum and avoid a proliferation of small projects, managers can use portfolio optimisation tools to help them reduce the least promising projects and nurture those with the most potential. These tools allow managers to create projections for ideas and to estimate their financial potential compared with the required human and capital investment. The evaluation method used depends on the type of project, and includes net present value calculations, a risk-adjusted real-option approach, or, if appropriate, qualitative criteria. It anticipates that different projects will be managed, resourced and measured in different ways. Also, seeing the portfolio 'as a whole' highlights the critical importance of these activities, which protect and extend core businesses. A portfolio approach also helps reinforce the message that any project, particularly a disruptive one, may carry substantial risk and might not deliver commercial results while the portfolio accounts for the risk. This strategy fits with this study's organisational improvement model that looks to find and anticipate opportunities.

In Uphill (2016), the author indicates that, in our highly technical and global society, business markets and sectors are becoming increasingly complex and dynamic. The fast pace of change has brought new challenges for business leaders and strategists, increasing the need for faster reinvention, better ideas, anticipation and agility. They question how we lead strategically and anticipate market direction ahead of others to consistently secure the right ideas, strategies, products and services at the right time to gain competitive advantage. They discuss the strategies, tools and outlooks required to understand what customers and end users are thinking about and what they might want, as opposed to what the organisation wants to sell to them. They assert that leaders need to get a clear view of the line of probability in market

direction and customer trends ahead of the competition and what tools, data and techniques can be employed to assist the process. They maintain that leaders and strategists need to secure the time and mindfulness within their roles to anticipate events more effectively. Innovation and inspiration are the access keys to being a first mover to meet new demands. Today's successful leaders combine experience with research to gain better strategic insight, foster innovation and make better decisions. Innovation at the right time, ahead of others, is undoubtedly an effective route to competitive advantage. The impact of these considerations for an improvement model is that strategic business analysis, anticipation strategies and innovation should initiate the model (included in Chapters 8 and 9).

The research undertaken by Maria, Sony, Roos Jony (2018) examines a model concerning how entrepreneurs in small to medium enterprises (SMEs) predict what markets will be like in the future by considering the competitors, prices, finances, labour costs, raw materials and progress of the economic community. Their research results reveal that companies' entrepreneurial actions and backgrounds had a positive influence on anticipating the future. In addition, future anticipation had a positive effect on the additional effort, market performance and consumer value. It was also discovered by the authors that the entrepreneurial learning process consisted of three stages for employers. The learning process was done through parents as employees and from their direct exposure as entrepreneurs. This, they concluded, is considered hybrid entrepreneurship. Their study attempts to fill the research gap pertaining to the lack of models on future market anticipation (FMA) by providing an appropriate quantitative research framework and new perspectives on exploring research into FMA for SMEs.

Finally, in constructing anticipation strategies for business projects, Cleden (2016) contends that any kind of anticipation strategy must overcome three fundamental challenges:

1. 'Difficulties in predicting the future state of the project, that is, where the forecasting model is incomplete or poorly understood, or the quality of inputs fed into the model is poor. No forecasting model can ever be 100 per cent reliable. Any model is vulnerable to its own uncertainties; it can only be as good as the knowledge of the project context allows. So, the less that is known and understood about the project, the less effective the forecasting model will be

2. Inability to identify the most likely of many possible future states. Even if the forecasting model is sound, it can be hard to identify the most likely outcome, as there may be too many scenarios to analyse, or the project may be faced with a continuum of possibilities that blur into each other. Although understanding the many different paths the project could take is evident, managers cannot identify the most probable path

3. Limits on the accuracy of the forecasting model curtail its usefulness. In this case the forecasting model only provides clarity for a short distance into the future before the 'fog' of uncertainty closes in. This conflicts with the need to make far-reaching decisions right now while the future remains uncertain. Whilst we may have the knowledge which supports short-term planning, the forecasting model is unable to help with long-term plans'.(Cleden 2016, pp. 71-2)

The author suggests that it is important to acknowledge that all forecasting models are limited. If these limitations cannot be overcome (as might be the case in a highly novel project or a complex, multi-faceted program), an alternative strategy is needed, such as multiple explorations. Multiple explorations do not try to model the future and they do not make assumptions about future scenarios. The strategy is designed to explore different options and reveal the problems likely to be encountered.

Cleden (2016, p. 23) acknowledges that classical management methods cannot prevent these kinds of unexpected problems. Cleden further maintains that it is important to realise that some uncertainty will remain no matter how thoroughly the project is planned. Conversely, it is not a sign of weak management to acknowledge that uncertainty exists within a project.

This study's model for organisational change, therefore, suggests posting portfolio business analysis, anticipation and uncertainty management at the beginning of the change cycle. Acknowledging, nevertheless, that risk and opportunity management continue throughout the management cycles of programs and projects (as explained in Chapter 8).

2.12 P3M TALENT MANAGEMENT PATHWAYS AND SUCCESSION PLANNING

As noted in several of the themes addressed thus far, the need for professional development (talent management) is regarded as essential. The following commentary outlines this need and the strong trend towards developing a professional development business-oriented, workplace-based approach to P3M as a key component in a proposed improvement model.

P3M professional development is changing from its traditional educational base. As cited by Russell (2011), global changes influence organisational strategies and the project environment, client relationships and the behaviour of clients, staff and suppliers. Russell points out that people managing projects are increasingly under stress to keep up with and maintain knowledge and skillsets relevant to these changes. Therefore, both targeted and traditional professional development is needed. Project management education and training are time and

resource-intensive, and expensive in terms of cost and time away from project work. Russell also points out that project-based research and the 'live/real-time' application of findings is a solution. However, the author suggests that executive members of organisations must agree with this proposed change of approach to a form of 'learning on the job.' Russell points out that professional development needs to be couched in a continuous improvement organisational model that promotes sustainability, including the ability and expertise to change to address industry fluctuations and market needs. In their extensive publication linking business sustainability to programs and projects, Silvius et al. (2012, p. Introduction 1.) state that three groups control the destiny of sustainability in organisations. They nominate project management professionals who will face an increasing demand for demonstrating sustainability in their work. The responsibility for sustainability in projects rests with general managers, project sponsors, project management office (PMO) leaders and other stakeholders. The third and final group they target are educators and students in project management and general management who need to produce program and project managers who will have ultimate responsibility for a sustainable future.

2.12.1 THE NEED FOR PATHWAYS: IMPLICATIONS FOR AN IMPROVEMENT MODEL

As suggested above by Silvius et al. (2012), the world of P3M is changing rapidly with the increasing globalisation of markets and industry. This situation means that professional managers have a growing need to upgrade, accurately reference, and change their knowledge, skills, and attitudes for a broader and more dynamic environment. Having been initially developed and refined in the Defence and Information Technology industries, the practice of P3M is now being applied to many fields of industry and government, with national and international standards already ratified (previously defined in this chapter). While the practice has been a significant vehicle for achieving project implementation in the private sector, it is also extensively employed for programs in the public sector. However, increasingly, managers must link their results to strategic and business performance, thereby becoming more innovative and flexible. Australian organisations use a range of Project Management Maturity Models to measure their level of management competency and capability for P3M (see above).

However, these non-customised models measure maturity against prescribed criteria and suggest process change (as explained earlier) rather than improving sustainable performance. Also, there are often no formal change management strategies incorporating

methodology flexibility and people development to bind internal change to P3M competencies and results (the 4Q maturity model is the exception). Furthermore, these newly acquired capabilities are rarely linked to enduring and continuously changing workplace culture. Therefore, this study examines pathways for P3M professional development that is workplace-based and conforms with emerging competency standards.

2.12.2 P3M COMPETENCY STANDARDS

According to Crawford (2013), the competency standards or performance-based approach provides the basis for national standards and qualifications frameworks of the UK (National Vocational Qualifications - NVQ), the Australian Qualifications Framework (AQF), and similar frameworks in South Africa and New Zealand. While the competency-based model, or attribute-based approach, assumes that identifiable personal attributes will translate into competent performance in the workplace, the competency standards approach assumes that competence can be inferred from evidence of demonstrated understanding and performance at a pre-defined acceptable standard (Gonczi et al., 1993). Under the Australian competency standards approach, based on the UK model, competence is defined as "the ability to perform the activities within an occupation or function to the standard expected in employment" (National Training Board, 1991, p.30). While the Competency Model approach aims to identify behaviours related to superior performance, the competency standards or performance-based approach, in common with most standards, focuses on threshold performance being the minimum level of performance accepted or expected in the workplace. Both of the methods involve the assessment of a different aspect of competence. Each approach has both advantages and disadvantages Cheng et al., (2003). As Heywood et al. (1992, p.26) point out, carefully considering both underlying enabling attributes and performance 'will be the most fruitful'. (This review will further examine these assertions by discussing cognitive and affective learning later in Chapter 9).

Crawford suggests that the following model (Figure 2.5) brings together the Competency Model (attribute-based) and competency standards (performance-based) approaches to competence described above and relates it to existing standards and guides for competence in project management roles. This strategy demonstrates the complementary nature of attribute-based and performance-based approaches.
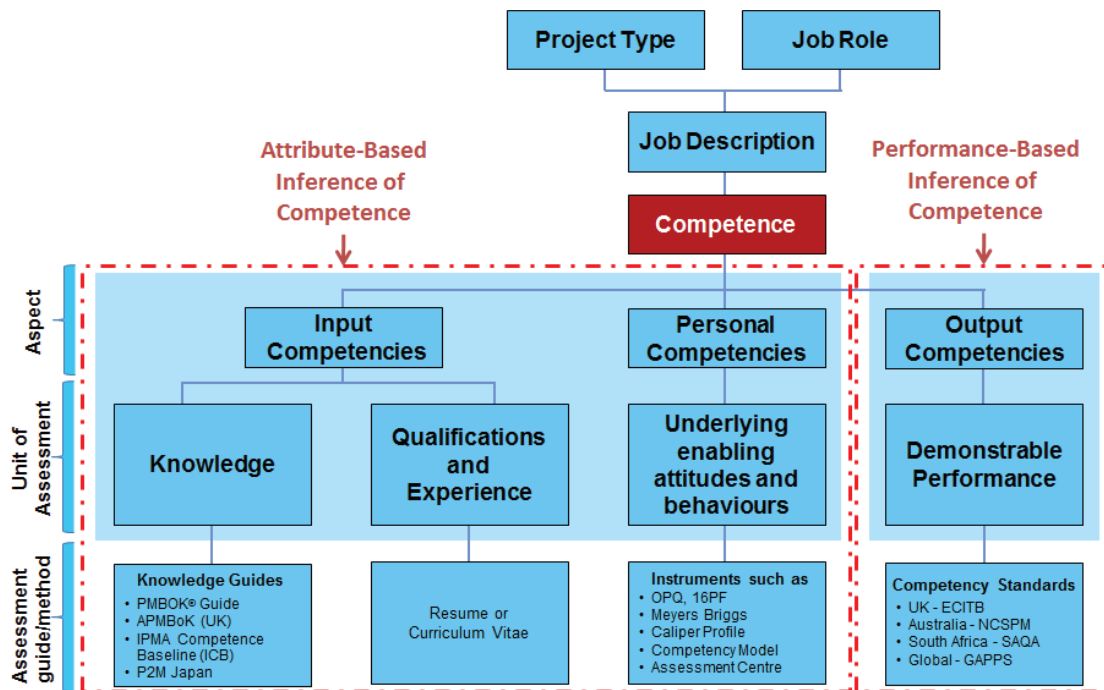
Figure 2.5 Integrated model of competence for project management roles (Crawford 2005)

From Figure 2.5, mainstream project management standards and certifications address either the Input or Output Competencies identified. The International Project Management Association (IPMA) Certification (European) model, which uses interviews and simulations in assessment and encompasses contextual, behavioural and technical competencies, offers the most comprehensive approach to assessing project management competence currently available. Crawford concludes that a distinctive characteristic of assessment against performance-based standards is that it requires evidence of demonstrable workplace performance against the criteria in the standard. In the Australian Standards, this assessment considers a range of variables according to the company or organisation's context of the project type and job role mentioned at the top of Figure 2.5 (above). Of importance to this study are the job definition/position descriptions, work context and evidence for assessing performance and underlying attitudes and behaviour development.

P3M is well standardised and follows recognised national and international competency standards, provided through professional bodies such as PMI, AIPM, IPMA, and APM. However, the standards are not structured and managed to plan and deliver business results at an organisational level, especially as the project cycle does not formally include return on investment analysis and reporting and business benefits realisation. They do not adequately

reflect the skills and performance required for the sometimes-chaotic environment where projects are planned and managed.

In his study on competency-based training at the "Edge of Chaos", Rutherford (2007) concludes that while the principles and processes of competency-based training are sound, the actual application and the definitions that support it have failed to meet the real needs of individuals and teams working in a complex environment and, as currently applied, 'fail to bridge the gap' (Rutherford 2007, p. 260). Rutherford explains that standards and competency-based training provides the knowable in an equilibrium environment. In explaining the author's learning continuum in the project environment, he also explains the connection between everyday work (operations) and the project work environment's chaos, reinforcing project complexity (see the discussions above and below).

Rutherford argues that the problem is the P3M standards themselves. He points out that like the Maturity Models, they are not contextualised and integrated throughout an organisation, especially considering strategic and operational management levels. He maintains that the current deployment of a P3M system excludes operational management, change management, sponsor management, benefits realisation, cultural competence and long-term professional development. This study suggests that this lack of inclusion is exacerbated by the low level of competency in P3M at each management level, and especially at executive management level.

2.12.3 P3M JOBS COMPETENCY MATRIX AND DEPENDENCIES: LEARNING LEVELS

Job descriptions form the basis for several performance management components and work outcomes and must be detailed in a corporate improvement model. If well-defined, they include a detailed level by management level description of the work context, activities and tasks, a range of variables of conditions under which work is performed, and key performance criteria/indicators to measure competency attainment (performance standards). For example, in the Bugden (2017) model, the Organisation and Talent System (OATS) business application and the GSX skills matching portal uses a structured approach to classify, search, recruit, offer, manage and analyse skills and competencies. The two applications use the structured GSX Occupation, Skill, Competency and Knowledge Framework, based on the Australian and New Zealand Standard Classification of Occupations (ANZSCO). The GSX Framework uses an innovative, unique framework to integrate organisation, occupation, skills, competency and knowledge in commercial, government and defence environments. The Framework incorporates recognised Australian standards combined within a consistently recognised

definition of occupations, skills, competencies learning and behavioural skills. This system suits the professional development capability in a project environment's improvement model (see Chapter 4 Method).

2.12.4 P3M COMPETENCY STANDARDS, ASSESSMENT IN AUSTRALIA AND HIGHER LEARNING

The Australian competency standards for P3M were initially approved in 1996 by the Australian National Training Authority and have been refined since then. The first revision was undertaken due to the Australian Qualifications Framework (AQF) qualifications for the Advanced Diploma, Diploma and Certificate IV programs (see below). The second revision was commissioned by the Australian Institute of Project Management (AIPM) for the professional certification program (named RegPM) for project executives, directors, senior project managers, project managers and project practitioners. These qualifications and certifications are based on the PMBOK functions of traditional project management and remain practical assessments of basic skills needed for project management. However, according to White, Young, Schumann Vodicka (2018), they do not address project success, which they claim is influenced by other factors. The IPMA Individual Competence Baseline (Figure 2.6) has a significant advantage over the PMBOK model. It presents a comprehensive explanation of the technical (classical) project management skills and covers the contextual and behavioural aspects needed in project management.

IPMA Individual Competence Baseline ICB4
Based on: Individual Competence Baseline for project, Programme & Portfolio Management, 4ᵗʰ Version. QRC by Henny Portman, Oct 2015

Abilities
Skills
Knowledge

1: Self-reflection and self-management

2: Personal integrity and reliability

3: Personal communication

4: Relations and engagement

5: Leadership

6: Teamwork

7: Conflict and crisis

8: Resourcefulness

9: Negotiation

10: Results orientation

People — the personal and interpersonal competences required to succeed in projects, programmes and portfolios

Project — the technical aspects of managing projects, programmes and portfolios

Perspective — The contextual competences that must be navigated within and across the broader environment

1: Project design
2: Requirements and objectives
3: Scope
4: Time
5: Organisation and information
6: Quality
7: Finance
8: Resources
9: Procurement
10: Plan and control
11: Risk and opportunity
12: Stakeholder
13: Change and transformation
14: Select & Balance

1: Strategy 2: Governance, structures and processes 3: Compliance, standards and regulations 4: Power and interest 5: Culture and values

Managing projects   Managing programmes   Managing portfolios

Figure 2.6 IPMA Individual Competence Baseline (IPMA ICB4 2015)

These authors conclude that there is a need to develop project management competencies over time. They argue that current certification is based on the wrong content, for the wrong reason, and is delivered in the wrong way. They suggest that it may not be the best approach to teach behavioural and strategic skills in a traditional classroom setting. They call for 'further research to explore how best to structure project management education and certification' (White, Young, Schumann Vodicka 2018, p. 52).

Also of relevance to the professional development component of this study's model is the Spreitzer, McCall and Mahoney (1997) research about how executives learn in a corporate environment. Their study determined that executives extend the traditional approach to academic and business learning by the notion of learning from experience on the job. Drawing on the literature, the researchers created a reliable measurement tool named Prospector for rating the potential of aspiring international executives concerning both end-state competencies and the ability to learn from experience. The fourteen dimensions derived from Prospector are: Sensitive to cultural differences, Business knowledge, Courage, brings out the best in people,

Integrity, Insightful, Committed, Takes risks, Seeks feedback, Uses feedback, Is culturally adventurous, Seeks learning opportunities, Open to criticism and Flexibility. The research also assesses the validity of the Prospector dimensions regarding current performance, executive potential, on-the-job learning, and international criteria on 838 lower-, middle-, and senior-level managers from six international firms and 21 countries (Spreitzer, McCall & Mahoney 1997). The study suggests that these dimensions help develop P3M managers and need to be incorporated into the objectives of professional development pathways, especially at a portfolio level, and more pertinently for this study, in that part of the model that suggests executive coaching.

2.12.5 VOCATIONAL AND EDUCATIONAL MODEL FOR P3M

The Rutherford (2007) approach to a revised Vocational and Educational Model, an organisational level for Competency-Based Training for P3M, is quite different. Rutherford has created five evaluation levels (Kirkpatrick Model) and has overlayed the training systems model on the opposing scale: analysis, design, develop, conduct and evaluate (ADDIE). In short, the model relies on the organisation's strategic plan and business objectives as the basis for competency standards (in this case, for P3M) that, when audited against the existing managers, provides the individual objectives for professional development. As a result, learning events are undertaken, and goals measure that learning (formative assessments). The managers are then assigned programs/projects to manage and are assessed (summative assessments) on their competency and performance, which align with the organisation's business objectives (through program and project results). The business results are evaluated following market and client evaluations.

Through his model, Rutherford (2007) fully contextualises the learning for managers, as well as providing a formula for the concerns for standard training and its 'traditional, training-centred research approach' that includes 'theories concerning complexity and the modern workplace' and its 'ability to achieve workplace outcomes' (Rutherford 2007, p. 16). This study suggests that this type of approach may form the basis for professional development in the proposed improvement model.

2.12.6 QUALIFICATIONS AND CERTIFICATIONS: PATHWAYS TO PROFESSIONAL DEVELOPMENT AND SUCCESSION PLANNING

The previous section on formal programs and workplace learning result in typical pathways for professional development for P3M managers, as illustrated in the following progressions:

Table 2.1 Succession Planning Model for P3M pathways

From	To
Project worker, team member, practitioner: AQF 4	Project Manager: AQF 5
Technical Expert	Project Manager: AQF 5
Project Manager	Senior Project Manager: AQF 5
Senior Project Manager	Program Manager AQF 6
Program Manager	Portfolio Manager (HE)
Portfolio Manager	Executive Manager (HE)
Executive Manager	Sponsor (HE)

Compiled from AQF and academic programs, this table exemplifies the levels of expertise required for P3M pathways and includes AQF and Higher Education (HE) levels.

2.12.7 ORGANISATIONAL CONNECTION: THE CASE FOR HIGHER EDUCATION PROGRAMS AND CASE STUDIES

According to Berggren and Söderlund (2008), projects play an essential role in modern enterprises. Not only as arenas for corporate renewal and capability integration, but also for developing leadership capacity in an organisational setting. Consequently, the area of project management has become increasingly important for universities and management educators. According to the authors, previous research and reports have given severe critique to project management education for its lack of relevance and rigour but offered surprisingly little guidance on dealing with the problems. This situation suggests that project management education should be directed towards practising managers. Their model demonstrates how educational practices can be developed to stimulate knowledge co-production between practitioners and academia. Their model is based on a 'social twist' of experiential learning theory and discusses six learning modes of rejuvenating, extending and improving project

management education. The model acknowledges the importance of the social setting for fostering learning processes and knowledge co-production and includes a combination of reflection and action. However, the knowledge produced must be operationalised in both individual and group settings within the relevant organisation to be socially robust. Their study argues that these three loci are critical ingredients in the P3M environment, purpose-built to encourage learning at the individual, program/project and organisational levels. However, this study suggests that there is a need to set this learning context in an improvement program for all levels of management (previously identified), especially at the highest (masters and doctoral) levels.

Additionally, prominent professional research studies in work-based fields are being promoted in universities. The work of Fergusson, Brömdal, Gough Mears (2020) acknowledges that increasing demand for advanced practitioners and leaders in every domain of work has led to the advent of the so-called 'advanced practice professional'. This term refers to a practitioner who contributes higher-order cognitive, affective and conative inputs to organisations (Fergusson, Brömdal, Gough Mears 2020, p. 1). This type of program ideally suits portfolio and program managers who research how their organisations can enhance P3M and mature their organisational project management. The authors propose that the shift from competency standards (AQF 4-6 in PM) to capability development is a precursor to enhanced professional identity and higher-order thinking and ultimately to the status of an advanced practice professional. This shift is made possible by 'higher education programs that focus on work-based learning and research' (Fergusson, Brömdal, Gough Mears 2020, p. 18) and, therefore, fulfil the goals of, in this case, improvement in OP3M. An ideal choice for such programs would be senior managers, especially those who hold the sponsor's portfolio responsibility.

2.12.8 PROJECT SPONSORS: GAPPS GUIDING FRAMEWORK FOR PROJECT SPONSORS

Project Sponsors are senior managers who oversee programs and projects and usually chair steering committees. According to Global Alliance for the Project Professions (2017), the sponsor is an individual who may be called a funder, owner, client or senior responsible owner. The person appointed as a sponsor typically has a permanent position within the organisation. The role of project sponsor is considered an additional part-time role. GAPPS suggest that the organisation's governance practices should clarify who the sponsor is, how the sponsor is selected, their accountabilities, their responsibilities, and the relationships between the sponsor and the program and project manager, and between the program/project and the business. These

practices should ensure that the sponsor has the authority, credibility and position necessary to perform the role.

However, until very recently, the sponsor's roles and responsibilities have not been well defined. A first international guide for project sponsors, Global Alliance for the Project Professions (2017), was finalised in February 2021 and approved at a recent thought leadership forum in the United Kingdom by GAPPS (formerly General Alliance for Project Performance Standards; now, Global Alliance for the Project Professions), the independent catalyst for global project standards. The guide fills a gap in the project landscape, as project management has not had clear direction on the performance capabilities required by project sponsors. Research and practice have found that active sponsorship is critical to success.

The framework contains thirty-four performance criteria within ten elements and three significant areas of responsibility in which project sponsors should be competent: taking accountability for the project, supporting the project manager, and supporting the project. The development of the guiding framework includes a broad spectrum of project stakeholders from professional bodies, the corporate world, government bodies and regulators, and academics. As competent sponsors are a key to successful projects, the guiding framework is published on the GAPPS website.

This study's model for improvement should include these competencies. The GAPPS Sponsor initiative strengthens the case for professional development for sponsors. This concept and approach have not been previously envisaged or practised in the project management field.

2.12.9 CASE STUDIES TO CONFIRM A CORPORATE APPROACH TO PROFESSIONAL DEVELOPMENT AND RETURN ON INVESTMENT

Several case studies that emphasise how a professional development program can achieve a return on investment (ROI) through distance learning (Alam, Gale, Brown Kidd 2008) follow contextually relevant organisational project management capability development aligned with business strategy (Cooke-Davies, Crawford & Lechler 2009; Crawford 2012). This research has significant findings for a proposed improvement model. They include involvement of all management levels in the professional development program, focus on benefits realisation, return on investment, and learning that occurs for, and throughout, the organisation.

These studies (and models) specifically suit developing an 'advanced practice professional' mentioned by Fergusson et al. 2020 and support the professional development approach to be proposed by the researcher as part of an improvement model. They also exemplify how case studies are critical to future research (mentioned in Chapter 9).

2.12.10 CONCLUSIONS FOR P3M TALENT MANAGEMENT AND PATHWAYS

In summary, these findings emphasise the importance of pathways to professional development that include examining job descriptions, customisation of P3M standards, qualifications, and higher learning to enable pathways to expertise through organisational learning. However, the researcher suggests that professional development pathways are often overridden by the organisation's context and the industry in which P3M managers operate, to the extent that programs are not planned and managed or are not undertaken at all. Nevertheless, this research reveals that competency standards and assessment have set reliable criteria through the AQF levels and now include (international) sponsors' roles and relevant case studies being created in higher learning.

2.13 P3M REVIEWS AND PERFORMANCE MANAGEMENT

This section examines performance management, a vital component of an improvement model. The concept of health checking is used to describe the assessment of either a program, project or operational function with a view to quality improvement of both process and product, which contribute to overall performance and results.

2.13.1 P3M HEALTH CHECKS AND REVIEW SYSTEM

In their study of Project Health Checks (PHC) Haji-Kazemi and Andersen (2014) provide a background to this theme. They explain that various researchers have introduced different approaches that may be employed to detect early warning signs in projects. Some of these approaches include risk analysis (Niwa, 1989; Nikander, 2002), project success/failure models (Pinto & Slevin, 1988; Lewis, 1993), project assessment methods (Cooper et al., 1997; Cooper, 2005; Miller & Lessard, 2000; Klakegg et al., 2010), earned value management (Vanhoucke 2012), decision support modelling of early warning signs (Nikander & Eloranta, 2001), performance measurement (Andersen & Fagerhaug, 2001), and project health checks (PHCs) (Mian et al., 2004; Construction Industry Institute (CII), 2006; Jaafari, 2007). They state that 'although these methods have been mentioned as possible early warning sign identification approaches, very few literature sources have directly demonstrated the link between project early warning and these methods' (Haji-Kazemi & Andersen 2014, p. 2). Their paper identifies the factors that influence the level of efficiency of the PHC as an early warning

system in practice. Their findings are not uncommon with current practice. They cite that the PHC's purpose is to give a helicopter view of a project's performance and highlight critical success factors for monitoring, improvement and follow-up. The key goal is to improve these areas continuously and contextualise the PHC to the organisation by employing a health check system.

2.13.2 BUSINESS AND PROJECT BENEFITS OF A HEALTH CHECK SYSTEM

The PHC process/system provides a minimal impact, short, cost-effective risk mitigation methodology which reduces the risk of project failure or underperformance. Its cost/benefit criteria improve the quality of project management and hence the delivered outcomes, provides an early warning and advice on how to reduce or recover from a developing situation, and assesses the management efficiency and effectiveness of project initiation, control, monitoring and monitoring reporting. A proposed improvement model centres a health check system at business, program and project levels.

2.13.3 JAAFARI MODEL

The idea of a PHC as an OPM tool is a practice exemplified by Jaafari (2007), who focuses on the theory and application of diagnostic concepts to assess the health of large projects or programs at any point in their life, relative to the desired targets of strategic and project concern. Jaafari presents a comprehensive PHC methodology (see below Figure 2.7) currently in wide use. Jaafari asserts that project diagnostics cannot be confused with project progress measurement and control or project management maturity models. The objective is to determine whether the project team applies a systemic approach to planning and management. Its purpose is not to assess the project progress achieved at a given time and compare that to plans, nor does it aim to evaluate the maturity of applying a particular project management methodology/standard. The health of a project/program at a given time is found by assessing the actual practices used to manage a raft of variables that collectively characterise the management practice on that project. The PHC results can then be correlated with the results obtained from traditional project progress measurement tools. Jaafari suggests that this correlation will yield a more robust understanding of the enabling factors management and their influence on project behaviour and results.
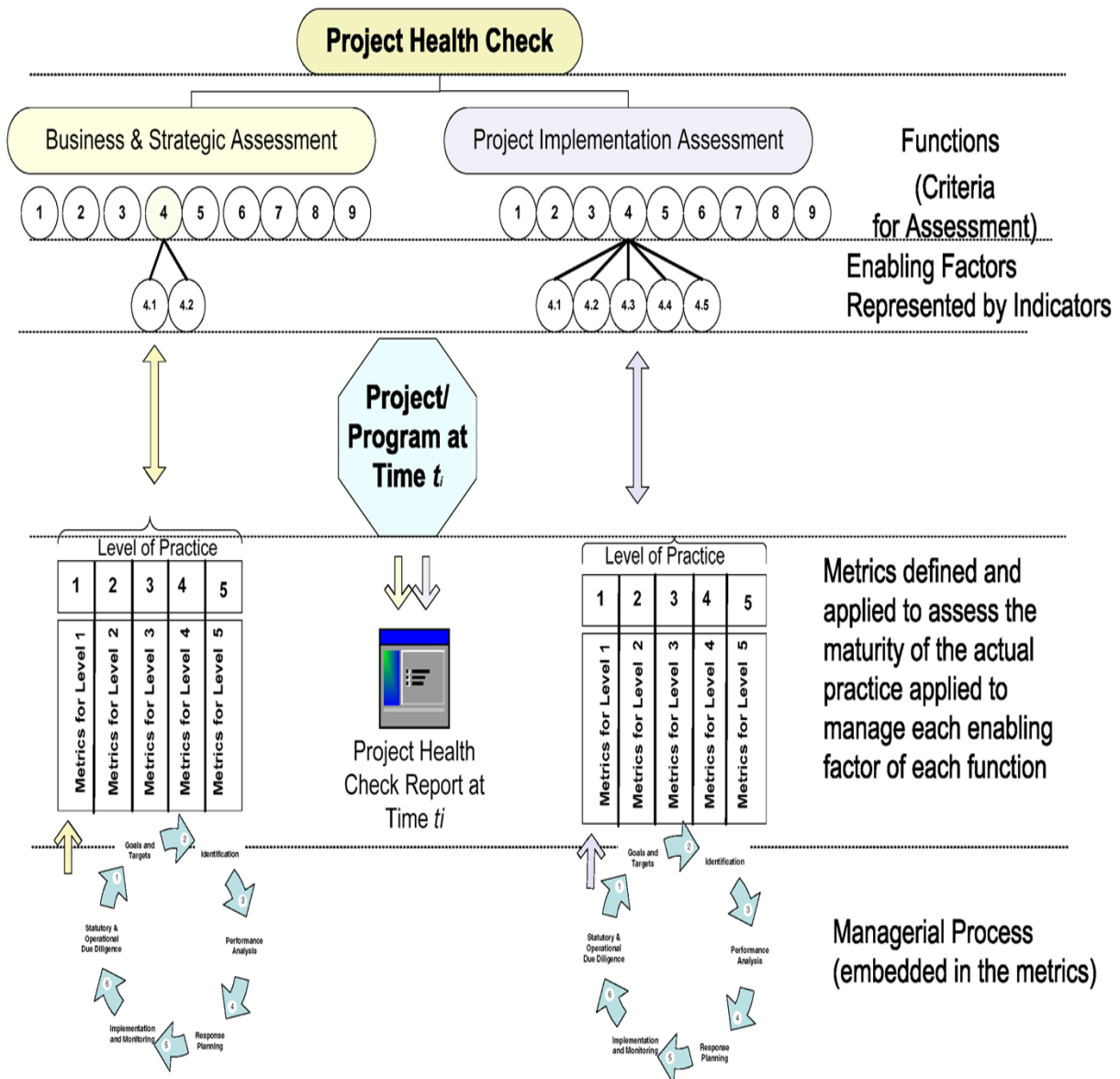
Figure 2.7 Project Health Check Model (Jaafari 2007, p. 786)

Jaafari's Health Check Report contributes to business and strategic assessment and project implementation assessment. The result is an integrated assessment that suits the proposed model for improvement in OP3M. This reinforces that a model needs to include Program and Project Health Checks as a vital component which contribute to metrics for performance.

2.13.4 BUSINESS KPI REVIEW SYSTEM FOR OP3M: INCLUDING ORGANISATIONAL MATURITY ASSESSMENT

Organisations commonly use KPIs for metrics, especially for performance management of personnel and program/project objectives. Few, if any, link these KPIs to OPM maturity. Kerzner (2017b) has discussed a wide array of techniques and toolsets for project management

in what is a bible for international advice on metrics. Notably, however, he states that organisations often purchase project management software and are reluctant to rely on report generators, charts and graphs to provide the necessary information, even when managers realise that this information is insufficient or has limited value. He suggests that even those companies that create their bespoke project management methodologies neglect to consider the metrics and KPIs needed for effective stakeholder relations management. Informed decisions require adequate information. He notes that for decades, we believed that the only information that needed to be passed on to the client and the stakeholders involved was information related to time and cost. Today, he says, we realise that the actual project status cannot be determined from time and cost alone. Each project may require unique metrics and KPIs. The future of project management may very well be metrics-driven project management (Kerzner 2017b). Importantly, in discussing how the emphasis of project management has changed, the author outlines the emerging corporate 'new view' of executives and project managers, as follows:

1. Project management is a strategic core competency, necessary for the growth and survival of the organisation
2. People need to undergo multiple certifications in both project management and corporate business processes
3. Program and project managers need to participate in strategic planning, portfolio selection and capacity planning
4. Part of the project manager's job is to bridge strategy to execution
5. Project managers make both project and business decisions.

This study argues that measurement at a business level involving program and project managers must be in place to integrate this concept into an organisation's business strategy. One way of consolidating this approach is through a business-level review of programs and projects using KPIs (suggested below).

2.13.5 KEY CONCEPTS AND APPROACH FOR THIS STUDY: BUSINESS AND P3M KPIS

Specifically, from work with the Boral Ltd group of companies and its managers, the researcher has devised a Business KPI Review System for OP3M that encompasses a multi-year approach that is organisation-specific and customised. It follows current Australian and International Standards for P3M. Its standardisation includes timesaving, cost reduction and quality improvement by reducing output variability, minimising waste, maximising project

value, and gaining better labour and cost performance. This approach relies on a management teams' willingness and perseverance in applying a standardised methodology, procedures, documentation, and systems for projects and contracts, and links these with strategic planning and operations. Results are aggregated yearly, and executive and managerial reinforcement of the process is reinforced through rigorous and thorough KPI assessments at business and project/contract levels, providing a benchmark for professional P3M individual and team development. The KPI Review System will be further explained and exemplified in Chapter Three and demonstrated in the two Boral case studies (Chapter 6).

This approach realises the following benefits:

1. Standardises project management procedures that can be tailored (contextualised) to individual program, project and business needs

2. Provides a uniform approach to projects and contracts that provides efficiencies and enables rolled-up reporting and routine monitoring and control processes

3. Assesses and reports on KPIs relating to the organisation's business and managerial performance

4. Aligns business KPIs to individual KPIs for key personnel

5. Highlights commercial margins for projects and contracts

6. Improves management control of project management plans, controls and reporting

7. Provides an opportunity for early intervention where problems are encountered

8. Enhances customer focus and satisfaction to realise the opportunity for repeat work

9. Provides an increased pool of project management expertise and develops cross-business expertise and support

10. Develops collective expertise to enhance the transferability of personnel within the business group

11. Reduces risks to projects (e.g., liquidated damages, claims) by improving competencies and procedures in a formal project, safety and business risk management.

This set of benefits/approaches is the most crucial organisational toolset to be offered by a proposed improvement model. It is sponsored, directed and used by senior management to measure organisational outcomes (see a detailed explanation in Chapters 6 and 8).

2.14 CHANGE MANAGEMENT STRATEGY FOR OPM IMPROVEMENT

Appelbaum, Habashy, Malo Shafiq (2012) point out that businesses are regularly required to adapt to a changing environment to maintain their position in the market and adapt even more so if they are to grow. Changes are an inevitable part of the current global economic market. The rate of technological advancement and increasing global competition necessitates a continuing need for change in the future, citing (Armenakis & Harris 2009). Also, many authors argue that change never starts because it never stops, citing (Weick & Quinn 1999). Appelbaum, Habashy, Malo Shafiq (2012) point out that organisations adopt new cultures involving learning and developing the agility to adapt to their environment's constant evolution. They emphasise that whether an organisation tries to evolve continually, thus successfully implementing changes, can be a significant determinant of its short and long-term success.

Furthermore, Appelbaum, Habashy, Malo Shafiq (2012) contend that from one third to as high as eighty percent of organisational change initiatives fail. Their paper attempts to assess the 'how-to-do-change management' with empirical and practitioner literature that was not available for inclusion in their original text written 15 years ago. The report presents a brief review of articles related to each of the eight components of Kotter's model to highlight the value of each (Pollack & Pollack 2015).

While Kotter's eight steps remain a starting point for executive managers implementing change in their organisations, the model is likely to improve the chances of success (Pollack & Pollack 2015). Appelbaum, Habashy, Malo Shafiq (2012) point out that the model should not be considered something that guarantees success. In practice, it may be helpful to account for contextual variables and adapt the model accordingly, citing (Graetz and Smith 2010; Dopson et al. 2008). Appelbaum et al. (2012) also suggest that it may be constructive to combine Kotter's planned framework with the other leading change models such as emergent, contingency or choice models and theories in the change management literature. Appelbaum citing Todnem (2005) suggests that organisations need to find the best mix based on the desired change.

Change management has become an integral component of project management. According to Pollack and Pollack (2015), change management is becoming an increasingly important topic for project management research and practice. The 2014 Project Management Institute Research and Education Conference included a dedicated strand for addressing change

management. The publication of Managing Change in Organisations: A Practice Guide (PMI 2013) suggests that change management is becoming part of the mainstream for project management practice. In addition, the inclusion of stakeholder management as a tenth knowledge area in the Guide to the Project Management Body of Knowledge (Project Management Institute 2017a) suggests a general shift towards issues more commonly associated with change management in the normative project management literature. Hornstein (2015) advocates for further integration between project management and change management as a necessity.

The Pollack and Pollack (2015) research explores the change management literature and change managers' perspectives to test previous researchers' claims that there is a divide between change management theory and practice. This research does not comment on the role of change management in the organisational change process. However, the study's relevance to the project management community lies in the issues raised in developing a greater understanding of the nature of corporate change management.

Change Managers Versus Project Managers

To address this need, more specifically, Pollack and Algeo (2016) conducted a study into how change management managers and project managers could work together. They conducted a survey of 455 project managers and change managers. The research focused on these principal areas: when project management and change management make the most significant contribution, how the disciplines contribute to different success factors, how the fields work together to reduce risk, and the reporting relationship be between project management and change management. The results separate project managers' and change managers' responses to better understand how these disciplines see the world differently (Figure 2.8 below). Firstly, they established the relationship between the fields as presented in the following graph.
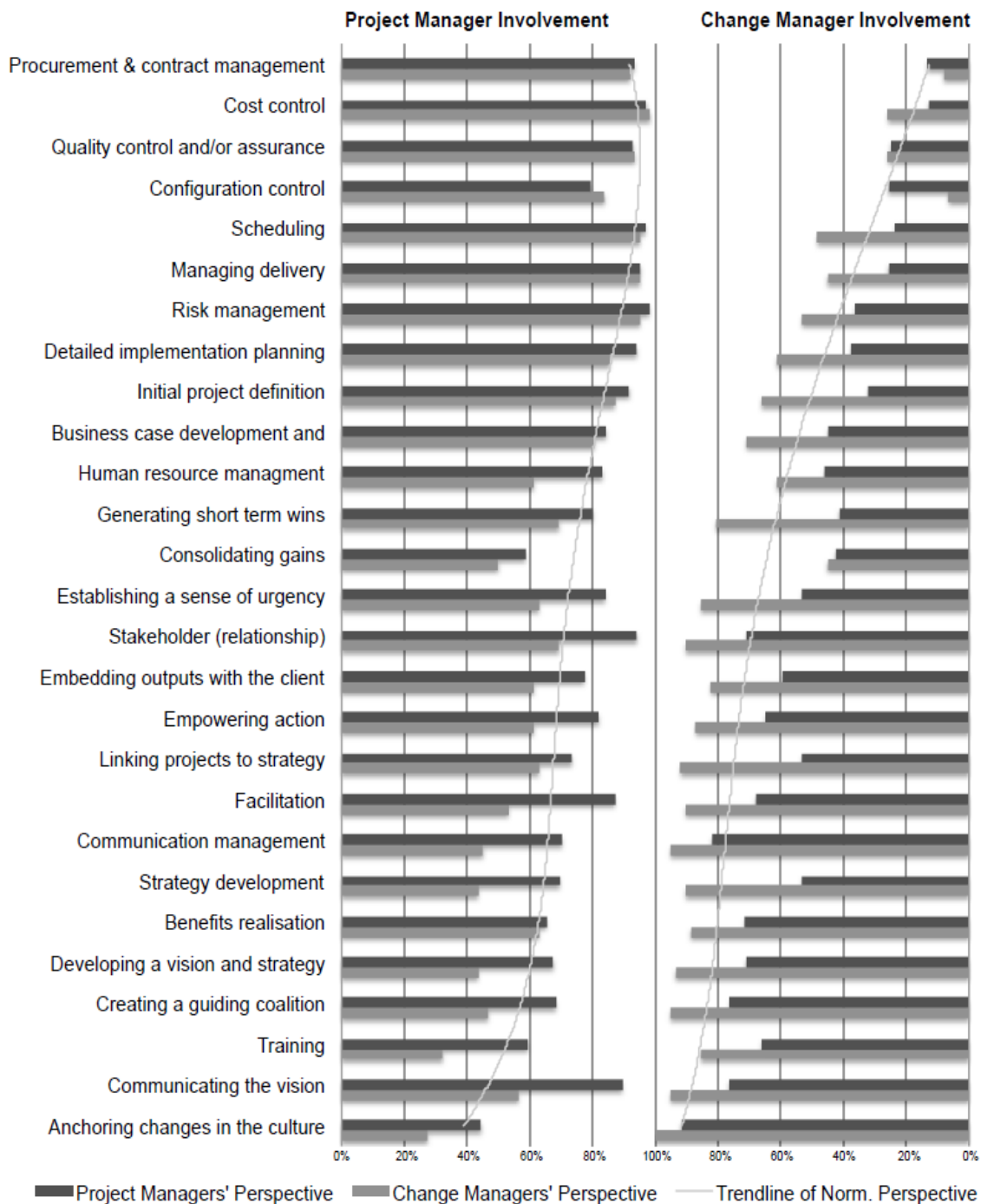
Figure 2.8 Project and change managers' perspectives (Pollack & Algeo 2016)

Figure 2.8 indicates different contributions by project and change managers to the wide range of strategic activities (left-hand column of Figure 2.8) and resulting success outcomes underpinning operational and strategic activities. It is interesting to note that both fields tended to rate their contribution higher than the other.

Their study investigates how the two professions could assimilate. Given that these disciplines have quite different focus areas, Pollack and Algeo (2019) suggest that any decisions regarding how the disciplines work together should be based on the organisation's immediate needs and the nature of the work to be delivered. Change managers work across all portfolios of an organisation. In contrast, traditionally project managers are usually more associated with the services and products side of an organisation. This study will suggest that change management is an important dimension that needs to be added to a corporate improvement program, given its nexus with P3M, as explained in the proposed model (Chapter 8).

2.15 P3M LEADERSHIP FOR OPM

According to several authors in Dalcher (2014) , there is a 'sea change' evolving in terms of the leadership and culture of professional project management. They assert that change will affect how projects are perceived, led and governed, particularly in the context of the broader organisation to which they belong, whether in the public, private or not-for-profit sector. Dalcher (2014) maintains that many organisations have struggled to apply project management models to their new projects in the global environment. The authors point out that anecdotal and evidence-based research confirm that projects continue to fail at an alarming rate. A significant part of the build-up to failure is often the lack of adequate project management knowledge, experience and leadership. Dalcher asserts that project failure is perpetrated by the poor choices of strategy made by senior decision-makers and program managers.

 (Dalcher 2017b) states that one of the critical success factors for project management is the availability of support and buy-in from senior management. The author says that reports on project success and failure typically emphasise executive management support as a distinguishing and necessary ingredient. Dalcher further emphasises that embedding major improvement initiatives, such as maturity models and process improvement schemes, into an organisation also depends on harnessing support at a strategic level. Dalcher suggests that most attempts to introduce and embed change at an organisational level rely on the availability of leaders willing to engage, defend, support and champion the initiatives to ensure they survive and thrive. The author warns that these imperatives may also compete with personal needs of ambition and status. This point will be emphasised later in this study through the interviews with selected experts in Chapter 6.

Earlier, Thomas (2002) and colleagues asked why it was so difficult to convince senior executives of the importance of project management. Thomas' Project Management Institute (PMI) study confirms that project managers pitch the profession too low by focusing on projects' tactical importance; however, senior executives are looking for a more strategic focus on the long-term delivery of value. The study notes that successful sellers emphasise project management's alignment with corporate strategy, goals and explicit value statements. Senior executives need to understand the benefits that project management can offer in their context.

Contemporarily, (Dalcher 2017b) also asserts that project management theory might be flawed, suggesting alternative delivery methods. Dalcher means that the discipline could be partly at fault for failing to transmit the correct message. Describing a project as a temporary endeavour with beginning and end points might be doing the profession a disservice. This situation ignores the need to focus on benefits, alignment with corporate objectives, sustainability, and the strategic and organisational context. The author suggests that presenting projects as a temporary group activity or resource allocation also misses the broader purpose and goal as it more crucially ignores the link to upper-level values, priorities and concerns of interest to senior executives. As such, Dalcher contends the need for an integrated and long-term approach to P3M and OPM and embedding within an organisation.

In Nieto-Rodriguez (2016), the author explains how fewer, more effectively selected and managed projects are essential to strategic and long-term success. Using both research and work experience, Nieto-Rodriguez explains how and why the organisations that focus on just a few key initiatives can perform significantly better financially, achieve their strategic objectives, and motivate their staff better than unfocused organisations. The author introduces a new way of looking at a company through two vastly different and often conflicting dimensions: running the business (business as usual) and changing the business. What is added to one dimension must be subtracted from the other. Finding the right balance between these two dimensions represents one of the significant challenges to successful strategy execution. The author considers that becoming a focused organisation involves a radical change in the way companies are organised and how they select and manage projects, thus creating a new culture, suggesting that the organisation discusses the characteristics that comprise a focused organisation. Nieto-Rodriguez further describes critical areas where such an organisation builds its maturity levels; providing examples of focused organisations that outperform the rest and explaining how all enterprises can become concentrated in practical steps, suggesting that the key to these initiatives is strong leadership. The two key contributions of the work are posing

the searching questions (and providing a set of potential answers) regarding organisational maturity and offering a new vocabulary that can underpin a new culture for the project management discipline. The issues of strategic integration within organisations and the use of a new language for the project management discipline are crucial to the proposed improvement model being proposed by the researcher.

In a series of five papers (2011-2016) concerning project leadership and building organisational capability, McMahon (2016) pointed to the lack of project leadership in Australia and failed project results. In addressing the AIPM National Conference in 2016, the author offered a range of leadership strategies and techniques organised against a structure of inputs, processes and outputs (the project and business environment). McMahon suggested that the analytical leadership models based on 'needs' (Adair: Task, Team, and Individual) and 'readiness' (Hersey and Blanchard: situational decision-making) are the two models most widely used in Australia (McMahon, 2007), contending that the two notions are related and reflect close linkages between the two analytical models.

McMahon (2016) also suggests that these ideas can be incorporated into a set that will render project leadership (at all levels of management) a viable option for the future of organisational project management. McMahon finally suggests that organisations may consider moving to a project leadership regime based on leadership's current body of knowledge.

Similarly, McKinsey Capital Projects and Infrastructure produced a practical guide and reported on the Art of Project Leadership (Asvadurov et al. 2017). The report specifically targeted large and complex project planning and delivery, and emphasised leadership as a major governing factor in achieving success at a strategic level of business. However, the performance of large capital projects has been historically weak and prone to overruns despite the availability of extensive research, literature and sound practices. The authors suggest that the analysis has primarily been conducted around systems, process and technical mastery (the conventional mechanics and functions of project management). They indicate that focusing on the 'soft skills,' such as the leadership, organisational culture, mindsets, attitudes and behaviours of project owners, leaders and teams, would be more helpful and achieve a strategic outcome. In contemplating a proposed improvement model, these approaches appear as central to a model.

Likewise, Farnes (2017) states that projects continue to have unacceptably high failure rates despite the advances in project management practices. The author points out that industry and academia have responded to high failure rates by focusing on technical and rational aspects of project management. This emphasis only results in a slight improvement in the outcome of

projects. Importantly, part of his research investigated the impact of the project managers' person-environment fit from the perspectives of executives and senior managers. The study identifies that most placed a higher value on the project manager's technical skills. Farnes suggests that in navigating difficult and socially complex project environments, the project manager needs to be competent in both technical and interpersonal skills. The paper concludes that corporate culture is an important consideration when managing a project, and the project manager has a role in supporting and maintaining the organisational culture. A strong and supportive culture emerges when there are active unifying behaviour, values and beliefs. Reliable culture results in consistent behaviour, reduced conflicts, and creates a healthy and respectful working environment. This approach lends itself to being a significant component of an improvement model for OP3M.

Perhaps more importantly, Naylor (2007) contends that organisational focus is too often on process and monitoring the marketplace through the Internet and social media. The author contends that organisations increasingly neglect the relationship that must be forged with individuals. Naylor describes this relationship as cooperative intelligence. Cooperative intelligence puts people first; giving attitude and practices which encourage openness, sharing and trust. According to Naylor, cooperative intelligence integrates cooperative leadership, cooperative connection, and cooperative communication. At board level, Naylor (2006) suggests that doing due diligence on an executive's personality predispositions and competitive intelligence knowledge and usage must be conducted. This example suggests that anticipating how people behave according to their backgrounds is vital knowledge for P3M managers. If P3M is to be applied in an organisation, cooperative intelligence must be an overarching centrepiece of people management.

Conclusions from Leadership for OPM

To successfully embed project management within organisations, Fernandes, Araújo, Pinto Machado (2019) suggest that there needs to be a recognition of an organisation's strategic objectives, values and preferences so that outcomes can better reflect strategic objectives. In doing so, they suggest that project management can become a meaningful partner in strategic execution and corporate value delivery. They maintain that, as the discipline seeks to move from doing to shaping, it must embrace a greater focus on objectives, intentions and purpose, and begin to enact a perspective of active, responsible and effective project leadership. This study argues that an improvement model must include strong leadership as a professional

developmental need, and that leadership techniques coupled with cooperative intelligence is essential. These techniques may assist in the development of cultural competence in OP3M.

2.16 CULTURAL COMPETENCE IN OP3M

Gray (2014) describes a conventional view of sustaining an organisational culture through formal statements of principle, top management behaviour, reactions to organisational issues, the allocation of rewards and status, and rituals, stories and symbols. However, this study will examine how project management's discipline may well be the vehicle for formulating and changing that culture using a wider variety of methods.

2.16.1 CHANGING ORGANISATIONAL CULTURE

According to Crawford (2011), corporate project management culture is encapsulated in individuals' beliefs, behaviours and assumptions within an organisation and includes procedures, values and unspoken norms. The author suggests that culture can have a considerable influence on how well a strategy is executed in organisations: the importance of achieving strategic objectives, how performance is communicated, whether changes create competition or cooperation, who can access and use technology, whether decision-making is done in command-and-control environments or by self-directed teams, and how functional units collaborate. According to Crawford, these are critical issues of culture that need exposure in creating a structured approach to executing strategy via, for example, a strategic PMO. Some best practices identified in Crawford's Strategy and Projects research study include: the value of P3M to an organisation, a focus on strategy execution, a trusted senior management that consistently rewards successful behaviours, a shared understanding and commitment concerning the organisation's long-term objectives, and leadership that is trusted. Crawford (2011) concludes that these cultural characteristics may seem out of reach for the organisation operating in an ad hoc mode with little in the way of existing project management structure, process or culture.

Also, according to Koh and Crawford (2012), change to the culture will not occur through declarations and new mission statements unless these proclamations are backed up by changes in the everyday practices and procedures that define what people should do, how they are evaluated, and how they are rewarded. Easy access and gauging change are ideally suited to the project environment. These changes in the way things are done will lead to a new belief that the new way is the right way; a matter of culture. Managers generally demonstrate from

their experience in the project management field that improvements in the way projects are managed leads to bottom-line success. The authors suggest another way to think about it is to 'function as if' the desired belief system was already in place to bring about the desired change.

As a governance model for change, Pearson, Larsen and Gray (2019) emphasise the importance of organisational structure in managing projects within an organisation. They address both the technical and behavioural issues across a broad range of industries. They present a holistic view that focuses on the methodology of managing projects and the human dimension, and how they interact to determine the outcome of projects. They describe what they term a 'project organisation,' that is to say, all work is project-oriented and managed; the focus and behaviours relate to project planning and outcomes.

They demonstrate the difference between structured functional organisations, organisations with work matrices and a dedicated project organisation, and suggest that the project organisation has a higher level of effectiveness. The difficulty, however, is that not all organisations are, or can be, utterly project-oriented in structure. Therefore, several dimensions examined in Pearson, Larsen and Gray (2019) are worthy of consideration in determining how to change the culture. They include member identity, team emphasis, management focus, unit integration, control, risk tolerance, reward criteria, conflict tolerance, means-end orientation and an open-system focus. According to the authors, these dimensions are vital components of organisational culture. Of note concerning this study is the importance of a portfolio, program or project manager's job, and accurate competence and measurement description. Unfortunately, however, Australian competency standards (compared with the IPMA model) do not include such attributes as the beliefs, behaviour, and assumptions shared by individuals that inevitably affect program and project results. Once again, this study will recommend that these dimensions should be included in P3M job descriptions.

Nevertheless, change models offer sound guidance for initiating and embedding cultural change as exemplified by the McKinsey 7-S Change Model and the ADKAR model, employed explicitly in a P3M setting (Joseph Galli 2018, pp. 126-8). The McKinsey model uses seven crucial categories that companies should be aware of when implementing change:

1. Strategy – The change management plan that should consist of a step-by-step procedure
2. Structure – The form in which the organisation is divided or the network it follows
3. Systems – The methods that will be used to complete day-to-day tasks and activities
4. Shared values – An organisation's core or central values according to which it runs or works
5. Style – The manner in which change is adopted or implemented

6. Staff – The workforce or employees and their working capabilities

7. Skills – The competencies as well as other skills possessed by the employees working in the organisation. Hughes, J. (2012). Paper E2 enterprise management in (Joseph Galli 2018, p. 127)

Unlike most other models, this model focuses on all the essential factors impacting any change. While most other models represent process or workflow, McKinsey's model focuses on all the business aspects that should be defined before implementing a change strategy.

The ADKAR Change Management Model determines various gaps in a system to offer employees practical training and professional development. Like McKinsey, the ADKAR model focuses on business-oriented goals, which is helpful to support employees to go through the process and recognition/support of change more easily. ADKAR Model stands for:

1. Awareness – of the need and requirement for change

2. Desire – to bring and be part of change

3. Knowledge – of how to drive change

4. Ability – to incorporate the change regularly

5. Reinforcement – to keep it implemented and reinforced later on. Hiatt, J. M. (2013). Employees Survival Guide to Change in (Joseph Galli 2018, p. 127)

Each of the P3M case studies (in Chapter 6) has incorporated these models to effect change. Though the organisations did not specifically have change presented to them in this manner (as models), the Prototype P3MCIM Types 1 and 2 (Chapter 3) includes all of these strategies.

Joseph Galli (2018) concludes that poor leadership significantly influences the success of the change in a project management setting and emphasises that people are the changes, not the models, and people will only change if they see and feel the need to do so (Joseph Galli 2018, p. 131). Thus, the author insists that it is crucial to effectively communicate the need for change and include employees and team members to feel part of the change. As emphasised in Chapter 8, the theme of people, leadership and succession planning will potentially be the centrepiece of the suggested corporate improvement model.

2.16.2 LEADERSHIP COACHING/MENTORING FOR CULTURAL CHANGE

A vital component of the proposed improvement model may well be the role of senior managers, given the potential power of using managers as coaches and mentors. According to Milner, McCarthy and Milner (2018), organisations wishing to foster a coaching leadership style will benefit from the following strategies. The authors suggest that organisations need

executives to role model a coaching leadership style. Instead of generic coaching/mentoring training programs, tailored training for the leader should be offered as a coach/mentor, and training should build coaching/mentoring skills. Managers then need access to ongoing support as they transfer their learning to the workplace.

The authors also state that coaching supervision and mentoring could also be offered to managers to help them upgrade their coaching skills on an ongoing basis and help them work through role conflicts or ethical issues associated with undertaking a managerial coaching role. Such assistance would support the development of a coaching culture and increase coaching within an organisation. Milner's research provides a model for executive coaching in implementing a corporate improvement program for project management as an integral part of professional development within an organisation.

2.16.3 CULTURAL CHANGE BY ADDRESSING UNCERTAINTY MANAGEMENT

A study by (Karlsen 2011) found that addressing 'uncertainty management' in projects could promote a positive culture change. Its purpose was to study the effectiveness of current uncertainty management practice in projects focusing on the organisation's cultural dimension. Empirical data were obtained using in-depth interviews with project management professionals in three project-oriented organisations in Norway, Statsbygg, Telenor and the Norwegian Defence Logistic Organisation. All respondents from these three organisations were people who worked with projects and uncertainty management. The study findings showed that a supportive uncertainty management culture is characterised by: a positive attitude, commitment of time and resources, openness and respect, understanding of uncertainty management, uncertainty management internalised into daily work, senior managers asking for and using uncertainty information, proactive uncertainty management, a focus on opportunities, clear areas of responsibility, accepted and operationalised policy and terminology, and a holistic uncertainty view.

Moreover, the interviews revealed that commitment, knowledge, communication, openness and trust contribute to building a supportive uncertainty management culture. His research concludes that a supportive culture is vital for effective uncertainty management in projects, particularly in practical implications for the workplace. This study emphasises that any well-meaning project management technique needs to be part of the corporate culture if it is perpetuated as a discipline. Karlsen's study also demonstrates that an investigation into corporate culture based on project management is worthwhile.

2.16.4 SUSTAINABILITY AND SUCCESS OF THE PROJECT ORGANISATION

Querying the sustainable impacts and success of projects, Dalcher (2017a) notes that many papers and conference presentations touch on the notion of project failure, promising to improve past statistics. The author suggests that organisations are developing a growing understanding of the core causes that underpin failure but asks whether this ever-increasing understanding of causes is necessary and sufficient for delivering success; that part of the answer depends on when success is measured. Dalcher's view is that success is a relative term that is context- and viewpoint-dependent and is also time-dependent given that the view of success, or failure, may vary with time.

However, Dalcher argues that there is also an essential contradiction questioning whether projects are designed to deliver a product or artefact as an endpoint. The author points out that while delivery and handover can be viewed as a successful project result, this may lead to more profound questions about the nature of project management. Dalcher poses the question as to whether project management is merely concerned with creating something that did not previously exist, or does it go more in-depth and look at the need to have influence, achieve an outcome, or deliver promised benefits. If we accept the former, Dalcher maintains that we have project management that focuses on delivery. In contrast, if we delve into the latter, we must adopt a longer-term position extending beyond project delivery into benefits realisation and investment cycles.

Dalcher (2017b) asserts that society has become increasingly engaged with the concept of sustainability as it becomes increasingly apparent that the competitive race to accumulate profits has depleted resources and challenging environments. Dalcher points out that the short-term focus of projects, which encourages immediate exploitation to deliver identified targets, contradicts the need to adopt a responsible stance and consider the impact on future generations. The author suggests that projects, with their inherent race towards success, contradict the notion of sustainability, and maintains that as organisations engage in more projects, managers may forget to take a strategic view or ignore the long-term perspective. In addition, Dalcher points out that the more rapid the results and the shorter the delivery cycle, the less time organisations have for developing holistic thinking patterns and considering a longer-term impact on corporate decisions and actions. Dalcher adopts sustainability as a core value and a strategic vision forces a re-thinking relationship between projects and change. This approach may also engender new thinking about growth, profits, consumption, and their longer-term impacts.

Brulin and Svensson (2016) contend that even successful projects are viewed in a short-sighted way. Their research suggests that very few projects evaluate the long-term impacts. Moreover, it identifies an extraordinary level of failure in the durability of substantial change programs and projects. It offers insights into the critical issues required for long-term management with a sustainable focus and provides practitioners with a new way of thinking and considering the role of projects and the benefits they can deliver.

The authors indicate that one of the key messages is the need to move from project management (in an organisation) to a project organisation, thereby effecting a substantial change in organisational culture. Project organisations can foster a longer-term perspective with an increasing focus on active ownership, collaboration and developmental learning. Brulin and Svensson (2012)'s fundamental assertion is that developing organisational project management is essential to underpinning sustainable work methods. The substantial evidence provided by the authors demonstrates that active ownership and collaboration between different stakeholders, combined with the dynamics of developmental learning as an organisation, underpin such progress. The Brulin and Svensson study is emphasised in a proposed improvement model by its systemic structure of iterative learning through targeted professional development (see discussion later in this study).

2.16.5 PROJECT MANAGEMENT AND THE CREATION OF ORGANISATIONAL VALUE

Zweikael and Smirk (2011) discuss how project management creates value in an organisation. They suggest that executive managers are constantly pressured to bring about beneficial change, using projects as change instruments. Interestingly, they suggest that although the strategic alignment of projects has become increasingly important, not all projects necessarily arise from a strategic vision. They point out that critical initiatives can emerge spontaneously and opportunistically. The authors indicate that significant trends are emerging (Zweikael & Smirk 2011, pp. 5-6). Failure rates of projects are high despite more successes than failures, and they question whether the evidence of failure or the analysis itself is flawed. This situation is compounded by disagreement between practitioners for adopting methodologies and techniques that are primarily product-driven. The authors argue that large organisations develop their bespoke management methodologies and, as such, are potentially fragmenting the project management discipline. This customised approach focuses on effective outcome generation instead of efficient output delivery. Therefore, organisations may favour

the emergence of customisable project frameworks which can deal with project complexity in their environments. They suggest that these larger organisations also prefer the emergence of portfolios and programs to regulate project management. A critical issue they raise is the effects of the globalisation of business, whereby international projects are now commonplace. They stress that managing multiple stakeholders from different countries becomes more complex, requiring a deeper understanding of cultural diversity. This stance supports this study's view that incorporates cultural competence as a key feature in developing the proposed model.

Zweikael and Smirk (2011) also address salient issues mentioned previously in this study for businesses in project planning and management. They note that the 'traditional view of a project is incomplete and suggest that projects are intended to realise benefits rather than being to produce agreed outputs fit-for-purpose, on time and within budget' (Zweikael & Smirk 2011, p. 7). Their work is most instructive in acknowledging the need for realising program and project results that are business-oriented; linking business management with P3M.

2.16.6 RE-THINKING PROJECT MANAGEMENT

Cicmil et al. (2006) suggest that the 'actuality' of projects is essential in that refocusing on accepted practice, context-dependent judgement, situational ethics and reflexivity are critical for organisational project management. They argue that conventional, traditional project management approaches may be restrictive in an ever-changing environment. Specifically, they suggest that projects subjected to disruption and delays are constrained by traditional P3M tools, leading to more significant overruns. Offering an alternative lens, they indicate that their actuality research has important implications for professional management development (Cicmil et al. 2006). Likewise, in researching how the project management community has addressed re-thinking, Walker and Lloyd-Walker (2016) conclude that changes in emphasis in re-thinking the nature of project management have become evident (Winter et al. 2006; Cicmil et al. 2006; Crawford et al. 2006, Hodgson & Cicmil 2006; Lundin et al. 2010). This seminal work suggests that new skills are required of people working on projects, and researchers require a broader and more profound knowledge of an expanding range of management theories.

The identification of new and emerging research directions to better understand how the concept of project management has been changing suggests a need for corresponding changes in practice demanding a new set of knowledge, skills, attributes and experience (KSAEs) for project team members and especially for those responsible for initiating projects and programs

of projects (Walker & Lloyd-Walker 2016). Similarly, the 'making projects critical' movement for organisational project management is reinforced (Hodgson & Cicmil 2016). These authors suggest that generating re-thinking for project management (P3M) is becoming the norm.

Accordingly, this suggests that an improvement model must have a considerable degree of flexibility to cater for research and be adaptable to change. A model needs to address the previously stated problem that links business management to P3M. Making projects critical in organisations provides that link.

2.17 INTERCONNECTING THE RESEARCH THEMES (DERIVED FROM THE LITERATURE REVIEW)

This literature review presents, in a systematic way, relevant prior research related to the research problem, highlighting key themes that underpin a revised approach to OP3M. The following figure illustrates these themes. The interconnectedness of the themes for an improvement model arising from the review (summarised below in Figure 2.9) and portrayed as a design-thinking conceptual framework (Figure 2.10) will be further developed and explained in Chapter 3 (a two-phased prototype) and Chapter 8 (a combined model).
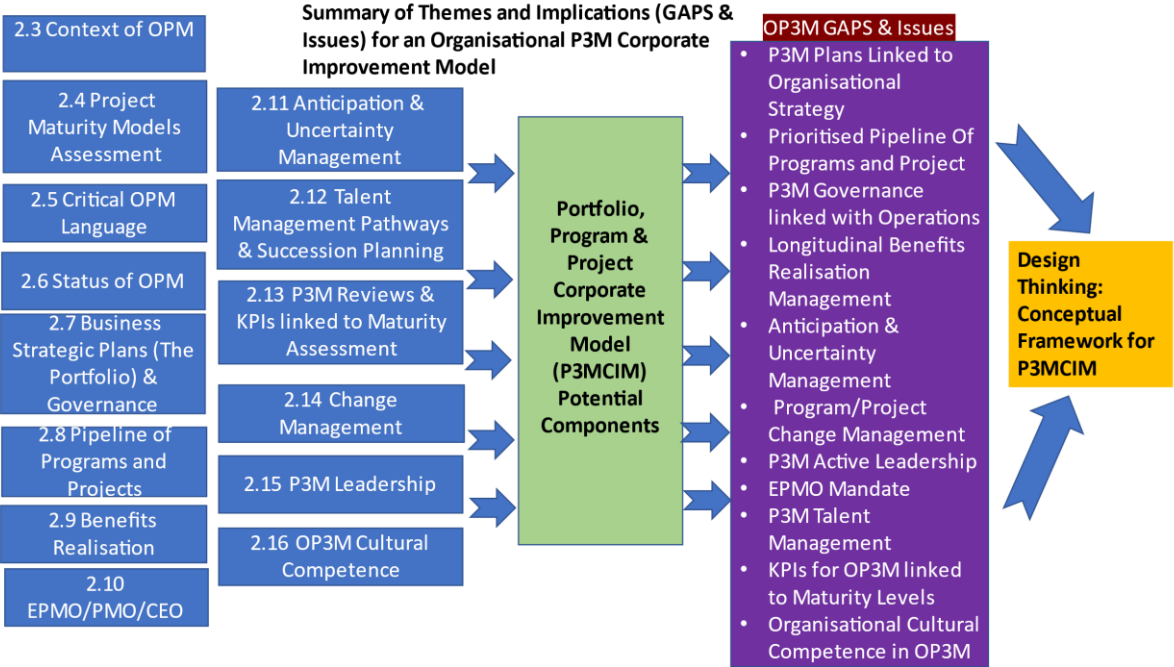
Figure 2.9 Summary of Themes and implications for an organisational P3M Corporate Improvement Model

A summary of relevant literature and emerging themes applicable to a new model is summarised

on the left. Gaps and issues are listed in the middle with the conceptual framework integration in the right-hand column. This is expanded below in Figure 2.10.

2.18 DESIGN THINKING: CONCEPTUAL FRAMEWORK FOR DEVELOPING A P3M CORPORATE IMPROVEMENT MODEL (P3MCIM): DESIGN THINKING STRATEGY
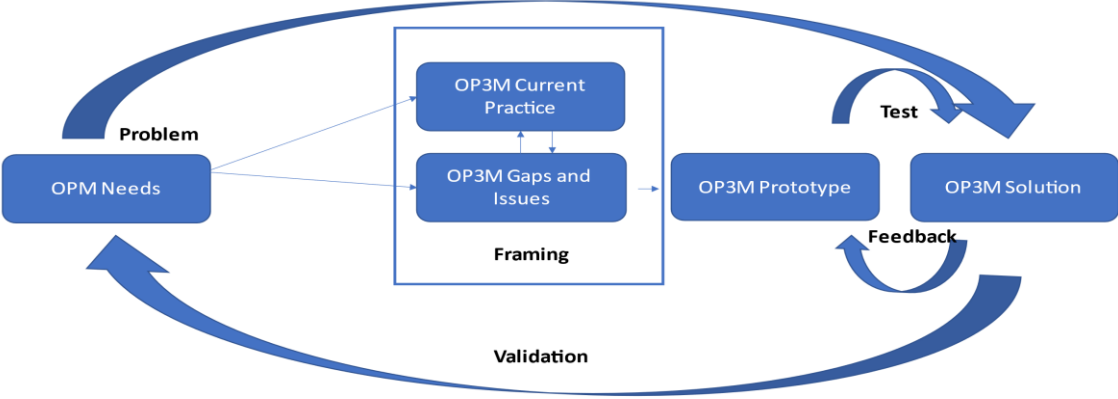
Figure 2.10 Conceptual framework for P3MCIM: Design thinking strategy

Design thinking, according to Ben Mahmoud-Jouini, Midler and Silberzahn (2016), suggests that researchers have long recognised that standard approaches to project management are ill-suited to address changes in the environment or business needs, particularly in innovative contexts characterised by uncertainty and complexity. Instead of being concerned with the efficient implementation of a specific initiative, a project in such a context becomes the process for strategy re-formulation. Three imperatives relevant to project management arise as a result: managing the explorative phase, managing the involvement of stakeholders in the project, and analysing and managing the project in relation to the changed strategic imperatives of the organisation. Ben Mahmoud-Jouini, Midler and Silberzahn (2016) propose that design thinking, a recent evolution in the field of design, can make some important contributions to these imperatives. Design thinking has been highlighted by practitioners as well as academia as a novel methodology that is potentially valuable for improving innovative outcomes whether they are products, services, or strategies.

Elsbach and Stigliani (2018) assert that design thinking comprises an approach to

problem solving that uses tools traditionally utilised by designers of commercial products, processes and environments. While design thinking was originally introduced as an approach that would work best when infused into the culture of an organisation, most early studies of design thinking focused on identifying the specific tools and methods that might be used to solve management problems. Only recently have researchers examined how the implementation of design thinking might relate to organisation-level constructs such as organisational culture.

Ostwald, Lee and Gu (2020) present new ways of facilitating design thinking through the combination of cognitive design strategies and information technologies. This provides readers with an in-depth understanding of the traditional and digital design processes and activities that are employed in architecture, computational design, communication design and graphic design. This approach will also appeal to academics, researchers and professionals with an interest in understanding design thinking in the context of creativity, collaboration and culture.

Finally, according to Liedtka and Ogilvie (2011) and Liedtka, Ogilvie and Brozenske (2014) in their action-based approach to design thinking, the framework is based on: "What Is?", "What if?", What Wows?" and "What Works?". They assert that the design thinking framework needs to reflect current reality by helping to define the problem and uncovering unarticulated needs. The idea is that the framework is human centred, user delivered and designed, and driven by stakeholders that positively influence options for a solution. However, they stress that the framework is not static, and the solution derived is always iterative.

As a result, this study has formulated a conceptual framework (Figure 2.10 above) that has been devised based on a design thinking methodology. It aims to address the 'Problem of OP3M Needs' as follows:

Step 1: Empathy for the users' need and the 'Problem' is articulated in Chapter 1

Step 2: Framing the solution is based on current knowledge as addressed through the Literature Review Chapter 2, with gaps and issues summarised

Step 3: The framing is completed by defining the characteristics of organisational capability in Chapter 3 (a prototype in two types)

Step 4: Testing the prototype is designed by way of the study's methods in Chapter 4

Step 5: Chapters 5, 6 and 7 test and record the results of the surveys, interviews and case studies

Step 6: Looping back and improving the prototype is concluded in Chapter 8

Step 7: Finalising a potential solution is concluded with suggestions for further research in Chapter 9.

2.19 RESEARCH QUESTIONS FOR THE STUDY

This review has described the problem associated with OP3M, current knowledge, and has identified those areas requiring more attention. As a result, this study will explore how, and to what extent, an organisation can improve business results by increasing organisational maturity in project management at portfolio, program and project levels. It addresses the following three research questions:

Question 1: What current maturity models are employed for organisational change in project management, and what components need to be considered for OP3M improvement? (Primarily the literature review, but will be supplemented by material derived from the surveys, expert interviews and case studies)

Question 2: What does a next-generation OP3M improvement model look like, and how does it differ from Australia's approach to project management? (A prototype model will be reviewed by peer experts and applied in the case studies)

Question 3: What are the organisational benefits of applying a model to Australian and international business contexts? (Explored through expert interviews and case studies)

Research issues for each question include:

Question 1:deciding on what models and how many to investigate; analysing the components of each for an improvement model; researching and determining topics that relate to potential components; deciding on the currency and applicability of literature; designing and publishing surveys; deciding on target population for surveys; recording and analysing survey results; deciding on the target population for interviews; recording and analysing thematic results; deciding on case studies, gaining approval and recording results; analysing case study results.

Question 2: designing and formulating prototype model/s as a result of the literature review; reviewing the prototype/s with a selection of peers and practitioners; testing the model/s within case study environments.

Question 3: prototype model/s to be considered and discussed with peers/practitioners; benefits and drawbacks to be discussed with interviewees and case study managers.

Chapter 3 explains how a prototype model is structured to confirm this study's approach to developing an eventual model.

CHAPTER 3: A CORPORATE IMPROVEMENT MODEL FOR PROJECT MANAGEMENT: DESIGN THINKING PROTOTYPE

3.1   INTRODUCTION

Noting the background and problem statement of the study (Chapter 1), the design thinking approach adopted to develop an evidence-based solution to the problem, and the extant literature on the topic, this chapter takes the key themes from the literature review and uses them to develop a prototype corporate improvement model of two types: one for less mature organisations and one for mature organisations. The development of the model is based on the design thinking of Ostwald, Lee and Gu (2020) explained at the conclusion of Chapter 2. This conceptual framework informs the design of the prototypes for testing as described in Chapter 4 (Research Methods). In framing a solution for the OP3M problem (outlined in Chapter 1), Chapter 2 provided relevant themes, whereas this chapter completes the framing of a solution by identifying specific needs to realise a practical-based organisational capability development model. The chapter is arranged as follows:

3.1 - Provides further background to the rationale for a prototype model for testing and the model's working title

3.2 - Further defines the purpose of the prototype model

3.3 and 3.4 - Define how the phases of the model are applied to immature and mature organisations

3.5 - Discusses additional causes of failure applicable to current modes of practice

3.6 - Explains the prototype model

3.7 and 3.8 - Explain Phases 1 and 2 of the prototype model

3.9 - Draws conclusions about how the prototype model will be tested in surveys, interviews and case studies.

Appendices to the study provide additional templates and explanations to support the prototype model.

3.2 DEFINITION OF P3MCIM'S PURPOSE: AN EXPLANATORY MODEL

The purpose of the P3M Corporate Improvement Model (P3MCIM) is to enable organisational P3M improvement towards greater capability maturity accompanied by a strategy and plan, and linkage with business management (as stated in Chapter 1). Firstly, the term 'organisational' in this context increases the domain of project management beyond the delivery of a single project to include programs and portfolios. Secondly, the term 'improvement' implies that capabilities can be increased or enhanced to produce repeatable project management success organisationally. Thirdly, 'maturity' is defined as the entire development or perfected condition through the adoption of OP3M in conjunction with business management and corporate improvement strategies. OP3M maturity also suggests understanding why success occurs and rectifying or preventing commonly occurring problems. Fourthly, the term 'model' implies change, a progression, or steps in a process that include measurement against defined criteria.

In addition, the term 'model' is worth exploring in more detail. Craver (2006) suggests that models play many roles: they are used to make precise predictions, summarise data, and demonstrate surprising and counterintuitive consequences of particular forms of systematic organisation. Some models have an additional property: they are explanations. Craver examines distinctions between phenomenal models and explanations, between sketches and complete explanations, and between models. The author further suggests that explanatory models are much more helpful than merely phenomenological models for control and manipulation. He concludes that mechanistic models have two types: Type A 'how possibly models' and Type B 'how actually models', with the former describing how parts, processes and activities might be organised such that they produce the phenomenon, versus the latter which describe fundamental components, parts, procedures and organisational features of the 'mechanism' that creates the phenomenon. The P3MCIM prototype model falls into the latter Type B. It produces a systemic structure and associated methods (underlying mechanisms) that explain an overall framework for change and aims to achieve measurable P3M improvement and maturity sustainability.

Taking Craven's appreciation of models further, Bokulich (2011) points out that models may be fictional, phenomenological or explanatory. They function as either 'proto-theories, pedagogical devices, or as tools for generating and testing hypotheses' (Bokulich 2011, p. 33). The function of the P3MCIM is to be explanatory and "give genuine insight into the way the

world is" (Bokulich 2011, p. 44) and uniquely describe underlying mechanisms (i.e., through each component of the P3MCIM). It also generates and tests the P3M change and improvement hypothesis by gauging performance through health checks, KPIs (for projects and personnel linked to organisational maturity levels), actual short-term and long-term results (benefits), and investment returns.

3.3 IMMATURE ORGANISATIONS IN OP3M

In developing the prototype model, the first analysis determines an organisation's context and maturity level in OP3M. An organisation that is immature in management terms may occasionally deliver individual initiatives that produce excellent results. However, managers are more likely to be working reactively, focusing on solving immediate issues whereby schedules and budgets may be exceeded because of a lack of sound estimating techniques and controls. For example, if imposed deadlines occur, the quality of deliverables may be compromised to meet the schedule and verification, and validation activities (including reviews) are rarely used or even omitted if an initiative falls behind schedule.

This study contends that any proposed improvement model should provide a practical focus that integrates with common management practices. A helpful model should have basic techniques and tools for OP3M that can be applied given the managers' behaviours, competencies and proficiencies. In the absence of an organisation-wide infrastructure, results depend on the availability of individuals with demonstrated OP3M capabilities and a proven track record. In immature organisations that rely on these individuals, continuity and sustainability are likely to be at risk.

3.4 MATURE ORGANISATIONS IN OP3M

From a practice perspective, this study maintains that a mature organisation includes an organisation-wide ability for managing initiatives based on standardised, defined business and OP3M management processes. These processes can be tailored to meet specific organisational needs and are updated whenever necessary, with improvements developed and implemented following a sound program/project business case, development, and execution plan. The standardised approaches, and techniques and technology to support them, are communicated to team members and follow procedures and defined processes. Roles, authority levels and responsibilities are well established and clearly understood across the organisation. Managers need to monitor initiatives against appropriate plans, including the quality of deliverables and

customer satisfaction. There needs to be an objective, measurable basis for judging the quality of deliverables and analysing any problems or other issues at the program or project level.

As suggested in the P3MCIM model, maturity levels should indicate how key process areas can be structured to provide transition states for organisations wishing to set realistic and sensible improvement goals. The levels should facilitate the transition from immaturity to a mature and capable organisation, with an objective basis for judging the quality and solving program and project issues. In this study, KPIs are linked to maturity levels for that purpose within the context of business and project/contract reviews. As explained in later chapters, each KPI includes five levels of project management maturity (described in Chapter 2). The prototype model includes KPI's that incorporate maturity levels and actions for improvement; a unique aspect of the model.

3.5 CAUSES OF FAILURE AND CRITICAL SUCCESS FACTORS: ADDITIONAL CRITERIA FOR A P3MCIM PROTOTYPE MODEL

A further examination of the causes of failure, and more pertinently, an analysis of success factors, is necessary to develop a prototype model. In addition to the suggested components, these additional factors will provide supportive criteria for a prospective model's success. Extensive research by the United Kingdom Office of Government Commerce has investigated the common causes of program and project failure, and how these causes can impact organisational outcomes (Commerce 2005). Its research highlights the following causes of failure: project design and definition of outcomes; decision-making and lack of sponsorship and commitment; project-related disciplines such as risk and change management; supplier management and inappropriate contract management; people management including stakeholder engagement, lack of ownership, and cultural issues; lack of clear links between the project and the organisation's key strategic priorities, including agreed measures of success; lack of transparent senior management and Ministerial ownership and leadership; lack of competency in OP3M; and lack of a proven approach to project management and risk management; and a lack of effective project team integration between clients, the supplier team, and the supply chain.

These types of failures are (usually) initially identified in the primary analysis of an organisation, as explained in the first phase of the prototype model. They will be cross-referenced and included as risk mitigation actions in the KPI/Maturity component of the second phase of the prototype model.

Other authors have concentrated on success factors for OP3M and how their attainment can affect project and organisational outcomes. For example, Thi and Swierczek (2010) studied successful project performance based on key factors determining project success. These included cost, time, technical execution and customer satisfaction. Regression analysis was used to test five hypotheses developed from theories of project success. The authors found that manager competencies, member competencies and external stability have significant positive relationships to the success criteria. These three criteria are prominent in the prototype model. However, the authors also found that the implementation and completion stages in a project's life cycle are positively related to success. They determined that the implementation stage of a project moderated both external stability and organisational support of success. These issues for project managers imply that implementation is the critical stage in determining the success of projects. Thus, their study indicates that while an overall model may be present in an organisation, it is mostly how a project or program is implemented and subsequently conducted that establishes its success. The prototype model addresses this criterion through managers' professional development based on 'live project' workshops or case studies. The prototype model also addresses how an organisation works with various third-party external suppliers and factors influencing results.

In their study of total quality management and business excellence, Mas-Machuca and Martinez (2012) established that both knowledge management (KM) and critical success factors (CSFs) are new issues in the current project management success discourse. Knowledge is an essential driving force for business success and competitiveness, especially in the consulting industry, whose core business is to sell knowledge itself. Their paper aimed to identify that the CSF in a consulting firm (for strategic, cultural and technological factors) would build a successful model for designing KM projects based on the CSF identified. This model was tested using a structured equation model. The authors underline the need for professional development in knowledge management and relate it to CSFs that are part of program and project design. Of note for developing a prototype model is that the Mas-Machuca study links professional development with program and project outcomes (i.e., CSFs).

Moreover, Akhavan and Zahedi (2014) also studied CSFs for KM in project-based organisations through multi-case study research. They state that most studies have emphasised a single company's success factors and not considered them integrated through several cases from various industries. Their paper aimed to study the CSFs through a multi-case approach. The extracted results gave the CSFs for KM in project-based organisations. The execution of KM (for programs and projects) inside the project organisation, once again, requires accurate

and precise alignment of business strategies and operational procedures. Therefore, the current study is among the few multiple case studies in KM of project-based organisations which help executives construct comprehensive and efficient plans to yield better results at lower costs. This study closely aligns with the emerging prototype model which approaches each organisation with adaptability in mind but relies on a stable and common approach supplied by a P3M framework backed by methodologies, procedures and toolsets/technology, and managed by a results oriented PMO.

Hwang, Zhao and Ong (2015) state that value management (VM) is an effective method for achieving the best value-for-money for clients' projects in the construction industry. Their study investigated the VM implementation status in building projects in Singapore to identify the CSFs for VM and assessed the potential risk factors associated with VM studies. This study reported communication and interaction among participants as the most critical factor for VM success. This study also highlights VM's and risk management's (RM) relationship and identifies the critical risks associated with VM based on its criticalities, considering their respective likelihood and impact. While the prototype model does not highlight VM, it does incorporate risk and opportunity. Nevertheless, VM would be a valuable inclusion in portfolio and program managers' professional development. It does, however, highlight the priority for proper communication between all participants for program and project success, which is a significant component of the prototype model.

The project management literature on project success is significant, according to Blaskovics (2016). Numerous studies focus on the evolution of understanding project success, and identification of CSFs. CSFs increase the potential for achieving project management success, while project success is evaluated with objective success criteria. Although the interrelationships between CSFs and success criteria are rarely analysed, there is a strong demand for such analyses. The aim of this paper was twofold. First, to identify the impact of one of the CSFs (the project manager's project management attitude) on project success. Second, to highlight the interrelationship between three CSFs: project manager's personal behavioural characteristics, project management attitude, and leadership style. These aimed to address the shortcoming mentioned above, considering the lack of interrelationships between CSFs and success criteria. The prototype model promotes an investigation and analysis of managers' knowledge, skills, and attitudinal readiness to undertake their work, issues that are essential to professional development, and talent management within organisations.

Osei-Kyei and Chan (2017) aimed to explore the perceptual differences in the factors contributing to the successful management of public-private partnerships (PPP). Their research

findings showed that each stakeholder group considered an efficient and well-structured payment mechanism as the most crucial operational management CSF. Moreover, the public sector considered open and constant communication among stakeholders as the second most crucial CSF. In contrast, the private and academic sectors considered effective operational risk management and a well-structured legal dispute resolution mechanism essential. Further analysis using non-parametric tests (i.e., Kruskal–Wallis and Mann–Whitney U statistics) revealed significant differences in the importance of three operational management CSFs: open and constant communication among stakeholders, effective changes of shareholdings in the private consortium, and stable macroeconomic indicators. Once again, this emphasises how future managers need to rely on effective communication, acknowledge the external environment, and depend upon cooperation and collective effort from all stakeholders (internal and external) to achieve overall success, as highlighted in Type 2 of the prototype model. Furthermore, the study suggests that a model also needs to relate to the organisational strategy and its forecast of external influences gauged through market analysis and trends (discussed later in Chapter 6). These issues have all been considered and incorporated into the prototype model.

Finally, the Kiani Mavi and Standing (2018) study identifies many factors that influence the success and failure of projects, however they assert that current literature lacks an inclusive categorisation of these factors. Their paper aimed to identify the CSFs of project management and categorise them into five criteria groups: project management, organisation, external environment and sustainability. The research identified the cause-and-effect criteria of CSFs and determined their weighting. Their method indicated that organisation, external environment and sustainability are 'causal' criteria, while project and project management are 'effects' criteria. The findings revealed that the highest weightings are assigned to top management and sponsor support(s), stakeholder expectations and end-user-imposed restrictions, respectively. Project managers can significantly improve project success by focusing on higher priority CSFs rather than paying equal attention to each of them. This final research paper highlights why the proposed prototype model emphasises the involvement of senior management and cooperation with project managers to attain project and organisational success.

3.6 PROPOSED PROTOTYPE MODEL: TWO TYPES OF P3MCIM

The first prototype P3MCIM model builds on a similar model (Type 1) employed by the researcher whilst working in Australian project management consulting companies since

1998. The earlier model was used (variously, not wholly) in private and public sector organisations. As all of the organisations were of a low level of PM Maturity, activities centred on building a PM System and complementing it with competency-based training/coaching and qualifications/certifications. Only one organisation (Boral Ltd) progressed to business-related measurement. The versions, proposed by this study, build on this experience and includes two types to encompass the additional functionality suggested by the review of the literature presented in Chapter 2. The other criteria (success factors) have been discussed above and appear in the diagrams below.

3.7   CONNECTION WITH PM METHODOLOGIES AND TRAINING AND LEARNING FRAMEWORKS EMPLOYED IN THE P3MCIM

Types 1 and 2 of the prototype P3MCIM model are based on a systems cycle commonly adopted by existing project management methodologies, and best illustrated by Kerzner's summary of stages: concept, development, implementation and finalisation (Kerzner 2017a). He suggests that each stage, depending on the project's or program's complexity, may have extensive activities, however, in developing the P3MCIM, the researcher has limited these activities only to those considered essential. The model also includes two frameworks for professional vocational development: the ADDIE and the 70:20:10 frameworks. The latter being supported by higher education strategies (described in Chapter 2).

The components of the P3MCIM are arranged similar to those used in instructional systems design frameworks: analysis, design, development, implement and evaluation (ADDIE) (Forest & Morrison 2010), and are presented in Figure 3.1. Consequently, each of the phases incorporates:

1. an analysis of the state of readiness of an organisation for P3M, and outlines measures to enhance its maturity (Concept stage)
2. what needs to be designed and developed to suit those parameters (Development stage)
3. what learning interventions, change management and business solutions are proposed to be undertaken (Implementation stage)
4. an evaluation of results (Finalisation stage).

This concept is similarly applied to the prototype P3MCIM model, where suitability and application are reviewed and evaluated against the organisation's aims, scope of the managers' professional work, and the results of the application of the model. More importantly, an organisation can select the relevant parts of the prototype model to suit their specific

requirements and the model can be entered at any point. For example, an organisation may want to improve its project management expertise by developing its managers' practical knowledge, skills, qualifications and certifications. These issues may be addressed with an initial briefing and familiarisation, however, a fully designed analysis of the organisation's P3M needs, and operational context would be recommended before a suitable program could be designed and developed. Alternatively, PHCs could provide the basis for examining the OP3M framework, governance and professional level of expertise, and provide vital information and value back to the organisation.

The sequence and integration of the model will be further tested and discussed using an analysis of the surveys and interviews in Chapter 5, and the analysis of case studies in Chapter 6.

3.8   PROTOTYPE P3MCIM: TYPE 1

As already highlighted, the model consists of two types. Type 1 (Figure 3.1) is designed for less mature organisations, and Type 2 (Figure 3.2) is appropriate for more mature and complex organisations.

The sequence of activities in the following diagram should be employed in organisations with little or no OP3M functionality or capability. The emphasis is on creating programs and projects planned and delivered against an agreed, contextualised OP3M framework. Managers are trained and coached in their use, and the results are measured via health checks that assess the outcomes and overall benefits to the organisation.
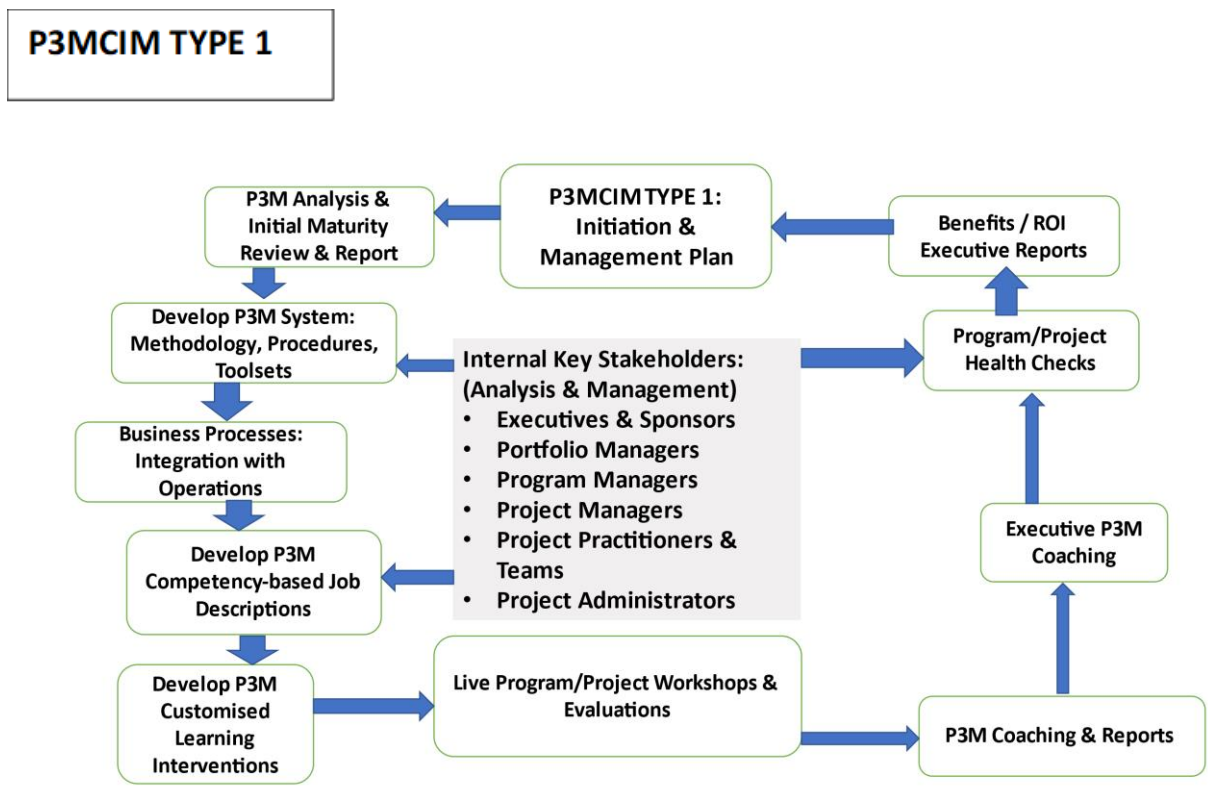
Figure 3.1 Prototype P3MCIM: Type 1

3.8.1 OVERVIEW OF TYPE 1

Type 1 begins with an Initiative and Management Plan (top of Figure 3.1) to proceed with an appropriate level of investigation to improve performance and realise better results for programs and projects. This plan provides executive agreement to proceed. Ideally, the following components outlined below need to be completed before moving to the next, and the model's arrows show this dependency. The final dotted arrow indicates that the model reports continuous improvement and related strategic initiatives to the executive.

3.8.2 INTERNAL KEY STAKEHOLDERS: CENTRALITY AND RELATIONSHIP TO THE COMPONENTS

Internal key stakeholders, business executives (usually sponsors), portfolio, program and project managers, teams and administrators are central to the model. They are integral to the planning and execution of each phase of a program or project. They are not explicitly assigned to any separate model component, but the model will not be effective unless these representatives are drawn from all related program or project cycles. The list is not definitive as it may also include marketing and sales managers, events managers, quality managers and

production managers. External stakeholders are identified and included in the program and project plans. The internal stakeholders sign on to an OP3M improvement initiative to reflect that the way of doing business will change. At this point, the leadership required within the organisation to effect change management is a critical factor. While an external consultant may be employed to advise on the improvement initiative, senior management will need to drive the organisation's change. (See Appendix A Tools and Templates: No 1 Stakeholder Analysis and Management Matrix.)

3.8.3 FEATURES OF TYPE 1

The Initiation and Management Plan is developed from analysing executive reports, briefs and business results that indicate the need for corporate improvement in OP3M. An explanation of Figure 3.1 components (above) follows. The OP3M Analysis and Initial Maturity Review and Report identifies agreed priority needs as a basis for maturity enhancement. Developing an OP3M Framework is essential as a precursor to developing job descriptions and is health checks. As indicated in the figure above, the following five boxes are connected as part of a training systems cycle of continuous improvement in competency development to the Executive level. The competency-based job descriptions provide the basis for developing customised learning interventions for internal personnel (internal stakeholders). The customised learning interventions provide the basis for program and workshops, where current or prospective programs and projects are analysed and planned. The workshops refer to learning opportunities that can be delivered through face-to-face and/or online modes. They are evaluated for continuous improvement and recommend coaching for those managers requiring assistance. Coaching should be undertaken for program and project managers and executives, producing future action reports for all participants.

After training/learning options have been considered and undertaken, these personnel are deemed sufficiently competent to manage programs and projects and conduct Program/Project health checks (external consultants may be used to assist with these). Health checks report back to senior management and teams on the effectiveness of managers' applied learning and results realised by programs and projects. The health checks are an essential component of the OP3M Framework. The Benefits/ROI Executive Realisation Reports validate that the corporate improvement model is working or that further refinement is needed and measure the outcomes of the original plan.

Further Information about Type 1:

1. A list of P3MCIM tools and documents is included at Appendix A.

2. Each component of the model in Figure 3.1 is defined and further explained in Appendix C.

3.9   PROTOTYPE P3MCIM TYPE 2

The following improvement model is designed for more mature organisations (Figure 3.2). It assumes that Phase 1 has been achieved. Phase 2 focuses on portfolio and program outcomes involving a much wider external audience and a higher level of organisational expertise.
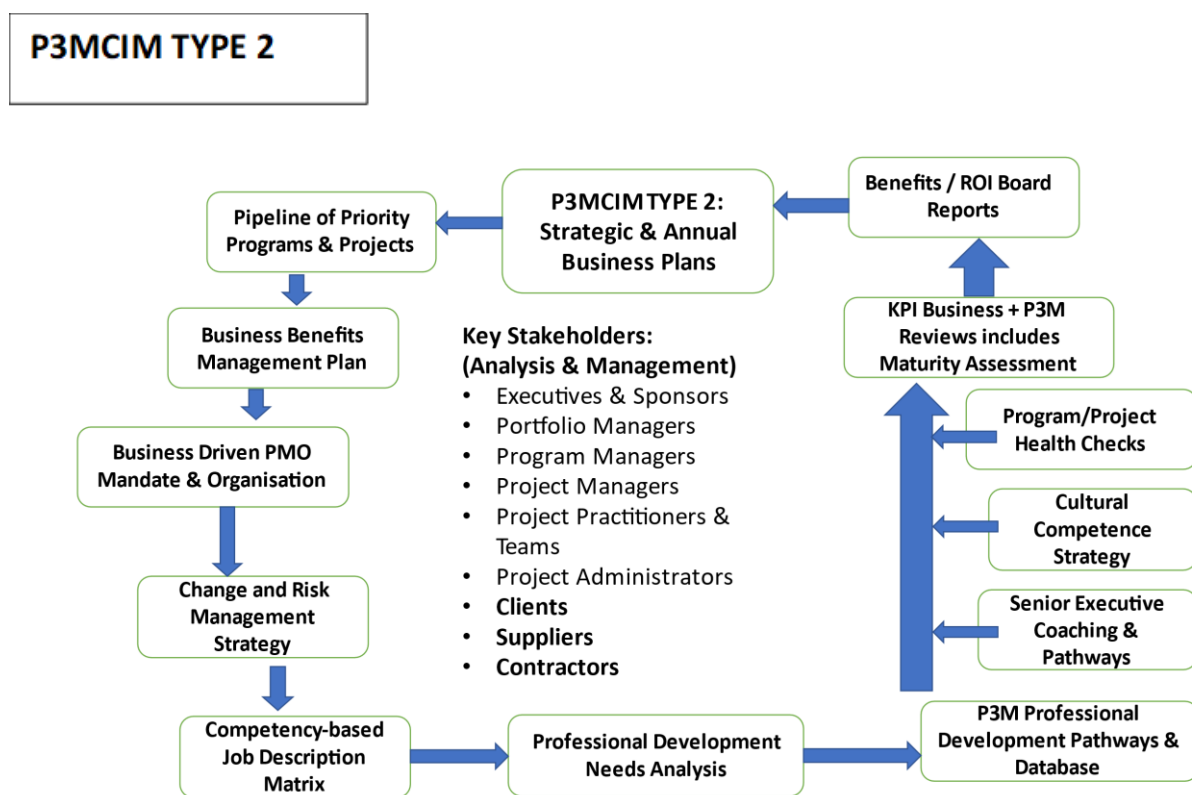
Figure 3.2 Prototype P3MCIM: Type 2

3.9.1   OVERVIEW OF TYPE 2

Type 2 assumes all the components of Type 1 have been addressed, but the focus is more on overall business strategy and performance, corporate improvement and business maturity. Like Phase 1, it begins with a thorough investigation of strategic and annual business plans to derive an Initiative Management Plan. Engagement with all management levels is necessary and usually constitutes several briefings to explain the initiative and garner support. Like Phase 1, the arrows indicate a dependency on the step before having been completed.

3.9.2 KEY STAKEHOLDERS

One of the critical differences in Type 2 is that external stakeholders (shown in Bold) are included as an integral component to provide feedback and input on the organisation's performance. The intent here is that they contribute to organisational success as part of a more extensive team effort.

3.9.2.1 KEY INTERNAL STAKEHOLDERS

Like the Type 1 model, the Type 2 model includes business executives (usually sponsors), portfolio, program and project managers, teams and administrators. Too often, only project managers are included in the analyses for effecting improvement in OP3M. In contrast with Type 1, Type 2 includes board-level executives and, depending on its structure, the more extensive parent or connected association executive groups.

3.9.2.2 KEY EXTERNAL STAKEHOLDERS

While key external stakeholders are identified and included in program and project plans, Type 2 consists of a more formal structure to underpin the organisation's relationship with its clients through a Client Relationship Management database (CRM) and its Suppliers and Providers (through contractual agreements). Both of these strategies underscore the importance of maintaining long-term relationships to ensure reliability and long-term sustainability.

3.9.3 FEATURES OF THE TYPE 2 MODEL

Type 2 also includes an Initiation and Management Plan; however, it is included in the change management strategy and the OP3M maturity analysis. The annual business plans are the business drivers for the organisation. They are linked to board reports and Benefits/RoI reporting. Programs and projects are linked and prioritised into a pipeline and integral to strategic and business planning. The benefits to be realised are defined and reported on in subsequent plans. This step is strongly associated with the KPI reviews of the proposed improvement model. A version of a PMO (enterprise, program or project) is given a mandate by the organisation to provide a source of reference and organisation for all programs and projects. As such, it is a centrepiece of program/project capability for the organisation as a whole.

The next box is standalone (and can be employed anywhere in the model) to indicate change management's priority in changing the P3M culture. The following four boxes are linked to a training system cycle of continuous improvement in competency development. The Job Descriptions Matrix is the basis for developing customised learning interventions required by all stakeholders (internal and external).

Professional development needs analysis for crucial personnel and pathways are developed for their long-term needs and succession planning. Professional development interventions still include Live Program and Project Workshops; however, a more extensive range of learning solutions at Vocational Education and Training (VET) and HE levels are included. The workshops are evaluated for continuous improvement and recommend coaching for those managers requiring assistance. Coaching is still undertaken both for program and project managers, and reports are produced for all participants. Executive development pathways and succession planning are significant components in this step.

At this point, managers are deemed sufficiently competent to manage programs and projects and conduct health checks, and executives should be included in health checks as sponsors. Health checks report back, to senior management and teams, on the effectiveness of the applied learning of managers and results of programs and projects. A key difference in this prototype is the inclusion of business and OP3M reviews. KPIs link to actual results in programs and projects and how management functions have been realised. This step corresponds with the pipeline's realisation of benefits to the organisation. Board reports, benefits realisation and ROI reporting is undertaken to validate that the OP3M system and corporate improvement model are working.

Further Information about Type 2:

1. A list of P3MCIM tools and templates, and Type 2 documents is included at Appendix B

2. Each component of the model in Figure 3.2 is defined and explained further in Appendix D.

3.10 CONCLUSION

The purpose of this study is to improve on current OP3M practice by developing a prototype P3MCIM model for testing in accordance with the design thinking approach adopted by the study. Each model should also address the overarching problem of linking business and

P3M management. While limitations have been identified, the primary intention of the eventual P3MCIM model is to address identified failures in OP3M by articulating CSFs, using program and project objectives, and analysing corporate/business results through health checks, KPIs and benefits management reporting.

Chapter 4 of the study will outline the methods used to gather evidence to further investigate the design of the eventual P3MCIM model.

CHAPTER 4: RESEARCH METHODOLOGY AND METHODS

4.1 METHODOLOGY

4.1.1 INTRODUCTION

This chapter presents the research methodology and outlines the methods used by the researcher to develop and test the key components of the prototype models presented in Chapter 3 in accordance with the design thinking approach adopted by the study. The Chapter is organised as follows:

4.1 presents the research design and methodology elements

4.2 outlines the data collection methods used for the online surveys, interviews and case studies

4.3 explains the data analysis methods

4.4 states the potential limitations of the research

4.5 explores the issue of researcher bias

4.6 outlines key ethical considerations

4.7 concludes the chapter.

In Chapter 3, the researcher proposed two types of P3MCIM prototype models and explained their components and relationships. The structure of the prototypes was initially derived from a model used by practitioners in the context of previous consultancy work. The ensuing prototypes developed by the researcher use the earlier model and draw on insights from the literature review of current theory and practice to enhance its components (Chapters 2 and 3). This chapter aims to present the prototype testing methodology and provide an overview of the relevant inquiry and research process phases.

In its most elementary form, the term 'method' describes what is to be undertaken (the phases, activities and tasks) in an initiative or process. In P3M, methods represent standards, frameworks and governance structures. In this study, the proposed model for P3M encompasses a broader approach that aims to transform and improve organisations. It describes a system of methods for integrating and embedding OP3M as a discipline in a broader range of functions. It also includes underlying principles used by authors who have researched this field in corporate contexts.

The research methodology adopts a mixed-methods approach. Bentahar and Cameron (2015) note that mixed method approaches in project management research have increased only marginally since 2004 and are not keeping pace with mixed methods in other fields of management research. They suggest that this is due to the challenges in clearly identifying the project management discipline against the guidelines for reporting derived from the mixed methodology literature. Some project management research work has, nevertheless, been conducted with a mixed methods approach. Productive references in this field have been documented by Pasian and Turner (2015), Cameron and Sankaran (2013; 2015), Thomas and George (2015), Bosch-Rekveldy (2015), and substantive work by Bentahar and Cameron (2015). A description of each follow.

Pasian and Turner (2015) have documented several authors using challenging designs, methods and practices for the research of project management. The collection of original works looks at research strategy, management, methodology and techniques, as well as emerging topics such as social network analysis. The Pasian and Turner chapters offer an international perspective with examples from a wide range of project management applications: engineering, construction, mega-projects, high-risk environments and social transformation. Maylor and Söderlund (2015), for example, discuss the importance of having a research strategy and consider that project management theory, brought in from recognised disciplines, is essential in developing research. Young (2015) challenges current thinking about PM, arguing that researchers should broaden their perspectives from the reductionist, tools and techniques-based view of PM, and explore other aspects of the domain such as cultural dimensions (see this thesis Chapters 8 and 9). Bredillet (2015) builds on project management schools of thought and discusses the main aspects for research of paradigmatic science (see this thesis Chapter 4), an ontological argument about the existence of projects and their management, and the relationship between theory and practice (see this thesis Chapter 5). Klakegg (2015) discusses how difficult it is to isolate the researcher from the research (discussed below in Section 4.1.3.1). And Klein and Weiland (2015) look at research as both a process and a project with the experience of the systems excellence group as a case study (see this thesis Chapter 5).

The Bentahar and Cameron (2015) findings suggest that several questions need to be answered as follows:

'Why should mixed methods research be used for organisational project management? What should the implementation order be? What is the study's perspective, and the degree to which quantitative and qualitative data is combined? Moreover, what is the weight of the qualitative

and quantitative methods to specify the type of mixed methods research?' (Bentahar & Cameron 2015, p. 4).

This study aims to address these questions by describing the objectives of the research strategy based on a mixed methods approach. The approach specifies an implementation order, outlines the perspective of the study using surveys, interviews and case studies, and decides on a combination and the weight of the qualitative and quantitative methods. The study's methodology (Figure 4.1) is structured as follows:

Study

| Methodology of the Study – Design Thinking - Phases of design thinking in the study | Phase 1 Empathy Phase 2 Framing
Phase 3 Testing Prototype
Phase 4 Modify Prototype |

| Pragmatism paradigm
Purpose: to test the prototype models | Research Design:
Explanatory mixed methods design | Methods: Stage1 Survey (Quant)
Stage 2: Interviews (Qual)
Stage 3 Case Studies (Qual) |
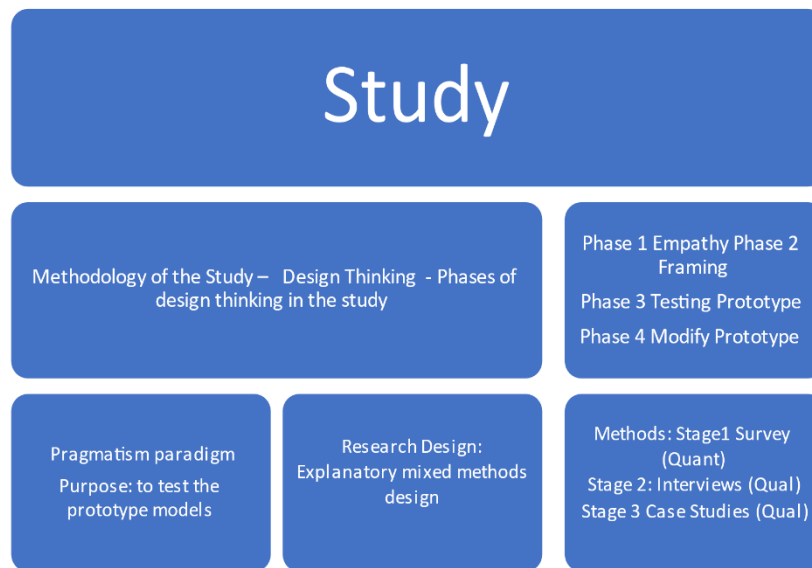
Figure 4.1 Methodology of the study

4.1.2 RESEARCH QUESTIONS

This study will explore how and to what extent an organisation can improve business results by increasing organisational maturity in project management at P3M levels. The research questions supporting this statement were presented in Section 2.19.

Chapter 3 presented a response to Research Question 1 and was informed by the literature with reviews and practitioner insights culminating in prototypes (P3MCIM) for testing.

4.1.3 METHODOLOGY PHILOSOPHY

Insider and Outsider Researcher Concept

The researcher has been involved in consultancy work across various management contexts and levels in OPM. The researcher has also provided professional development training and certification assessments with personnel in the selected case studies and KPI

maturity reviews with senior managers. Given these parameters, it is essential to determine whether the research results are derived from an insider or outsider viewpoint.

In their commentary on insider action research projects, Coghlan and Shani (2005) state that managers are increasingly undertaking action research projects (within their organisations) that involve planned interventions in real-time situations. They acknowledge that insider action research has its own dynamics, distinguishing it from an external action research approach. They suggest that the problem is that manager researchers need to combine their action research role with their traditional organisational functions. This duality can create the potential for role ambiguity and conflict which affects the value of the research. They state that such action research contributes to the organisations' learning given that the insider researcher engages across differing levels with individuals, teams and interdepartmental groups, which can enhance the learning and change processes. In this study the researcher overcame this problem in his role as an external consultant and change management guide.

Also, according to Mercer (2007), the insider/outsider dichotomy is a continuum with multiple dimensions. Mercer suggests that all researchers constantly move back and forth along several axes. As a result, he emphasises that this can be problematic regarding informant bias, reciprocity in interviews and research ethics. On the other hand, Dwyer and Buckle (2009) pose the question as to whether qualitative researchers should be members of the population they are studying or not. They argue that although a dichotomy exists, qualitative research has many advantages from both an insider and outsider perspective. They explain that exploring the complexity and richness of "the space between" explores entrenched attitudes and leaves qualitative researchers well equipped for the challenges they face (Dwyer & Buckle 2009, pp. 60-2). The relevance of this approach is critical in this study as it allows the researcher to explore attitudes and behavioural characteristics of P3M managers that will potentially enable a model to function in a real-world (paradigmatic) setting.

As a result of these perspectives, the researcher uses an insider/outsider approach as it allows multiple dimensions of the study to be informed, particularly for information derived from the case studies. The researcher's work with clients has involved considerable corporate problem identification and the development of solutions for OP3M. His involvement with these organisations has ranged from one to 10 years (per organisation). These capabilities position the researcher within the field to be studied, however, while these capabilities are likely to positively contribute to the study's depth, strategies to control bias have been incorporated into the methodology.

4.1.4 PARADIGM OF THE STUDY

A pragmatic paradigm will be employed by the study that is workplace-oriented, with current executives and managers providing evidence of application to their businesses or organisations. Pragmatism suggests that the research is designed to respond to a real-world problem. As such, pragmatism is primarily problem centred and seeks to present evidence that is true for that problem in its current moment in time (Creswell 2014).

The pragmatic paradigm refers to a worldview that focuses on 'what works' rather than what might be considered absolutely and objectively 'true' or 'real' (Frey 2018). Having worked closely with a wide range of managers, the researcher has the experience and attributes to elicit targeted and specific information from selected professionals (peers) to assist in testing and further developing the modified OP3M model (P3MCIM).

4.1.5 NATURE OF THE PROBLEM

The issue of developing an improved OP3M model that can be applied to any organisation has been piecemeal, with authors (Chapter 2) debating whether maturity assessment models meet organisations' needs. Chapter 3 outlines the two types of prototypes and describes components and underpinning activities. The prototypes were developed using extant literature, documentation and explanations (see the Appendices) that have not been employed previously. While the suggested prototype models (P3MCIM Types 1 and 2) provide a proposed organisational project management and maturity assessment model, including other factors (drawn from the research in the literature review), the adaptive model allows for customisation, contextualisation and further development instead of a lockstep formulaic approach. The researcher suggests that a mixture of subjective (qualitative) and objective (quantitative) data and analysis is appropriate for testing the prototypes. This follows the suggestion that mixed methods research design is appropriate for a pragmatism approach.

According to Wills and Lake (2021), advancing a pragmatist paradigm recognises that truth and knowledge are contingent rather than universal. They indicate that pragmatism is subject to continuous experimentation rather than ultimate proof. Findings are verified in their application in action rather than in the accuracy of their representation of an antecedent reality. In the context of this study, pragmatism provides a suitable lens to a practitioner's world view of business and project management and includes the uncertainty and randomness of a workplace while not being confined to any sector. This study seeks to capture whether the suggested prototype models for OP3M are practicable and can be further modified to be of value to industry.

4.1.6 RESEARCH DESIGN AND STRATEGY OF ENQUIRY

4.1.5.1 RESEARCH DESIGN

This study is explanatory in that it seeks to explain the components of the prototype models and test their application. In considering the most appropriate research design for the study, it is noted that the P3M environment differs according to different workplace environment complexity and lived reality.

As such, a combination of qualitative and quantitative methods seeks to gain a depth of understanding of the phenomena while inferring a broader breadth of application. Bentahar and Cameron (2015) note that this combination of methods focuses on the methodology as a connection centre of abstract levels of epistemology (theory of knowledge) and mechanical methods and is motivated by a hybrid exploration of complex phenomena and processes. In this study, the quantitative data will be collected from two surveys from populations of the suggested P3MCIM components, their applicability, and application against the functions proposed under the suggested prototypes. The target population for the collection of qualitative data will be project management consultants, peers and experts, executive/business managers, and program/project managers working in their business/agency/commercial environments. The most critical intended outcome of the study is that it is relevant to current work/business environments and that the resultant modified model for organisational portfolio, program and project management is able to be successfully applied and valued in practice, thus addressing the problem stated in Chapter 1.

4.1.5.2 PHASES OF THE STUDY

The phases of the study match the three research questions proposed. They are described in the Table 4.1 below.

Table 4.1 Phases of the Study

Question	Description	Phase
1	Which models, supported by P3M competency standards, are currently being employed for organisational change in project management?	Literature review (Chapter 2) Empathy phase (pre-data collection)
2	What could serve as a prototype OP3M improvement model, and how does it differ from current practice in Australia?	Develop prototype P3MCIM (Chapter 3) Framing phase (pre-data collection)
3	What is the effect of applying the prototypes to Australian/international businesses, and how can the prototype models be modified?	Testing phase (data collection and analysis): Stage 1: Quantitative online surveys Stage 2: Qualitative interviews Stage 3: Qualitative case studies Apply model, collect data, analyse responses and draw conclusions Stage 4: Modifying the model

Empathy Phase (Pre-data Collection): Literature Review

The literature review (Chapter 2) aimed to respond to Question 1 by exploring the literature regarding current models and identify the gap in knowledge concerning their performance and business results. The review investigated a range of 'themes' that could contribute to designing a corporate strategy for the development of OP3M. As a result, a model was developed that illustrated the limitations of other models and tested the proposition that a more holistic, integrated model will deliver capability in OP3M, and thus potentially enable predictable, expected strategic and business results.

Framing Phase (Pre-data Collection): Development of a P3MCIM

The suggested prototype models (P3MCIM, Chapter 3) addressed Research Question 2 by developing an improvement model for project management in organisations. The proposed prototype models are based on a review of the literature, consideration of industry needs, and causes for project failure. The prototype models embed the industry need for strategic direction, the increasing dependence on technology, and reflect the 'empathy and framing' stages of the

design thinking approach adopted by the study. For ease and consistency of reference, this model is initially referred to as the Portfolio, Program & Project Management Corporate Improvement Model or P3MCIM. The model and its components are flexible, can be interpreted to suit, and can be applied to any organisational context.

Testing Phase: Methods for Data Collection

The data collection methods and analysis of the research design seek to address Research Question 3 by explaining how the data is to be collected and how the analysis of the findings is to be applied to the modification of the prototype. The three data collection methods used in this study are: surveys (quantitative), interviews and case studies (qualitative). Figure 4.2 below describes the Testing Stage (data collection and analysis) of the study.

Prototype P3MCIM Evidence Based Testing

| Stage 1 Empathy: Online Surveys | → | Stage 2 Empathy / Framing: Interviews | → | Stage 3 Testing: Case Studies |
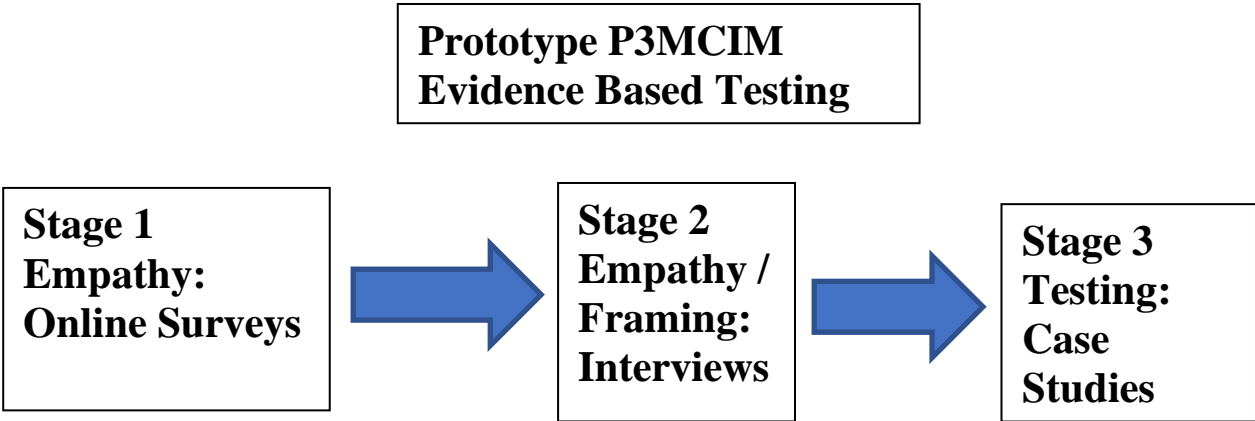
Figure 4.2 Evidence-based testing

4.2 METHODS

4.2.1 STAGE 1: ONLINE SURVEYS

Rea and Parker (2005) suggest that the interpretation of statistics is coupled with understanding people's interests, concerns and behaviours in a work environment; the survey's ultimate manifestation in practice. Steps in gathering data have been identified from their recommendations:

Step 1: Identifying the focus of the study and method of research. The focus of this study is based on testing the functions of a prototype P3MCIM model identified by the literature review and potentially endorsed by responses to the first survey (P3MS1). The subsequent survey (P3MS2) allows the researcher to consider individual perspectives and examine professional data to underpin the development of the model.

Step 2: Determining the research schedule and budget. The program for undertaking the survey has been dependent on respondents' availability and was conducted primarily during 2019 and 2020.

Step 3: Establishing the information base. The information base for the two surveys uses the P3MCIM components and how they apply to organisations.

Step 4: Determining the sampling frame. The sampling frame for the research targets individuals and organisations with a professional interest in OPM. The sub-sample selected for this study is professionals and practitioners (AIPM,IMPA,PMI members) who advise on and implement organisational project management. Purposive convenience sampling was adopted, and the sample was non-randomised. Purposive sampling strategies move away from any random form of sampling and are strategies to make sure that specific kinds of cases of those that could be included are part of the final sample in the research study. The reasons for adopting a purposive strategy are based on the assumption that, given the aims and objectives of the study, specific kinds of people may hold different and important views about the ideas and issues at question and therefore need to be included in the sample (Mason, 2002; Robinson, 2014; Trost, 1986); defined in (Campbell et al. 2020) This would not detract from the validity of the statistical calculations and statistical significance achieved.

Step 5: Determining the sample size and sample selection procedures. As sampling for the survey was non-random, using a standard rule-of-thumb approach, the sample size was set at approximately one hundred for Surveys 1 and 2. This number was considered sufficient for valid statistical testing at the 95% level of confidence.

Step 6: Designing the survey instruments. Each survey contains questions about the P3MCIM components and uses a 1-5 Likert Scale that requires a definite response. Each of the first two surveys asks for additional comments and whether the respondent would like to be interviewed.

Step 7: Pre-testing the survey instruments. All surveys were pre-tested with approximately twelve peers and practitioners known to the researcher during a National AIPM Conference and via email to prospective survey respondents. Feedback did not lead to significant variations to the instruments; however, several refinements were undertaken.

Step 8: Implementing the surveys. Surveys were sent directly to respondents from October 2019 through February 2020 and, subsequently, to AIPM/IPMA/PMI members in 2020. The survey invitations (from the researcher) were relayed by email and gave

access to each Meeting Quality survey online. The researcher distributed the surveys via three websites to the AIPM,IPMA,PMI members to ensure a broader range of respondents as well as PMO Specialists and Certified AIPM Assessors.

Step 9: Analysing the data. This raw dataset was analysed and discussed with the researcher's supervisors at USQ using the SPSS database and statistical analysis.

4.2.1.1 TWO ONLINE SURVEYS

The two surveys for this study appear in Appendices A and B. These surveys were compiled by the researcher in conjunction with the CEO of Meeting Quality Pty Ltd (Sydney) and oversighted by a USQ survey review specialist. The Meeting Quality software captured the results and prepared reports for each survey. The statistical analyses were conducted via the IBM SPSS platform.

4.2.1.2 SURVEY P3MS1 (APPENDIX A)

In the first survey, respondents were asked to deliberate on **the applicability of the components of the P3MCIM**. They were also be asked to provide face validation about the components as relevant. This first survey sought to determine the recommended P3MCIM details, gauge the user experience in completing the survey, and sought advice and recommendations for any improvements. The survey was administered as referred to under the sampling strategy. It was anticipated that the survey would provide a sample of approximately one hundred respondents. In terms of study value, the results of this survey provided an evidence-based test of the P3MCIM's design and components of the prototype model.

4.2.1.3 SURVEY P3MS2 (APPENDIX B)

The second survey examined **how the suggested P3MCIM model components could be applied in each respondent's organisation (where they were working or consulting).** The survey was sent to the same group as P3MS1, but additionally included case study executives and managers and a range of other selected managers and professionals in prominent organisations that were mature in P3M. The expected sample return was approximately one hundred. The summary of results was screened and tested for normality. Data was quantitatively assessed using the USQ SPSS platform. Study Value: To evaluate the usage of the P3MCIM components in actual organisations. Each survey sought the participation of respondents in a subsequent interview about a proposed P3MCIM.

4.2.2 STAGE 2: INTERVIEWS (QUESTIONS APPENDIX C)

Rea and Parker (2005) suggest that interviews have the following advantages. They include flexibility so the interviewer can probe for more detail, explain unclear questions and use various media to elicit responses; administer overly complex questionnaires that respondents would otherwise find confusing or intimidating; allow for hard-to-reach populations; and ensure that instructions are followed. Disadvantages to be aware of, according to Rea and Parker (2005), include potentially excessive cost; interviewer induced bias; reluctance to cooperate; causing of stress; and the fact that there is less anonymity.

Yin (2018) also reinforces that one of the most critical evidence sources is the interview. Interviews can significantly assist by suggesting explanations of applying a specific improvement model and the insights reflecting participants' perspectives. Yin suggests that although a survey and questionnaire can be used, the interviews resemble guided conversations rather than highly structured questioning.

Each interview was conducted using Zoom or an audio-visual application of the respondent's choice, with each audio-recorded (and most accompanied by a video). The interview questions are listed at Appendix C to Chapter 4. The interviews were transcribed into a draft report using a mixture of verbatim and non-verbatim comments. A draft report was sent to each interviewee to confirm statements, the correctness of viewpoint, and allowed them to amend, as necessary.

A thematic analysis of the interviews and the open-ended questions was conducted using Nvivo 12. Thematic analysis is a method for "identifying, analysing, and reporting patterns (themes) within data. It minimally organises and describes your data set in (rich) detail" (p. 79). The researcher followed Braun and Clarke's Table 4.2 to create a coding frame. A critical friend (Supervisor) checked the process. Subsequently, a series of re-reads of the transcripts was used to form the themes presented in Chapter 6. In the results and discussion section, any direct quotes from the interviews were acknowledged using the initials of each interviewee to differentiate between respondents. The USQ Ethics Application (H18REA095) approved all data collection.

Table 4.2 Steps of the Thematic Analysis of Interviews (Braun & Clarke 2006)

Process No	Criteria
Transcription 1	Data transcribed and checked for errors and additions
Coding 2	Codes generated in text

Coding 3	Codes checked for duplication and similarities and combined or deleted
Coding 4	Codes grouped into subcategories
Coding 5	Group codes into themes
Analysis 6	Data interpreted and analysed rather than descriptive
Analysis 7	A critical friend employed to ensure themes and data sufficient
Analysis 8	Themes and subsequent data sufficiently answer the research question
Writing 9	Method clearly outlined
Writing 10	Themes provide a valuable basis for discussion in the text

As with the surveys, the interviews aimed to address the following research question:

Question 2: What is an organisational improvement model, and how does it differ from current practice in Australia/internationally?

4.2.3 STAGE 3: CASE STUDIES

By definition, a case study is an account of an activity, event or problem that contains a real or hypothetical situation and includes the complexities encountered in the workplace (University of New South Wales 2013; Yin 2013). A case study involves a research strategy and an empirical inquiry investigating a phenomenon within its real-life context. In this study, case studies are to be used to examine OP3M's complexities and evidence of how the components of the P3MCIM are operationalised.

In terms of relevance to this research into P3MCIM, Klonoski (2013) points out that case studies in management are generally used to 'interpret strategies or relationships, develop sets of best practices, and analyse the external influences or the firm's internal interactions' (Klonoski 2013, p. 13). A clear intention of this study and its recommendations was to inform each case study organisation of the model's potential for application within their organisations and the potential its future adapted application might afford.

4.2.3.1 STRUCTURE OF CASE STUDIES

Yin (2013) asserts that validity and generalisation continue to be challenging aspects in designing and conducting case study evaluations, especially when the number of case studies is limited. More recently, Yin (2018) described case study research suggesting a linear but iterative process: planning, designing, preparation, collection, analysis and sharing. Of note in the P3MCIM research is Yin's reference to multiple case studies design. Yin suggests that the approach adopted by this study (using his Type 3 Model) establishes a replication approach to

case studies (Yin 2018). The benefit of doing this is that it avoids literal replications if fewer case studies are applied. The author suggests that two or three case studies might aim to be literal replications, whereas four to six case studies might be designed to pursue different replication patterns. In this way, he asserts, that if all the individual case studies turn out as predicted, they would provide compelling support for the initial set of propositions about the overall multiple case study approach, as is the case used by the researcher in developing the P3MCIM model.

4.2.3.2 SELECTED CASE STUDIES FOR DPRS

The case studies chosen for this research are:

1. Boral Asphalt Queensland, Brisbane, corporate improvement program (2002 – 2019). It includes a summary of the multiple studies across Boral companies (2002-2012) and updated 2019-2020

2. Boral Quarry End-Use (now Boral Land and Property Group), corporate improvement program (2002 – 2011). Based on a paper presented to the AIPM International Conference in 2011 and updated 2019 - 2020

3. The Malaysian Government Department of Works (JKR), Kuala Lumpur corporate improvement program (2007 – 2012). Based on the finalisation of consultancy report by SMEC Malaysia and BPPM Pty Ltd and updated 2019 - 2020

4. The Chamber of Commerce and Industry in Hambantota (HDCC), Sri Lanka corporate improvement program initiation (2016). Based on the finalisation of consultancy report 2016, updated 2019 - 2020

5. The ACT Government Directorate of Transport Canberra and City Services corporate improvement program (TCCS), initial report Canberra (2019-2020).
The main reason for choosing these case studies was that the researcher has worked with these organisations or has substantial knowledge of these work environments. The researcher knows prominent managers in each organisation. They are aware of the researcher's interest in developing the proposed P3MCIM model. (Researcher bias is addressed in Section 4.5). The case studies serve to investigate the practical utility and real-life context of the P3MCIM prototype models in practice.

4.2.3.4 RESEARCH METHODOLOGIES FOR EACH CASE STUDY

Each case study included an account of previous or current work in OP3M, data collected through surveys, updates and interviews, data collection and analysis, and the future application of the P3MCIM model for each organisation, presented as a consolidated report. Each case study point of contact received a letter of approval to participate in the study in accordance with the Ethics Approval (Number: H18REA095) For example, the TCCS letter stated: "that the TCCS Case Study and your responses will be recorded by the Principal Investigator. The key outcomes of the case study (input data for the research) will be agreed by you and the investigator by sending you a copy of the draft version of the study for your authorisation."

4.3 DATA ANALYSIS METHODS

4.3.1 DATA ANALYSIS METHODS: SURVEYS (QUANTITATIVE)

Based on the data provided by the Meeting Quality system for P3MS1 and P3MS2 (in a Microsoft Excel spreadsheet), each was analysed using SPSS software. The data from the initial responses was screened and cleaned. The analysis included:

1. Frequency report
2. Correlation analysis
3. Principal Component Analysis (PCA) using Varimax Rotation
4. Reliability and validity analysis.

Reporting included:

1. Writing an interpretation of the frequency analysis
2. Drawing critical insights from the correlation analysis
3. Drawing significant factors from the PCA
4. Determining the level of validity and reliability.

4.3.2 DATA ANALYSIS METHODS: THEMATIC ANALYSIS OF INTERVIEWS (QUALITATIVE)

The interviews were recorded using Zoom and a digital recorder and note-taking by the researcher to capture critical opinions and statements. The interviews were conducted with both peers, experts and case study executives/managers. Their purpose was to elucidate how managers plan and implement change for P3M in their respective organisations or consultancy organisations. The questionnaire left room for managers to identify strategies and actions that could be implemented in their organisations. The interviews were structured around the

components of the P3MCIM with semi-structured questions that allowed for a range of business context responses. The surveys also asked managers to identify what actions would need to be taken if the components were adopted.

4.4 LIMITATIONS AND UNCERTAINTY

Under the pragmatic paradigm, research questions are central to the methods used to test the prototype model at each design thinking stage, and to extract valuable insight. While the research uses an explanatory and mixed-method design, the primary purpose is to test the model for practical use and to enable an organisation to tailor the model to its context. While the entirety of the study offers a new insight from an academic and applied sense, there are limitations to the methodological design, strategy and implementation. The limitations and strengths include the following:

1. The use of mixed methods in the research design contributes to the depth and breadth of research outcomes. However, the results are still limited by the exploratory and cross-sectional design. The ability to generalise findings and assert causality is restricted and can only be overcome by future longitudinal research capacity (Creswell 2014). Although the researcher has been involved with two organisations used as case studies since 2002, the new model and its adoption will need to be appropriately applied into the future with the assistance of longitudinal studies

2. A common concern of survey instruments is their reliance on self-report data. It is accepted that respondents to P3MS1 and P3MS2 surveys may present with bias including impression management and self-deception (Paulhus & John 1998). These surveys are designed not to include measures of undesirable response styles. However, the survey result outcomes can be triangulated against interviews and case studies to establish reliability. This limitation may be controlled by ensuring several members of an organisation participate in the study. Furthermore, from both a practical and academic perspective, additional qualitative measures such as supplemental questionnaires may provide a way to address this limitation further.

Finally, as discussed earlier, the study of P3M organisational improvement in project management is not new. However, the available literature suggests that it has received limited and narrow focus. It will be important that survey respondents are briefed on the outcomes of this study and that particular attention be given to pointing out that the proposed improvement

model is not new but a refinement of previous models and allows corporations to tailor elements of the model to suit their business contexts.

4.5 RESEARCHER BIAS

As explained in Chapter 1, the researcher has comprehensive experience using and applying various forms of the proposed P3MCIM. As a result, there is a risk of researcher bias. As Klonoski (2013) points out, 'conducting research can never be considered an entirely independent and objective act of investigation. Especially in interpretive research, the researcher creates knowledge in close relation to the data, and where a priori knowledge and background are important factors that cannot and should not be eliminated from the research process' (Klonoski 2013, p. 13). The author asserts that the researcher's background and prior experience influence the process of empirical material collection, documentation and interpretation.

On the one hand, Klonoski asserts, a researcher's profound prior understanding of the research object, in addition to their academic knowledge, can be an advantage. However, a researcher must always be aware of the risk of selective perception in collecting and analysing empirical material. Therefore, researcher bias may be especially significant in studies conducted by an individual researcher. Nevertheless, observer bias in any research cannot be eliminated since an individual researcher can never be separated from their background, philosophical views and experiences. Importantly, in this thesis, the researcher does not use his (own) organisation to highlight validity and credibility questions. The means of overcoming bias is the crucial reason for using mixed methods and choosing organisations for case studies in which the researcher holds no personal stake.

According to Sarniak (2015), there are nine types of research bias and ways of avoiding them that focus on the research's human elements. The risk of bias exists in all qualitative research components and can come into play due to the researcher's questions and the respondents themselves. Sarniak suggests that the goal of reducing bias is not to make everyone the same but to make sure that questions are thoughtfully posed and delivered in a way that allows respondents to reveal true feelings without distortions. Samiak (2015) warrants that awareness of the core types of bias (respondent and researcher) should minimise the potential impact on qualitative research to reduce bias. In summary, Samiak believes that bias in qualitative research can be minimised. By asking quality questions and remaining aware and focused on sources of discrimination (such as the halo effect, leading questions, question order,

culture and hypothesis confirmation), the researcher can elicit the most accurate respondent perspectives and ensure that the resulting research lives up to the highest qualitative standards.

The researcher addressed many of these concerns by:

1. Discussions with peers about the design and logic of the surveys prior to implementation. The analysis of data was overseen by the USQ supervisors

2. Trial informal discussions/interviews with peers about how interviews could be conducted and what questions would be suitable for the formal interviews

3. Sending a draft record of interview to interviewees to ascertain that the content of the record was accurate and valid. This step preceded the final report and subsequent thematic analysis. The thematic analysis was overseen by the USQ supervisors

4. Similarly, the case study reports were sent to the contact manager to establish accuracy and validity and assure probity.

4.6   MIXED METHODS RESEARCH

Bentahar and Cameron (2015) arrived at the following activities for mixed methods research: exploration, triangulation, complementarity, and transformation. These phases will function as subsection headings for the analysis of results and should limit researcher bias.

4.6.1   EXPLORATION

This research has already involved considerable work undertaken in the nominated case study environments. However, the researcher needs to understand and document the complexity of the nominated current business environments and their portfolio of programs and projects. Interviewing key personnel can achieve this; exploring why and how they are improving. It can also be achieved by direct responses to the model's stated functionality and recording these in each case study. The case studies involve writing a history of each organisation and its involvement with the original approach/method, where applicable, and updating how the organisation has progressed in 2019/2020 (by way of updates) against the proposed model (P3MCIM).

4.6.2   TRIANGULATION

The surveys compare results using the Meeting Quality summary reports based on the consolidation of the responses. Each survey shows a percentage of agreement or disagreement

with the statements concerning the applicability and usage of a proposed new model. A five-point scale will allow results to be correlated.

4.6.3 COMPLEMENTARITY

Based on the results of the case studies and interviews, a summary includes how the improvement model applies to the targeted businesses and agencies and an analysis of the similarities and differences in the application of the model.

4.6.4 TRANSFORMATION

This final phase reports whether there has been any OP3M improvement within the organisations and the extent to which the P3MCIM has worked. It also highlights any subsequent actions that have been taken that added value to their OPM improvement strategies.

4.7 ETHICAL CONSIDERATIONS

This study conforms with the National Statement (NS) on Ethical Conduct in Human Research (2007 updated 2018). In conducting research, researchers need to consider and anticipate ethical issues that may arise throughout the research journey (Creswell 2009; Creswell 2014; Creswell & Plano Clark 2018). According to Neuman (2011), a commitment to ethical conduct in research helps preserve the integrity of the research process and the researcher and participants. The University of Southern Queensland (USQ) promotes a strong focus on ethical behaviour to assist this approach. The Human Research Ethics Committee (HREC) monitors the ethical guidelines of USQ research, and before the conduct of any study, ethics approval must be granted. Human Ethics Research Approval was applied for and granted in June 2018: Ethics Approval No: H18REA095. The HREC also requires the submission of Ethics Progress Reports at regular intervals.

4.8 CONCLUSION

This chapter has provided an overview of the research strategy by introducing a mixed methods approach to the study and the use of a design thinking methodology. It has outlined the methodology philosophy by examining the researcher's worldview and readiness to proceed. The nature of the problem will influence the audience selected for the research, and the researcher has explored research philosophies relevant to this work. The research design and paradigm have been explained, and the study stages have been set: Empathy, Framing and

Testing. Methods used will be undertaken using surveys with project management professionals and practitioners. These surveys will be supported by interviews with professionals who have agreed to be questioned further about the proposed prototype model. Lastly, the model's application will focus on five case studies: three in Australia and one each in Malaysia and Sri Lanka. Data analysis methods have been explained to establish reliability and correlation of information.

Furthermore, several limitations and uncertainties in the study have been considered along with mitigations. While a mixed approach to investigation underpins the research, it is not without limitations. As this study is not entirely independently researched, there is the potential for researcher bias, and this has been examined and mitigation strategies defined. Finally, the study's ethical guidelines and considerations have been identified from a National Standards and Australian Institute of Project Management professional perspective.

CHAPTER 5: QUANTITATIVE (EMPATHY STAGE) AND QUALITATIVE RESULTS (EMPATHY AND FRAMING STAGE)

5.1   INTRODUCTION

Chapter 4 outlined the methods that would be used for collecting data from the surveys and interviews. This chapter presents the results from the mixed methods design methodology and tests the components of the P3MCIM prototypes, in accordance with the design thinking approach. It presents the views of experts in OPM and practitioners (P3M managers and consultants) who have used various components of the P3MCIM prototypes within their organisations. This methodology was conducted by way of surveys and interviews undertaken during 2019 to 2020. As previously noted, this study does not intend to verify a P3MCIM model but rather to explore how it might work in practice and how it may be refined or developed into the future.

5.2   SURVEY RESULTS

As noted in Chapter 4, two surveys (P3MS1 and P3MS2) were conducted between November 2019 and May 2020. The first survey aligns with the research questions, validating themes developed from the literature review (Question 1). The second survey tests the applicability of these themes through the P3M approaches being applied in existing organisations (Question 2). Each of the surveys also invited participants to be interviewed by the researcher. A separate list of interviewees was derived from the surveys.

5.2.1 SURVEY P3MS1

The first survey, designed for peers and experts, asked respondents to consider the themes identified from the literature review and the applicability of the components of the prototype P3MCIM. In its final form (2018-2019), the survey was expected to yield a sample of approximately one hundred respondents. The results were compiled using an external provider's database, Meetings Quality Pty Ltd (Sydney), and were available to each participant. The results were sent to individual participants (within 24 hours) to compare their responses with other participants against a global aggregation.

P3MS1 was initially sent by direct email to 175 experts and practitioners in P3M and OPM who were known to the researcher. A total of forty responses were received. The second tranche of respondents was drawn from the AIPM general group of members (approximately 7,100), the PMO Interest Group (approximately 340) and the Registered Project Manager Group (approximately 40). Many of these members belong to all three groups. However, many members do not specialise in OPM and would not necessarily have responded to the survey request. The researcher assumes that those who did respond have or had an active interest in OPM improvement. The researcher anticipated 100 responses, however, 90 were received, with 87 samples used after cleaning and screening.

5.2.2 SURVEY P3MS2

The second survey was designed to examine how the suggested Prototype P3MCIM components were applied in the respondent's chosen organisation (in which they were working, consulting or owned). This survey was sent to the same group as P3MS1, including case study executives and managers and a range of other selected managers and professionals from prominent organisations, most of which were mature in P3M. This selection was because many members had experience in organisational change from a theoretical, academic and practical perspective. While the anticipated sample size was approximately 100, 74 responses were received, with 73 samples used after cleaning and screening.

5.2.3 PARTICIPANTS: AN 'INFORMED' AUDIENCE

The reason for selecting a group of experts and practitioners as well as a broader group from AIPM/IPMA/PMI as respondents to the surveys was that the researcher expected that each participant would have a high likelihood of having a pragmatic interest in OP3M and the development of a P3MCIM model. In addition, the surveys' terminology (language) would be familiar and facilitate ease of response. No queries were received regarding the meaning or intent of either the survey questions or the language used.

5.2.4 P3MS1 RESULTS AND PARTICIPANT COMMENTS

The raw data for both surveys was compiled by Meeting Quality Pty Ltd (Sydney) and analysed using the USQ SPSS software. The data was checked for missing values. No missing values were detected, and no further cases deleted. The data was checked for normal distribution using Skewness and Kurtosis Statistics and P-P plots. The data fell within the parameters for normal distribution and no cases were deleted.

5.2.4.1 SPSS REPORTING: RELIABILITY STATISTICS

SPSS showed a high-reliability rating across both surveys with the questions based on a Likert Scale:

Cronbach's Alpha	N of Items
.954	18

Results: data shows that the reliability of data was high (.954).

5.2.4.2 FREQUENCY STATISTICS

The following Table 5.1 summarises the results for the fifteen questions.

Table 5.1 Frequency Results

Question	Topic	Frequency %
1	Strategic Plan	98.9
2	Annual Plan	96.6
3	P3M Governance	90.8
4	Program and Project Pipeline	95.4
5	Resourcing	86.2
6	PMO	94.2
7	Benefits Realisation	90.8
8	Change Management	94.2
9	Cultural Competence	79.3
10	Health Checks	96.5
11	P3M Position Descriptions	94.3
12	Personal and Business KPIs	83.9
13	Education and Training System	92
14	Coaching/Mentoring	93.1
15	Professional Development	87.4

Result 1: Corporate Strategic Plan. 98.9% of respondents believed that a Corporate Strategic Plan (CSP) is needed for a model. This demonstrates that most organisations are familiar with and use a strategic plan.

Result 2: Annual Business Plan. 96.6% of respondents believed that an Annual Business Plan (ABP) to linking operations and projects is needed for a model. Like the previous component, this data shows that organisations have a plan for operations and projects.

Result 3: P3M Governance. 90.8% of respondents believed that P3M Governance is specifically needed for a model and does not necessarily rely on a typical organisational hierarchy.

Result 4: P3M Pipeline. 95.4% of respondents believed that a "pipeline" of programs and projects is needed for a model.

Result 5: Resourcing and Prioritisation. 86.2% of respondents believed that coordinated resourcing for business as usual (BAU) and P3M is needed for a model.

Result 6: PMO/Centre of Capability. 94.2% of respondents believed that a PMO is needed for a model and should be mandated/endorsed.

Result 7: Benefits Realisation Management (BRM). 90.8% of respondents believed that BRM is needed for a model.

Result 8: Change Management. 94.2% of respondents believed that change management is needed for an improvement model, where change management results from the impact of a project on the broader organisational business outcomes and not just outcomes within the project alone.

Result 9: Cultural Competence. 79.3% of respondents were in favour of Cultural Competence being included in a model.

Result 10: Health Checks. 96.5% of respondents believed that Program and Project Health Checks are needed for a model.

Result 11: Competency-Based Position Descriptions. 94.3% of respondents believed that P3M Position Descriptions are needed for a model.

Result 12: Business and Project Management KPIs. 83.9% of respondents believed that Business and Project KPIs linked to maturity levels are needed for a model.

Result 13: Education and Training System. 92% of respondents believed that a work-based Education and Training System is needed for a model.

Result 14: Coaching and Mentoring. 93.1% of respondents believed that internal coaching and mentoring are needed for a model.

Result 15: Professional Development Pathways. 87.4% of respondents believed that some form of Professional Development Pathways is needed for a model.

Summary of Statistics

Scores indicate that 91.6% of respondents believe that all these components are applicable for inclusion in a P3MCIM model. The higher scores > 90.8% are predictable given that they address standard general management practices. The lower scores < 90.8% were reflected in only four components, indicating that these components are not well known or practised but still enjoyed support for inclusion in the prototype models.

5.2.4.3 CORRELATIONS (FROM SPSS REPORT)

Correlation analysis was conducted using Pearson correlation at both the 0.95 and 0.99 significance levels. A number of significant correlations were detected. Table 5.2 summarises the results from the correlation of each of the 15 questions related to the current application of the model's components. Six of these clusters are described below.

Table 5.2 Correlation of Questions

	1: Corporate Strategic Plan	2: Annual Business Plan for operations and projects	3: P3M Governance	4: P3M Program and Project streams	5: Resourcing work prioritisation coordinated for both BAU and P3M	6: Project Management Office / Centre of Capability is mandated/endorsed	7: Benefits realisation management	8: Change management	9: Cultural competence management (Multi-cultural and P3M integration)	10: Program and project health checks	11: Competency based position descriptions	12: Business and Project Management KPIs: linked to maturity levels	13: Education and Training System (workplace based)	14: Internal coaching and mentoring program	15: Professional Development Pathways (VET, Higher Ed, P3M Certifications)
1: Corporate Strategic Plan	1	.317**	0.108	0.155	.321**	0.057	.227	0.200	0.029	0.174	.275	0.158	0.137	-0.024	0.067
2: Annual Business Plan for operations and projects	.317**	1	.220*	.282**	0.097	.214*	.327**	0.146	.360**	.299**	.247*	.361**	0.042	-0.033	0.159
3: P3M Governance	0.108	.220*	1	.266*	-0.012	.255*	.289**	.276**	.397**	.354**	0.168	.292**	0.181	0.047	.341**
4: P3M Program and Project streams	0.155	.282**	.266*	1	0.077	0.104	0.138	.299**	0.100	.312**	-0.004	0.114	0.210	0.097	0.181
5: Resourcing work prioritisation coordinated for both BAU/P3M	.321**	0.097	-0.012	0.077	1	.217*	.362**	0.117	0.201	0.138	.375**	.235*	0.183	.228*	.253*
6: Project Management Office / Centre of Capability is mandated/endorsed	0.057	.214*	.255*	0.104	.217*	1	.254*	.217*	.277**	.412**	.229*	0.208	.232*	0.113	.222*
7: Benefits realisation management	.227*	.327**	.289**	0.138	.362**	.254*	1	.377**	.373**	.216*	.228*	0.173	0.205	-0.125	.390**
8: Change management	0.200	0.146	.276**	.299**	0.117	.217*	.377**	1	.440**	.386**	.379**	.277**	0.145	0.010	.366**
9: Cultural competence management	0.029	.360**	.397**	0.100	0.201	.277**	.373**	.440**	1	.357**	.420**	.349**	.216*	.177	.464**
10: Health checks	0.174	.299**	.354**	.312**	0.138	.412**	.216*	.386**	.357**	1	.305**	.273*	.256*	.269*	.477**
11: Competency based position descriptions	.275*	.247*	0.168	-0.004	.375**	.229*	.228*	.379**	.420**	.305**	1	.471**	.462**	.338**	.269*
12: Business and Project Management KPIs: linked to maturity levels	0.158	.361**	.292**	0.114	.235*	0.208	0.173	.277**	.349**	.273*	.471**	1	.249*	0.000	.238*
13: Education and Training System (workplace based)	0.137	0.042	0.181	0.210	0.183	.232*	0.205	0.145	.216*	.256*	.462**	.249*	1	0.170	.276**
14: Internal coaching and mentoring program	-0.024	-0.033	0.047	0.097	.228*	0.113	-0.125	0.010	0.177	.269*	.338**	0.000	0.170	1	.241*
15: Professional Development Pathways (VET, Higher Ed, P3M Certifications)	0.067	0.159	.341**	0.181	.253*	.222*	.390**	.366**	.464**	.477**	.269*	.238*	.276**	.241*	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

5.2.4.3.1 P3MS1 RESULTS OF CORRELATION CLUSTERS

These correlation clusters show statistically significant support for creating a holistic model for improvement that identifies key components and explains the need to justify their interrelationships. Six examples follow.

Cluster 1: This cluster of correlations shows a strong relationship between Planning, Governance and Resourcing.

Cluster 2: This cluster shows the alignment of measurement (in Benefits, Change and Culture) backed by health checking of program/project welfare against expected annual outcomes, the effectiveness of governance and due process (for programs and projects).

Cluster 3: This cluster of statistically significant correlations show Change, Culture and Health Checks involved with the operation of the PMO and linked to Benefits Realisation.

Cluster 4: This strong correlation indicates that Health Checks and accurate Competency-based job descriptions with KPIs may well affect Change and Cultural competence.

Cluster 5: This correlation indicates that Professional Development pathways should include learning components to include expertise in Benefits Realisation, Change Management and Cultural Competence.

Cluster 6: Competency-based job descriptions correlate strongly with KPIs, an Education and Training System, and Coaching and Mentoring.

These clusters will be included in the Chapter 7 analysis.

5.2.4.5 VERBATIM RESPONSES FROM P3MS1

Each survey also allowed participants to comment on the concept of the model and its components. The following salient responses were recorded at the end of the survey, and a summary of critical remarks are recorded below:

"While agreeing that all aspects are necessary, the actual practice has been to focus on the job and minimise other influences. Knowing what is needed and the right objective to satisfy that need is quite different from the actual 'on the ground' management of undertakings. To do things properly needs executive commitment, appropriate resourcing, and knowledgeable staff. In a profit-driven environment, it is easier to cut costs, go with the cheapest, be satisfied with minimum standards and save on HR training programs."

"Program and Project Managers need to exhibit leadership. Leaders can encourage ordinary people to do extraordinary things."

"Areas on Social Responsibility, Sustainability and Risk should be included."

"Oh, to have anyone with any foresight or ability in this institution who could grasp this concept, process and structure (of the model) to impact existing processes!"

"Internal coaching and mentoring can only be relevant if coaches and mentors can bring new experiences and knowledge to the conversation and environment and not just "correct or direct" the existing system and processes. New knowledge and skills must be sought continuously by everyone but led by management."

"An organisation must adopt a prog/project management methodology to embed common and repeatable terminologies and processes. Equally important is adopting development methodologies for business analysis, mechanical design, SW dev, PLM, Agile. These must be integrated with the program/project management methodology."

"Collaboration tools, PPM tools and for purpose templates. Estimation oversight."

"Include in the model an OPM Risk and issues resource/s."

"I answered from the perspective of what I have seen (i.e., practice) rather than what should occur (better practice)."

"A detailed organisational project framework is necessary, and it needs to be flexible. Also, improve technical sign off and each project stage with what is undefined or not part of the scope."

"My recent experience is that companies rate the answer to every question at the other end of the scale, or certainly this is what actions suggest."

"Sponsorship, context and timing are key."

The key topics summarised from these comments are:
1. Executive management commitment is necessary for a model to work
2. Appropriate resourcing and knowledgeable staff are needed

3. Program and project managers need to exhibit leadership

4. Areas of social responsibility and sustainability should be included

5. Internal coaching and mentoring are required, not just "correcting or directing" the existing system and processes

6. Adopting a set of development methodologies for business analysis, mechanical design, must be integrated with the program/project management methodology

7. The context must determine specific provisions, i.e., customisation is needed

8. Collaboration tools, PPM tools and fit-for-for purpose templates are needed

9. An OPM Risk and Issues Management database should be used for large organisations

10. A detailed organisational project framework is necessary, and it needs to be flexible to accommodate project streams

11. Managers are over-optimistic about their "systems" and refuse to consider best practice against national/international standards

12. Sponsorship, context and timing are essential.

Note: Key headings arriving from these statements will be considered in Chapter 7.

5.2.5 P3MS2 RESULTS AND PARTICIPANT COMMENTS

Table 5.3 summarises the 20 questions related to the current application of the model components, with a commentary for each one and a summary listed below.

5.2.5.1 DATA RESULTS AND PRELIMINARY COMMENTS ON FREQUENCIES

Table 5.2 Frequency Statistics

Question	Topic	Private%		Public %	Both%
1	Public or Private Sector	58.9		39.7	1.4
		Agree/Strongly Agree that his component applies	Not Decided	Do Not Agree that this component applies	Mean
2	Strategic Plan	67	10	23	3.7
3	Annual Plan	75	4	21	3.92
4	P3M Governance	70	4	26	3.73
5	P3M Framework	55	23	22	3.45
6	Resourcing	59	22	19	3.56
7	PMO	36	21	43	3.04
8	Program and Project Pipeline	78	18	14	3.84
9	Executive Coaching	25	17	58	2.63
10	Stakeholder Analysis	51	26	23	3.40
11	Benefits Realisation	35	22	43	2.95
12	Change Management	40	20	40	3.05
13	Cultural Competence	30	21	49	2.81
14	Health Checks	42	33	25	3.33
15	P3M Position Descriptions	30	29	41	3.03
16	Business and Project KPIs	42	14	44	3.04
17	Education and Training System	37	26	40	2.97
18	Coaching/Mentoring	32	17	51	2.77
19	Professional Development	36	19	45	2.89
20	Professional Certification	37	36	27	3.15
Totals		877	382	654	61.26
Averages		46.16	20.1	34.42	3.22

Results 1: Public or Private. 58.9% of respondents were from the private Sector and 39.7% were from the public Sector, with one respondent representing both sectors.

Results 2: Corporate Strategic Plan (CSP). 67% of respondents agreed or strongly agreed that their chosen organisation uses a CSP that includes P3M; 23% do not.

Results 3: Annual Business Plan (ABP) for Operations and Projects. 75% of respondents agreed or strongly agreed that their chosen organisation employs an ABP that includes operations and projects; 21% do not.

Results 4: Governance Structure for P3M. 70% of respondents agreed or strongly agreed that their chosen organisation has a workable governance structure for P3M; 26% do not.

Results 5: P3M Framework. 55% of respondents agreed or strongly agreed that their chosen organisation employs a P3M Framework that caters to program and project streams; 22% do not.

Results 6: Resourcing for Work Prioritisation. 59% of respondents agreed or strongly agreed that their chosen organisation calculates resourcing for work prioritisation for BAU and projects; 19% do not.

Results 7: PMO/Centre of Capability. 36% of respondents agreed or strongly agreed that their chosen organisation deploys a PMO of some form mandated/endorsed and implemented and used by all management levels; 43% do not.

Results 8: Pipeline of Programs and Projects. 78% of respondents agreed or strongly agreed that their chosen organisation manages a Pipeline of Programs and Projects; 14% do not.

Results 9: Executive Coaching. 25% of respondents agreed or strongly agreed that their chosen organisation has Executive Coaching; 58% do not.

Results 10: Stakeholder Analysis. 51% of respondents agreed or strongly agreed that their chosen organisation conducts a Stakeholder Analysis and Management; 23% do not.

Results 11: Benefits Realisation. 35% of respondents agreed or strongly agreed that their chosen organisation employs Benefits Realisation Management; 43% do not.

Results 12: Change Management. 40% of respondents agreed or strongly agreed that their chosen organisation uses Change Management for all Programs and Projects; 40% do not.

Results 13: Cultural Competence. 30% of respondents agreed or strongly agreed that their chosen organisation considers Cultural Competence Management; 49% do not.

Results 14: Health Checks. 42% of respondents agreed or strongly agreed that their chosen organisation uses a Health Check System; 25% do not.

Results 15: Competency-based Position Descriptions. 30% of respondents agreed or strongly agreed that their chosen organisation compiles Competency-Based Job Descriptions and has a Performance Measurement System; 41% do not.

Results 16: Business and Project Management KPIs. 42% of respondents agreed or strongly agreed that their chosen organisation uses KPIs to measure organisational performance; 44% do not.

Results 17: Education and Training System. 37% of respondents agreed or strongly agreed that their chosen organisation employs an Education and Training System for P3M and Support Personnel; 40% do not.

Results 18: Coaching and Mentoring. 32% of respondents agreed or strongly agreed that their chosen organisation manages internal coaching and mentoring for P3M; 51% do not.

Results 19: Professional Development Pathways. 36% of respondents agreed or strongly agreed that their chosen organisation has a Professional Development Pathways for P3M; 45% do not.

Results 20: Professional Certifications for P3M. 37% of respondents agreed or strongly agreed that their chosen organisation utilises Professional Certifications for P3M; 27% do not.

Summary of Statistics

The highest scores indicate that a component is being applied: Program and Project Pipeline – 78%; Annual Plan – 75%; Governance – 70%; Strategic Planning – 67%.

The highest scores that indicate that a component is not being applied: Executive Coaching - 58%; Coaching and Mentoring – 51%; Cultural Competence – 49%; Professional Development – 45%; Business and Project KPIs – 44%; Benefits Realisation – 43%; PMO – 43%.

Median: 3.22 = 64.4%

Key insights from this survey indicate that 64.4% of respondents believe that these components (of a model) are applicable and are practised in the respondents' organisations. The scores also suggest that several components that are not well practised are those that rely on interpersonal communications and behaviours, particularly Coaching and Mentoring, Professional Development and Cultural Competence.

5.2.5.2 PRINCIPAL COMPONENT ANALYSIS (PCA) USING VARIMAX ROTATION RESULTS

The reason for applying PCA to this study was to cluster the question items into dimensions and enable the researcher to observe the underlying factorial structure in the form of unobserved variables. PCA is a statistical dimension reduction method used to explain variance among observed and correlated variables regarding a potentially lower number of unobserved variables called factors. It is considered to be an exploratory method (Hair et al, 2018) and (Watkins 2018). PCA is only regarded valid if the sampling adequacy measured by the Kaiser-Meyer-Olkin (KMO) statistic and the amount of variance explained is above 60% for exploratory studies once the factors have been extracted. The minimum acceptable value for KMO is 0.6 and the ideal is above 0.8 (Wiesen 2017). After factors are extracted, researchers define meanings to the factors that represent the underlying observed variables.

Table 5.3 Rotated Component Matrix: Analysis of P3MS2

	Components	
	1	2
2: A Corporate Strategic Plan is developed and implemented that includes portfolio, program and project management	.818	
3: An Annual Business Plan for operations and projects is developed and implemented	.834	
4: A sound and workable governance structure is in place for portfolio, program and project management	.799	
5: The P3M framework caters for a broad and diverse range of program and project streams	.631	
6: Resourcing for work prioritisation is coordinated for both Business as Usual (BAU) and P3M	.681	
7: PMO / Centre of Capability is mandated/endorsed, and implemented and used by all levels of management	.718	
8: A Pipeline of Programs and Projects is developed, implemented and monitored/reported on	.708	
9: Executive coaching for managers and sponsors/steering committees is developed and implemented		.748
10: Stakeholder Analysis is undertaken and managed for all Programs and Projects		.711
11: Benefits realisation management is developed, implemented and monitored for all Programs and Projects		.789
12: Change management is developed, implemented and monitored for all Programs and Projects		.664
13: Cultural competence management is developed, implemented and monitored across Programs and Projects		.818
14: A system for Program and Project Health Checks (includes Gateway reviews) is developed, implemented and monitored	.609	
15: Competency-based position descriptions are in place and are linked to Program and Project performance by way of a measurement system	.642	
16: Business and Project Management KPIs are developed, implemented and monitored, and linked to levels of organisational maturity		.654
17: A workplace-based Education and Training System is developed, implemented and monitored for Portfolio, Program and Project Managers and support personnel		.751
18: An internal coaching and mentoring program is developed, implemented and monitored for Portfolio, Program and Project Managers		.709

19: Professional Development Pathways (VET, HE) are in place for Portfolio, Program and Project Managers		.609

SPSS Methods used were:

- Extraction Method: Principal Component Analysis
- Rotation Method: Varimax with Kaiser Normalisation
- Rotation converged in three iterations.

Results

The initial solution converged after three iterations. The results generated KMO sampling adequacy, and the rotated factor solution explained the variance. The results suggest that two underlying factorial structures are observed. This study identified the two factors in Table 5.4 above: Component 1 termed Conventional business practices, and Component 2 termed Unconventional program/project practices for the purposes of this study. This division of practices has been recognised previously however; these results indicate a salient difference. They highlight the components that experts and practitioners are familiar with for effective organisational management of programs and projects. However, a frequency analysis of the items that converged into the second factor all suggest that, while agreeing that the unconventional program/project practices are needed, they are not generally applied, yet require further integration into an OP3M model.

5.2.5.3 CORRELATION ANALYSIS

The aim of correlation analysis is to determine how each component relates to others using Pearson's correlation coefficients tested at the 95% to 99% level of confidence. Table 5.5 indicates that several Clusters would affect the design and development of a new model.

Table 5.4 Results of Correlation Clusters

Correlations

	1: Public or private sector 1=neither, 2=Private, 3=Public, 4=both	2: A Corporate Strategic Plan	3: An Annual Business Plan	4: A sound and workable governance structure	5: The P3M framework	6: Resourcing work prioritisation coordinated	7: PMO/Centre of Capability	8: A Pipeline of Programs and Projects	9: Executive coaching	10: Stakeholder Analysis	11: Benefits realisation management	12: Change management	13: Cultural competence management	14: System for Program and Project Health Checks	15: Competency based position descriptions	16: Business and Project Management KPIs	17: Workplace based Education and Training System	18: Internal coaching and mentoring program	19: Professional Development Pathways	20: Professional Certifications (AIPM, IMPA, PMI etc)
1: Public or private sector	1	0.182	0.035	-0.185	-0.141	-0.184	-0.050	-0.122	-.263	-0.182	-0.228	-.263	-.236	-0.073	-0.110	-0.176	-0.224	-0.216	-0.108	-0.099
2: A Corporate Strategic Plan	0.182	1	.773	.632	.507	.585	.617	.585	.442	.450	.455	.577	.334	.569	.646	.526	.501	.469	.404	.277
3: An Annual Business Plan	0.035	.773	1	.693	.478	.602	.560	.664	.387	.371	.500	.595	.292	.419	.569	.516	.480	.458	.329	.347
4: A sound and workable governance structure is in place for P3M	-0.185	.632	.693	1	.576	.677	.632	.692	.502	.429	.560	.622	.346	.589	.652	.606	.603	.588	.485	.391
5: The P3M framework	-0.141	.507	.478	.576	1	.535	.607	.511	.431	.322	.396	.440	.396	.480	.475	.511	.531	.534	.476	.392
6: Resourcing work prioritisation coordinated	-0.184	.585	.602	.677	.535	1	.575	.655	.481	.523	.486	.550	.484	.468	.568	.591	.521	.528	.434	.351
7: PMO/Centre of Capability	-0.050	.617	.560	.632	.607	.575	1	.534	.533	.506	.503	.477	.323	.588	.650	.444	.547	.608	.402	.381
8: A Pipeline of Programs and Projects	-0.122	.585	.664	.692	.511	.655	.534	1	.510	.438	.511	.449	.436	.450	.506	.508	.527	.548	.366	.278
9: Executive coaching	-.263	.442	.387	.502	.431	.481	.533	.510	1	.612	.686	.606	.661	.384	.446	.624	.548	.570	.396	.314
10: Stakeholder Analysis	-0.182	.450	.371	.429	.322	.523	.506	.438	.612	1	.637	.570	.598	.446	.573	.482	.585	.520	.385	.402
11: Benefits realisation management	-0.228	.455	.500	.560	.396	.486	.503	.511	.686	.637	1	.691	.609	.494	.563	.728	.674	.672	.499	.488
12: Change management	-.263	.577	.595	.622	.440	.550	.477	.449	.606	.570	.691	1	.553	.477	.646	.664	.639	.647	.518	.427
13: Cultural competence management	-.236	.334	.292	.346	.396	.484	.323	.436	.661	.598	.609	.553	1	.359	.438	.523	.591	.560	.433	0.227
14: System for Program and Project Health Checks	-0.073	.569	.419	.589	.480	.468	.588	.450	.384	.446	.494	.477	.359	1	.694	.533	.487	.510	.509	.425
15: Competency based position descriptions	-0.110	.646	.569	.652	.475	.568	.650	.506	.446	.573	.553	.646	.438	.694	1	.604	.724	.648	.627	.557
16: Business and Project Management KPIs	-0.176	.526	.516	.606	.511	.591	.444	.508	.624	.482	.728	.664	.523	.533	.604	1	.653	.570	.540	.504
17: Workplace based Education and Training System	-0.224	.501	.480	.603	.531	.521	.547	.527	.548	.585	.674	.639	.591	.487	.724	.653	1	.824	.727	.500
18: Internal coaching and mentoring program	-0.216	.469	.458	.588	.534	.528	.608	.548	.570	.520	.672	.647	.560	.510	.648	.570	.824	1	.634	.531
19: Professional Development Pathways	-0.108	.404	.329	.485	.476	.434	.402	.366	.396	.385	.499	.518	.433	.509	.627	.540	.727	.634	1	.563
20: Professional Certifications (AIPM, IMPA, PMI etc)	-0.099	.277	.347	.391	.392	.351	.381	.278	.314	.402	.488	.427	0.227	.425	.557	.504	.500	.531	.563	1

*. Correlation is significant at the 0.05 level (2-tailed).

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

** Correlation is r-<.05

** Very High Correlations r->.65

Cluster 1: This correlation shows the connection between the Annual Plan and Governance with a Pipeline of Programs and Projects. The responsibility for the pipeline belongs to the managers governing the plan.

Cluster 2: Governance is highly linked to the Correct Positions (job descriptions) and the discipline involved with Health Checks and KPI attainment.

Cluster 3: Executive Coaching correlates with expertise in Benefits Realisation, Change Management and Cultural Competence (two of these are behavioural skills).

Cluster 4: Re-emphasises No 3 for Executives.

Cluster 5: This set of three correlations emphasises the growing importance of Coaching and Skillsets for Benefits Realisation.

Cluster 6: This correlation shows the alignment of Training Systems in P3M with progression to follow up Coaching and Pathways for Development.

These correlations begin to show how one component of the P3MCIM is relevant and complementary to another. This complementarity (interconnectedness) will be explored in Chapter 7, and, importantly, the research will explore how the sum of the parts will create an integrated approach to organisational improvement.

5.2.5.4 VERBATIM RESPONSES FROM P3MS2

As with P3MS1, participants were asked to comment on utilising the model's components in the organisations they know well. The following (selected) responses were recorded at the end of each survey.

"I have answered this as principal change consultant to many organisations, including software development, business acquisition projects, and my most recent project, focusing on the people relationships and its impact on the various project delivery initiatives. We also assessed personality preferences for project managers and program managers where there were some poor fits. In my experience, technical specialists do not know how to lead projects and programs for assorted reasons, with generalists being

predominantly more effective. Training can help, obviously, but some clear personality styles do not work. Under pressure, they tend to default to natural style, and personality preferences come to the fore as a coping mechanism."

"I have taken P3M in a generic sense, i.e., a fit for purpose approach to portfolio, program and project management."

"Our organisation obviously has a low level of maturity in this space. Much more work to do."

"This small (<1,500) public sector organisation had APS5, APS6 "Project Managers" and Project Sponsors with zero experience and training."

"As I worked through the questions, I thought that there were several shades of grey in our organisation where some parts were mature and some areas less so".

"Stakeholders, although not billable resources on all projects, tend to be overloaded with project steering meetings and the like, to such an extent they cannot perform their primary duties. This, therefore, means they eventually withdraw from the project related meetings."

"The organisation I am in is going through an Earthquake change at present … I hope to influence them to something more P3M orientated for internal and external projects. At present, fighting the Nike "Just do it" mindset by forcing some Governance … good thing I enjoy a challenge."

A summary of these remarks include:

1. preferring generalists over technically oriented project managers,
2. employing a model that is fit-for-purpose,
3. organisations with a low level of maturity need to improve,
4. some agencies have little or no experience and training in P3M,
5. organisations have a mixture of mature and immature approaches,
6. stakeholders are overloaded and do not assist projects satisfactorily, and
7. a "just do it" mindset is unproductive.

Note: Key headings arriving from these statements will be considered in Chapter 7.

5.2.6 CONCLUSIONS FROM SURVEYS

The first survey (P3MS1) served to investigate whether the components of the proposed P3MCIM were appropriate. The survey statistics suggest that all of the proposed components were applicable, confirming that they are relevant to the target audience. However, other suggestions (noted in the comments) need further consideration and are discussed in Chapter 7.

The second survey (P3MS2) examined how the components of the proposed P3MCIM are being applied in current 'real work' organisations. From a distribution perspective (60% private and 40% public sector), the statistics reveal that 46% of the population apply the components and 36% are not comprehensively used. These results will be further examined in Chapter 7 where the results are discussed and triangulated.

5.3 INTERVIEW RESULTS

The researcher interviewed a selection of managers identified from the surveys who could comment on the Prototype P3MCIM given their academic standing and/or practical experience in OPM given their roles as P3M managers. Given that few members work in the organisational improvement area, the researcher had to investigate those who would add most value to this study. The purpose of this analysis was to combine and evaluate interviews conducted during March to May 2020. As a result of the two surveys conducted in 2019 - 2020, several AIPM, IPMA and PMI members volunteered to be interviewed concerning the model's development and address issues concerning the current organisational practice in OP3M. The researcher selected fourteen interviewees from various organisations and consultancies based on their extensive experience in P3M and organisational improvement programs. A thematic analysis of the interview data is presented after the summaries of the interviews of the participants.

5.3.1 INTERVIEWEE PROFILES

The name and short profile of each interviewee appears at Appendix E.

5.3.2 EXPERTISE OF THE INTERVIEWEES

Table 5.5 Range of Experience and Expertise of Interviewees

Range of Experience and Qualifications	Number	Comment
P3M Expert	12	Specified Fields
P3M Practitioner	14	
P3M Consultant	13	Wide range of disciplines: private and public sectors
P3M Educator University	4	Specified Programs
P3M Trainer	10	AQF
P3M Assessor	10	AIPM/IPMA/PMI
Tertiary Qualified	14	
Qualified in P3M	14	AIPM/IPMA/PMI
PhD/Doctorate in P3M	5	Or related discipline
Fellow of PM Institutes	5	AIPM/IMPA
CEO or MD	5	Current or Previous
GM/CIO	4	Current or Previous
National and International experience	10	
Board Member of PM Institutes	8	Current or Previous
Gender:	2 Women, 12 Men	Equates to % women in AIPM/IPMA/PMI
Age Range	The mid 40s to late 70s	

5.4 RESULTS

5.4.1 SUMMARY OF NODES CONVERTED INTO THEMES AND SUB-THEMES

Using NVIVO software, the data was thematically analysed from which Nodes were identified. The names of the Nodes are indicated in the left column of Table 6.2. These represent the key topic areas discussed by the interviewees. Many of these topics also relate specifically to potential components of a P3MCIM model. The Files column indicates the number of interviewees who mentioned each Node (total possible14), whereas the References column indicates how many times the Node was referred to throughout the interviews. The highest scoring topics were Change Management (82) and Executive Manager Behaviour (69). High scoring topics were chosen as Themes.

P3MCIM Nodes

Table 5.6 P3MCIM Nodes extracted from NVivo Code Book

Name	Files	References
Benefits Management	10	13
Business Strategy	6	13
Capability and Sustainability	7	13
Change Management	13	82
Coaching and Mentoring	2	3
Cultural Competence and Management	12	24
Executive Coaching and Advice	3	4
Executive Manager Behaviour	13	69
Governance	3	4
Health Checks, Gateway Reporting	4	6
Job Descriptions for P3M	4	4
KPIs for P3Managers	7	9
KPIs for Programs Projects and Business Performance	7	10

Name	Files	References
Language and Contextualisation	8	15
Leadership	10	20
P3M Improvement Model	13	34
P3M Methodologies Procedures and Templates	6	11
Pipeline of Programs and Projects	3	6
PMO, EPMO	8	26
Professional Development for P3M	13	32
Return on Investment (ROI)	1	2
Risk and Opportunity	5	5
Stakeholders External	1	1
Stakeholders Internal	1	1
Succession Planning	2	2
Systems Thinking	7	18
Teams	1	2
Training and Education for P3Managers	7	20
Use of Consultants for P3M Improvement	6	14

The nodes were subsequently clustered into eight (8) themes. The main themes were then divided into sub-themes.

5.4.2 FINAL P3MCIM THEMES AND SUB-THEMES

The themes are indicated in the left column with sub-themes in the right. These represent topic areas discussed by the interviewees. These eight themes have been chosen as a result of the volume of comments (Number of References provided). The topics also relate specifically

to potential components of the P3MCIM model. The sub-themes attracted a smaller number of references. The numbers against the themes (in brackets) represent how many interviewees mentioned the topic (first number), and the second number represents how many times the topic was mentioned. Sub-theme numbers (in brackets) only represent how many times the topic was mentioned.

Table 5.7 P3MCIM Summary of Themes and Sub-Themes for analysis

Themes	Sub-Themes
Theme 1: Change Management for P3M (13/82)	1A Reasons – why (22)
	1B Attitudes (25)
	1C Methods for change to improve P3M (18)
Theme 2: Corporate Business Strategy (6/13)	2A. Benefits Management (13)
	2B. Capability and Sustainability (13)
	2C. Governance (4)
	2D. Pipeline of Programs and Projects (6)
	2E Return on Investment (ROI) (3)
	2F. Risk and Opportunity (5)
Theme 3: Cultural Competence and Management (12/42)	3A Approaches and Problems (22)
	3B Consolidating (10)
	3C Developing (10)
Theme 4: Executive Manager Behaviour (13/69)	4A Approaches and Problems (39)
	4B Attitudes (30)

Themes	Sub-Themes
Theme 5: KPIs for Business and P3M Performance (7/10)	5A KPIs for P3Managers (5)
	5B KPIs for Programs & Projects (3)
Theme 6: PMO, EPMO (8/26)	6A P3M Methodologies Procedures and Documentation (11)
	6B Health Checks, Gateway Reporting (6)
	6C Stakeholders Internal and External (2)
	6D PMO Governance and Position (9)
Theme 7: Professional Development for P3M (13/32)	7A Coaching and Mentoring (3)
	7B Executive Coaching and Advice (4)
	7C Job Descriptions for P3M (4)
	7D Succession Planning (2)
	7E Teams (2)
	7F Training and Education for P3Managers (20)
Theme 8: P3M Improvement Model (13/34)	8A Systems Thinking and Integration (18)
	8B Language and Contextualisation (15)
	8C Leadership (20)
	8D Use of Consultants for P3M Improvement (14)

5.4.3 DISCUSSION AND ANALYSIS OF THEMES AND SUB-THEMES

The following themes have been selected as they correspond with those areas that interviewees identified as prominent. The themes and sub-themes also relate to potential components of a P3MCIM model.

Theme 1: Change Management

This theme was prominent in 13 out of 14 interviews. The discussion centred on organisational issues regarding change rather than on the variation of functional change relating to changes in programs and projects. As the highest-scoring topic for discussion, this is a salient element to be included in a new model's components. The issues of "why", "attitudes", and "methods" as identified by the interviewees are addressed hereunder.

Sub-theme 1A: Reasons why change initiatives have been implemented

The first interview question asked interviewees "why" organisations should undertake change as a means of driving improvements in P3M. Critical reasons for change included the following:

DBac Asserted that "…improvement initiatives were largely problem-based."

BF: Organisations "…embark on improvement initiatives because, as the main catalyst, something has gone wrong."

DB: "…organisations embark on improvement initiatives because there has been a crisis where the Secretary or Deputy Secretary needs to explain their position to Senate Estimates."

Daud: "The first was compliance; the second was to improve capability."

WD: "Organisations embark on improvement initiatives because they essentially want to improve business capability and performance. The approach needed to make sense and add value to the business managers".

Key insights from the quotes are: change is initiated from problem-based organisational issues, something has gone wrong, there has been a crisis or managers want to improve capability and performance.

Sub-theme 1B: What are attitudes to change?

However, the issue of change became more significant when attitudes to change management were explored, such as illustrated by the following comments:

AR: The scope of any initiative must have potential outcomes and be meaningful, and he suggested that "the rationale for the change 'the why' must be accepted emotionally".

DHod: "Executives do not want to put something in place unless they have to, for the organisations' survival"… and …" a significant issue in any change management initiative is to deal with anxiety and attitudes."

Daud: Therefore, the success of change will be driven by those who "understand it and commit to it"… he exemplified by posing the question that managers should constantly ask, "how will we work differently?"

PR: In many cases, the critical reason for suffering losses was that the managers did not accept change and maintained the old culture. Moreover, organisations that have poor results from improvement initiatives always "prejudge a solution".

SH: "Accepting change is often very reliant on three criteria: power, politics, and personalities." Furthermore, "These criteria inevitably cause conflict, and for corporate improvement to take effect, it must be attempted as a whole".

These comments suggest that the negative attitudes to change management need to be addressed before any new model can be initiated. As such, the model needs to be preceded by a recognition phase involving senior executives, in a workshop/retreat environment that discusses the need for change management, and a plan to support its implementation. This comment will also be addressed in the findings.

Sub-theme 1C: Methods of change to improve P3M

Strategies for change were explored with the interviewees, including those driven by executives and middle management. Views regarding how to achieve success in implementing change varied considerably. This is illustrated by the following comments:

AR: He had been involved with initiatives at the corporate executive level with public companies and stressed that engagement in change initiatives was primarily behavioural.

AR: He suggested that change must be "customer-centric" and flexible, adding that the adoption of standard processes is vital. He referred to a phenomenon he described as "the human nature smell test", which he suggests gives immediate feedback on whether the change is suitable or applicable. He also stressed that the main drivers for the change needed to "add value to the business".

BF: He stated that very few initiatives "have been a result of thoughtful management" and "……… an executive team might know what to be fixed but have little knowledge of how to go about it"

BF: "they strategically and practically enhanced their project management capabilities and ……. created a group of approximately 20 professional personnel to drive the change".

DB: Organisations with a sound approach to improvement link "change management and project management in parallel"; that is, they go "hand in hand". Moreover, "linking change management with uncertainty to measure benefits is a skill that is not well-known but is now being learned". This comment will be addressed in the findings.

DHod described a more formal process of collaborating with executives who decide on an "action plan of activities" that requires careful planning across portfolios and programs. These include streams of work and custodians and in some way a "dissolution of what was"; the key responsibility in this governance strategy is "to deliver the most value for the business".

Daud: Any program for change needed to be an "actively managed initiative" with "conscious improvement managed". This comment will be addressed in the findings.

SH: The discipline of "evidence-based performance" works well by stating that change management in a hierarchical environment is undertaken "incrementally".

WD: "Considerable research and diagnosis of where an organisation baselines itself against its niche in the market is mandatory." Therefore, a complete diagnosis will indicate where the best competitive advantage lies in the proposed changes. His key role was to influence senior managers to attain their "buy-in" to an extensive program, assisting them to be "open and willing to cooperate with a new way of doing business".

These views indicate that any potential model for improvement must contain a significant component dealing with the planning, management, and successful implementation of change and a focus on attitudes and behaviours. In view of this, the managing change component will deal with the attitudinal shifts required to maximise the change process regarding all P3M work chain levels and the behaviours needed to underpin the successful implementation of change.

Theme 2: Corporate Business Strategy

Regarding corporate business strategy and planning, the responses were as expected, however, translating that into an integrated portfolio that encapsulated programs and priority projects was contentious.

Sub-theme 2A: Benefits Management

There were several interpretations of what the term 'benefits' meant and how these were measured and achieved. Most interviewees suggested that benefits were diverse and rarely centred on the traditional "on scope, on time and on budget" norm.

DB: The Portfolio Budget Statement (standard planning tool for Australian Departments) must be linked to the Corporate Plan and the performance management framework, and that "if you cannot measure it, you cannot manage it". He stressed the importance of a contextualised KPIs for managers linked to benefits realised.

BF: "Horizontal and vertical integration of business and project management is essential". The maintenance of fulfilling the business needs, outcomes and benefits of project management is essential.

BF: "The difficulty and challenge of benefits management are that the project manager has moved on and the operational managers have little interest". Herein is the inherent problem with benefits realisation, its timing.

DHod: By way of choices of business cases, the programs were ultimately geared towards "business outcomes" (that needed to be realised).

DW: He cautioned that "benefits management is difficult". He related his comment to the timeframe and the reporting area (usually outside the project cycle).

JH: A successful organisation needs people "in the sensible middle" who use a system to its best effect but have a keen eye on the result and its benefits attainment.

WD: Stressed the need for ongoing diagnostics on at least a six-monthly basis, linked to the performance management system.

These statements confirmed that even though considerable effort has been put into outcomes and benefits management, performance management and links to P3M are still developing in the Australian context.

Sub-theme 2B: Capability and Sustainability

Opinions varied on what human resources, or capabilities, were required to underpin sustainability. Still, it was suggested that those organisations that achieved reliable results were driven by senior management or a group that sustained the improvement initiative over the long term.

AR: The answer to "is this working" is usually followed by considerable diagnostics around "capability to arrive at results". This comment suggested that a close examination of people and expertise was necessary.

BF: "They strategically and practically enhanced their project management capabilities and quite seriously created a group of approx. 20 capable professional personnel to drive the change." He emphasised that "good practice also relies essentially on stability and commitment long term".

DB: "The crisis fundamentally challenges the organisation's capability to manage its programs and projects, so P3M is essentially put in place to address the capability shortfall". In the public service, the reaction to capability management must be "top-down", resulting in a Portfolio Board or Investment Committee being formed at the senior executive service level.

DW: "Clear objectives and performance measures (metrics) are mandatory". This comment indicates that metrics are necessary for both the organisation and its people. The next-generation model will incorporate metrics for business maturity linked with manager achievement and professional development.

SH: Organisational change is continuous, "nothing is static," and" any model that is admired is usually out of date". This comment suggests that the model, itself, is not the critical element. Change relies on its managers' ability to achieve results using continuous improvement.

These remarks emphasise the people factor in establishing capability and sustainability. In summary, they include strong leadership of a sustained change initiative from senior management, an examination of professional capability and expertise, stability and commitment long term, clear objectives and performance measures, and a realisation that change is not static.

Sub-theme 2C: Governance

The remarks below focused more on decision-making rather than governance structure.

JH: Examples he gave were "talking not typing" and "the Tarago test". The first emphasised communication (and involvement in decision-making). The second suggested that the number of members on a governance body should fit in a people mover (i.e., no more than seven) to ensure effective decision-making and accountability.

PR: Indicated that organisations wanted to "keep being successful", and those he had worked with (in Australia and overseas) were using a more "integrated approach" to improvement strategies and governance (decision-makers from several areas of responsibility).

TS: When discussing governance regarding a future model, he indicated that it needed to include a hefty layer of "ethics and values" and the increasing role of "social responsibility" in decision-making. Good governance involved working to agreed, universal objectives and not "playing the blame game".

These comments suggest that it is not the governance model itself, but the efficiency of the decision-making process needed for governance to be effective. Again, decision-making is a behavioural commodity, and its efficiency was interpreted as underpinning governance.

Sub-theme 2D: Pipeline of Programs and Projects

This theme focuses on the need to include a priority list (pipeline) of programs and projects in a portfolio to integrate P3M more effectively into the mainstream strategic direction of an organisation.

DB: "The crisis mode environment" (urgency of scrutiny) ensures that all projects and their approvals are examined. This "portfolio approach" proved to be successful in at least two government agencies, according to DB.

DHod: In developing a "pipeline of programs and projects", the reliance on the capacity to carry them out is just as important as realising the benefits gained and, in addition, resourcing and scheduling were critical.

MH: A monthly dashboard is displayed for strategic projects, of which there are twenty-five with 50% in planning and 50% in flight. Divisional programs are dissected into appropriate levels. Good communications with short updates on progress are standard.

MH: Board reporting primarily emphasises the "investment benefit" realised from projects prioritised in the pipeline.

These positive comments underline how the "pipeline" management discipline is applied in real work environments. As such, it is a critical component for inclusion in a prospective model.

Sub-theme 2E: Return on Investment (ROI)

Return on investment has traditionally been calculated in financial terms. The interviewees also emphasised a wide variety of ROI that include products, processes and service delivery.

DW: Setting up a "dedicated internal team of project management Subject Matter Experts (SMEs) provides the best ROI".

PR: A competent portfolio level manager should concentrate on "return on investment at every step" as a critical business driver.

PR: "Few organisations look at the value of their work as a return on investment. However, it is a significant marker of a mature organisation that understands the risks of not doing this."

As ROI is expected to be a key feature in approved Business Cases, it must be included in a model. However, qualifying the types of returns on investment and measuring those returns requires strategic analysis and judgement by P3M managers.

Sub-theme 2F: Uncertainty Management (Risk and Opportunity)

The term risk management is a common feature in project management competency. The interviewees' discussion has taken a broader approach to balance risk and opportunity; emphasising uncertainty management.

DBac: Emphasised the importance of "risk management" and "opportunity management" being all-important for managers at each level. "There needs to be a balance: uncertainty management."

MH: "A Risk Analyst instituted an organisation-wide Risk Register that incorporated top-down business risk that was linked with project risk registers."

PR: This organisational system recognised that "what might be viewed as a significant risk to the achievement of work-related objectives at the factory floor level are not in

themselves the same risks identified at senior management or shareholder level. Therefore, levels and categories of risk are essential to identify."

SH: "In major complex projects, risk management had a well-structured system and was effectively used."

SB: In large departments, "risk management teams and change management teams need to support program and project managers."

These remarks support the inclusion of uncertainty management in a model because it provides a balanced approach at several levels of an organisation and across all project types using an adaptable but uniform formula.

Theme 3: Cultural Competence and Management

Discussing cultural competence and its management with the interviewees was an interesting overlay to the more technically oriented themes. Understandably, this is one theme that requires further attention.

Sub-theme 3A: Approaches and Problems

This topic, although having organisational wide impact, was not discussed in considerable detail. Because of its broad scope, interviewees were asked to comment on culture as it applies to OP3M.

AR: The main problem that AR commented on was establishing and maintaining a culture in an organisation. A federated approach using both "top-down" and "bottom-up" inputs would set a process for continuous improvement and development of a single culture (referring to the Six Sigma approach). However, he remarked that individuals often ask, "what's in it for me" rather than "what's in it for us".

DHod: Stressed the importance of the components of an improvement model being described in "their language, using their vernacular and their culture." He suggested that a poor use of strange or unusual context and unintelligible language (external jargon) will thwart any change or improvement initiative.

Sub-theme 3B: Consolidation

According to the interviewees, the consolidation of change from an old culture to a new one is not often considered. They offered the following comments.

DW: The model's approach and application must align with the organisation's culture, especially at the "program level and includes clients/customers".

SH: "There would be two net results from this overlay (of cultural competence)." The first is that internal and external people would see "retention" as something desirable. "Loyalty and retention", he suggested, "would build an appropriate and long-lasting culture."

Two fundamental issues emerge from these comments. Firstly, culture must be inclusive of external parties, and secondly, it must include long-lasting levels of respect and loyalty.

Sub-theme 3C: Development

BF: "There is no doubt that cultural competence in P3M is a critical element"; in that, unless you have organisational acceptance (for P3M) and "this is how we do business around here" (collectively), it will simply dry up, with individuals doing things their way.

As stated above, this topic is an overlay set of behaviours that requires further investigation, analysis, and formulation.

Theme 4: Executive Management Behaviour

This theme attracted the second-highest level of comment. There was a mixture of positive and negative comments that needed to be addressed under the expected behavioural norms to support embedding an organisational-wide (OP3M) culture.

Sub-theme 4A: Approaches and Problems

The following comments indicate that executives may not take full responsibility for program and project management concerns if targets are not met. The proposed improvement model contends that targets will be better achieved if greater responsibility is taken for P3M at the executive level.

AR: Damage can be caused by management incentive systems and schemes resulting in "personal self-interest". To counteract this, he agreed that "distributed power from the top and the bottom (of the management hierarchy) is essential" for effective P3M.

BF: Some managers "don't know what they don't know" (concerning an integrated project environment), so they call in external advisors. "And this results in the consultant being passed from one manager to another, with no consolidated enterprise-wide approach.". While "the consultant may have CEO support, the critical support of the middle managers is the main challenge."

DB: In successful agencies, "the project management framework was driven by a mandate from the Secretary." Furthermore, primarily observed by all managerial levels.

DB: "The roles, responsibilities and competencies of Senior Responsible Officers and Program Managers are critical for the delivery of project outcomes, where careful selection and professional development (of them) is necessary for them to be effective." Furthermore, "At portfolio levels, the essential skill set required by managers at that level is selling and marketing the value of programs and projects, whilst at the same time being clear about how they are implemented and finalised." These comments indicate that targeted programs/coaching for executives is necessary.

DW: Senior users must understand the full competencies of P3M and not be "focused on the iron triangle", noting that SROs, Senior Executives and Senior Suppliers need to have "significant knowledge, involvement and commitment".

JH: Indicated that "true sponsors/SROs are needed". In other words, he stressed that there must be executive ownership and leadership with senior managers "wanting it (programs/projects) to work".

JH: "Initiatives that have worked have involved behavioural changes made by sponsors of programs." JH has collaborated with senior managers to change how they conceptualise, plan, and deliver programs.

JH: Performance agreements have been agreed, especially with "decision rights well-orchestrated". Managers "were in no doubt about decisions they could, would or needed to make for both the survival of a project or its demise."

PR: Senior managers "are not looking at the problem from a client's viewpoint" and have a narrow perception of what is needed. Also, in seeking a solution, they do not "fully contextualise" their situation and do not match recommendations in detail to their business environment. This comment reinforces the need for "distributed power" mentioned earlier.

SH: Having no systems for projects meant that senior managers are "accountable for little" and "Having no added value down from the hierarchy actually suits many people". The culture of the public service is "mostly reactive, not proactive", which means that the notion of P3M is not understood or practised. These comments suggest that maturity in P3M is at a low level, especially in some public sector agencies.

SB: The Department suffers from "business fiefdoms" that restrict the building of capacity, and "building capability tends to revolve around numbers of positions, not efficiency."

TS: "Internal politics stultified progress", and there is "no corporate improvement" because of management hierarchy.

WD: "Managers with their agendas did not survive in this kind of corporate approach." (A nationally distributed private sector company).

There was a considerable difference between the comments made depending upon whether the interviewees were from the private or public sector. It was evident that private sector organisations' executive management behaviour was under more scrutiny than the public sector. Improving a P3M system through the involvement of senior management was deemed critical.

In summary, key insights from this section include: incentive schemes engender personal rather than organisational interest; external consultants are rarely used to consolidate and enterprise-wide approach to OP3M; successful agencies use a project management

framework driven by a mandate from senior management; roles, responsibilities and competencies of senior officers and program managers are critical for project outcomes; initiatives that have worked have included behavioural changes made by sponsors at program level; decision rights are well orchestrated in performance agreements; distributed power across programs and projects is preferred to singular senior decision-making; a P3M system allows for a growth in organisational maturity; business fiefdoms are counter-productive to OP3M; and internal politics does not progress corporate improvement.

Sub-theme 4B: Attitudes

Professional competency incorporates two learning domains: the cognitive and the affective (Hyland 2010; Zaky 2019; Porath 2020). The former includes knowledge and skills, and the latter is based on behaviours and attitudes. The interviewees devoted considerable time and comments to this section.

AR: Suggested that "This power-based cycle (of executive management) is a danger to focusing on corporate initiatives, in that behaviour is different from intent". He suggested that "these conditions rarely provide for a sound corporate approach". AR observed that individuals and their outcomes at the executive level precede the interests of the company.

BF: "The CEO or management team are unhappy at programs and projects failing, or even worse not meeting their expectations." Irrespective of the solutions recommended, "trust is diluted owing to suspicion by middle management that it is focussed on their performance."

BF: "Those individuals who completed the program (Diploma in PM) did very well on individual projects (approx. 150), but their managers had no similar or aligned program or coaching and 'didn't get it'; despite the Department Head (Secretary) being fully supportive." BF used this as a further example of middle management scepticism and the need for integrated professional development programs.

DBac: Managers have "no idea of how to manage change", and even worse, the idea of improvement is based on "personalities, and their process as senior managers".

DB: In managing projects, senior managers are influenced by "ambition and power" and an impatient attitude overridden by a "let's get it done" syndrome. This kind of management style driven to "produce results quickly" results in "cutting corners" and is anathema to the professional project management system and processes.

DHod: "Executives do not want to put something in place unless they have to for the organisations' 'survival'. They would rather maintain the status quo unless there were something in it for them."

DHod: "Executives have two competing anxieties: survival and learning. The anxiety of survival far outweighs the aspirational anxiety of learning, and that real change occurs when survival is more evident than learning. The anxiety of learning also entails executives confessing their ignorance and need for professional development. Whereas the anxiety of survival is driven by fear."

DHod: Executives arrive at a 'Come to Jesus' moment where often they realise, they have "a mismatch between accountability, responsibility and action." Moreover, "To arrive at an 'AHA Moment' … sometimes involves considerable discomfort, vulnerability and possibly shame."

JH: Executives have their private agendas. "Serving their interests in management is contrary to the management of programs and projects."

JJ: Senior management has an "overinflated value of their importance", that they "rush to successful failure", "get excited by mundane issues", and believe that "failure is an option".

SH: A meeting between the Department in a briefing for contractors was poorly prepared and presented. "The net result was that no respect was shown to them for their knowledge and abilities, and in turn, no respect was given back to the Department."

TS: Many managers are "unconsciously incompetent", that is, if an approach to innovation and change is developed and does not work, it is the consultant's problem, not theirs.

WD: Managers need to be ultimately "open and vulnerable" in reviewing current practice against a new way of operating.

In summary, key insights included a power-based cycle of executive management is a danger to corporate initiatives, trust as a key attitudinal connection between managers, senior managers need aligned programs and coaching with middle management, senior managers are influenced by ambition and power and company survival (driven by fear), expect these to be given to all stakeholders to retain respect for the organisation, and managers need to be ultimately open and vulnerable to review a new way of operating. These remarks reinforce the need for attitudinal and behavioural professional development for senior managers in a model for improvement.

Theme 5: Performance Management and Key Performance Indicators (KPIs)

The discussion around performance management and KPIs was predictable as most interviewees agreed that some form of measurement is necessary and valid. The following statements corroborate this trend.

DB: "The Portfolio Budget Statement must be linked to the Corporate Plan and the performance management framework through its KPIs." (Used in Australian Departments).

PR: "Success manoeuvres around objectives, … and a reorganisation of metrics is continuously necessary." The business needs of an organisation need to be reviewed regularly, thereby impacting the objectives, strategies for implementation and associated KPIs.

PR: "Linking KPIs for managers to maturity levels would give credible metrics for improvement." This method is a "new feature" of the P3MCIM model that PR has observed in action.

SB: "As a P3M3 (maturity model) assessment had been undertaken, particularly for governance, KPIs are linked to 4 levels of P3M3 compliance". SB notes interestingly that the P3M3 Maturity Assessment approach works if it is matched with appropriate

KPIs. Too often, managers work on an action list with no mandate to achieve or measure results.

Sub-theme 5A: KPIs for P3M Managers

This sub-theme highlights how a performance management system of KPIs for managers can be linked to specific programs and projects.

BF: "Another essential is the job-based work descriptions that drive professional development, together with the use of KPIs for performance measurement."

BF: "KPIs were also used to drive the management team's performance (and senior management annual bonuses); coupled with maturity development." BF thought these were both well-contextualised and helpful to the management teams.

DB: "Getting the right people in the right projects". DB emphasised that "if you can't measure it, you can't manage it" and stressed the importance of contextualised KPIs for managers.

DHod: He supported the concept of a combined KPI strategy for personnel and the organisation itself. He further progressed his argument that "mandated competent professionals in P3M should be part of the executive suite."

WD: "KPIs for key personnel in conjunction with regular employee surveys (to ensure that the KPIs were pertinent) ensured maintaining the right people in the right positions."

WD: "The performance model was openly available to staff, and a 'business scorecard' was observed and discussed by all staff in the over 200 sites across Australia."

JJ: Developing KPIs for leaders and managers meant that remuneration results were secondary to things like "reducing staff turnover" and promoting "retention and loyalty".

JJ also maintained that KPIs were designed for product and service purposes rather than the organisation's benefit and continuity/social responsibility. He suggested that corporate responsibilities need to be integrated with program and project KPIs.

In summary, competency-based job descriptions assist with contextualised KPIs and performance management, matching skillsets with projects is ideal, linking manager's KPIs to strategy should occur, executives should be P3M competent professionals, a performance model should be readily accessible organisation-wide, and corporate responsibility should be a strong KPI.

Sub-theme 5B: KPIs for Programs, Projects, and Business Performance

Although involved with performance measures, interviewees did not widely address this sub-theme as many practitioners have not been involved with implementing KPIs for criteria linked to organisational maturity levels and its implementation.

WD: "A systems management regime ensured that a tailored set of KPIs for business and contracting management were established. The system meant that, on an annual basis, the companies (management teams) measured their performance against uniform criteria (across the corporation)."

MH: "Any model must have a 'performance plan' with KPIs to measure outcomes and benefits."

PR: "By ascribing measurable and quantifiable metrics at each level of management, it becomes a simple matter of determining the correlation between the value of achievements made at each level to the activities of individuals, teams, project and portfolio managers, strategic and business managers, and finally the organisation as a whole." This is a crucial message for an intended next-generation model.

The positive comments in this theme reinforce the view that KPIs are essential in any business improvement model but need to be considered more broadly than just at the project level. Instead, they need to encompass the attribution of the value of achievements at each management level and reflect the organisation's activities as a whole.

Theme 6: PMO and EPMO

The comments by interviewees about PMOs encompass many forms of PMO, some of which have been successful and others that have not. Nevertheless, the interviewees confirmed that some form of PMO is necessary. Note that a range of terminology is used for the term PMO.

DB: "In successful organisations, a Project Management Office allows for central control to engender a uniform approach." "However, the PMO concept needs strong customisation and needs to be linked to business outcomes."

DB: In successful agencies, the project management framework was driven by a mandate from the Secretary. "The mandate included a corporate-driven project management office and close financial management."

DB: Projects led by information technology (IT) specialists fail, as they are "expensive and slow to deliver". Therefore," if the PMO sits inside IT, its existence has little or no impact on projects." DB recommends that "any PMO has close links with financial management" and "be located in that division, which espouses a portfolio approach to management."

DW: "The PMO of some years was dismantled. However, the need was established to centralise and align P3M practice. Engaging a consultancy (Big 4) was to bring in expertise to rebuild the EPMO; however, the importance of the EPMO's formal mandate was that it should be highly supportive of portfolio, program, and project management."

JH: "Some form of project management framework and a monitoring and control device such as a project management office (EPMO or PMO) is useful." Unfortunately, he added, "Initially, these sometimes-new features were mostly outsourced, and the expertise did not reside within the organisation."

MH: "Experience from failed projects saw the need for a structured P3M framework to support project success in the future. It resulted in a PMO Office Lead (being appointed) who specialised in both P3M and change management."

MH: Indicated that "A PMO which depends on policing and auditing projects is totally inappropriate and a poor use of costly resources."

MH: "PMO staff need to consult with the business teams to understand their current drivers and to provide a service to program and project managers. The PMO's work does best sitting alongside the business driving strategic change initiatives. ICT is an important enabler to these initiatives, but the business drives the change."

SB: "Setting up the EPMO has shown how the integration of management was achieved. The capital investment portfolio constitutes eight programs, sub-programs, and projects. APS staff are introduced formally to the EPMO with onboarding programs."

TS: Suggested that "In a large organisation it would be preferable to break up the central organisation as follows: PDO - Portfolio Delivery Office, PMO - Program Management Office, and PSO - Project Services Office."

These positive remarks about PMOs reinforce them as a vital component in an improvement model for P3M in organisations. As TS remarked, appropriately naming a PMO relevant to the organisation's needs is advisable (see the discussion in Chapter 9).

Sub-theme 6A: P3M Methodologies, Procedures and Documentation

This sub-theme discusses the technical requirements for project management that reside within any framework managed by PMOs.

AR: He commented that change must be "customer-centric" and flexible, adding that the "adoption of common processes is vital."

BF: Having developed extensive project management guidelines, practices, and workshops that worked exceptionally well while undertaking the consultancy, the framework and processes died when he left the organisation. He suggested that this was due to "organisational maturity and systems not being embedded" and that the change was "temporarily implemented, rather than seen as a long-term transformation."

BF: "Extensive methodology development coupled with PM workshops (competency-based learning) needs to be backed by P3M systems to support them."

DW: A "borrowed PM framework" was implemented, but "it didn't fit the agency", and "considerable tailoring and contextualisation needed to be undertaken."

DW: "Easy to follow processes" are vital. "Worked examples of successful programs and projects are needed and should be available."

MH: "The PMO was to be responsible for selecting and prioritising projects using a scoring mechanism as well as developing a PM framework which included methodologies, procedures and business/project processes."

PR: "Project management is a people business". He stressed that "P3M frameworks procedures and toolsets, while important, will not be used if the people are not competent (in their use)."

SH: In a public service situation, he has observed: "that 80% of the work relies on a good project management framework and system and that 20% involves power and politics that needs to be carefully managed."

The conclusion drawn from this discussion is that a framework and system for project management is vital but needs considerable customisation and contextualisation with appropriate language to ensure its ongoing sustainability.

Sub-theme 6B: Health Checks

The discussion on this topic confirmed that health checks and reporting are essential in any model.

DHod: Objective reporting on projects provides a "sanity check" and is vital to the organisational system. By this he meant that managers need to identify whether a program is viable or not; with cancellation being option to retain corporate sanity.

DW: HCs enable identifying "quick wins and the celebration of milestones." This comment promotes health checks as a motivational force necessary for teams in difficult situations. The HC may well highlight where improvement is needed, but it also publicises achievement.

DW: "Deep Dives into Projects" can be highly rewarding if they are logical and structured, using a systems-based approach.

SB: "A solid health check system as part of the EPMO has many advantages." She went on to explain that the EPMO established a solid place in the organisation by adding value to programs and projects through the HC system.

TS: "An ideal place to start (with OPM) is in the project health check area."

TS: Also commented that a health check provides "benefits that they understand and recognise (at the organisational level), but especially benefits to the individual".

In summary, the HC provides for a corporate sanity check, motivation for teams and recognition, internal deep dives for programs and projects, a means of professional development for managers internally, and a starting point for organisational improvement.

Sub-theme 6C: Stakeholders – Internal and External

Although not discussed extensively, this topic has recently been embedded in project management's national and international competency standards. Identification of internal and external stakeholders is mandatory, as is an analysis of their expectations and management of these and ongoing relationship building and maintaining those throughout the project/initiative and beyond in terms of a future client base.

AR: He indicated that outsourcing could "elevate transparency".

DW: Developing and recognising skills and experience add to capability and motivation.

Necessarily, an improvement model will incorporate external entities to an organisation

to increase its capability and longer-term assisting with its sustainability.

Sub-theme 6D: PMO Governance and Position

This subtheme addresses the issue of the governance and placement of a PMO/EPMO.

DHod: In discussing a PMO or EPMO, he remarked that the language was incorrect. Instead, he asserted that any central office needs to be "value-driven" and should use a new name called the "Value Management Office."

DW: The need was established to centralise and align P3M practice. The importance of the EPMO's formal mandate was that it should support portfolio, program, and project management.

Theme 7: Professional Development for P3M Managers and Administrators

The interviewees were adamant that the concept of professional development in P3M was essential for any developing model. Training alone would be no substitute for longer-term, planned strategies to acquire expertise and increase capability in an organisation.

BF: "At a professional level 'they (the Department) had an impressive knowledge of what was needed. They cumulatively had a vision of what they wanted and developed a means of getting there." Therefore, "Managers were committed to ongoing professional development and training supporting P3M managers."

BF: "A system that worked was their adoption (the Department) of competency-based assessment of the project and program directors, which is perpetuated to this day against professional certifications."

BF: "Selecting the right people to undertake corporate change coupled with the right people for professional development (in P3M) is essential." As well, "These techniques (competency-based training and assessment in P3M) demonstrated to Executive Management that the learning programs were effective."

DBac: Remarked that he was critical of the quality of education and training (for P3M), which he termed "questionable". (Having reviewed and written P3M programs at CSU).

Furthermore, he commented that "Many programs he had seen have included 'intellectual baggage' that has been fostered by a technical rather than a management and leadership upbringing."

DB: Commented that, "This (professional development) is not just a matter of psychometrics (aptitude to work in given situations), it is a matter of 'duty of care' for project personnel." This statement has wider ramifications in that personnel selected for projects may not be capable of working in that kind of environment. If they are identified as not suitable and under stress, they should be appropriately re-educated or removed.

DB: "The roles, responsibilities and competencies of Senior Responsible Officers and Program Managers are critical for the delivery of project outcomes, where careful selection and professional development is necessary for them to be effective."

DB: Referred extensively to the "soft skills" involved in teams management and communications. DB's recent PhD thesis focuses on this issue.

DHod: "Psychometric traits for preferred behaviours (for project management) is also assessed", and he suggested it is helpful in manager selection.

DHod: "Pathways for professional development and grooming are essential for new CEOs, especially for portfolio managers. P3M skill sets should be recognised in the selection of CEOs."

DW: "A Community of Practice is working well with the participation of approximately 10% of the 900 personnel in the agency."

JH: "The onus would be carried by portfolio, program and project managers but also includes a wide range of staff involved with projects." This statement indicates that pathways and professional development must be designed for administrative and support staff.

JH: "Although professional expertise is needed (in P3M), it should not be relied on as a continuum, preferring for the expertise to be handed on to members of the organisation." This remark highlights the importance of coaching and mentoring.

JJ: Change management programs he has observed have failed as "no long-term change has been evident. This situation occurs because trainees focus on qualifications rather than gaining certifications. The difference is that qualifications centre on knowledge attainment rather than certifications relying on the evidence of applying that set of knowledge and skills against job descriptions."

JJ: "Members who receive professional certifications from their organisations should be indebted to verify a return on investment."

MH: "Professional development in P3M coupled with coaching needs to be incorporated in a career pathway." She also remarked that "Professional Certifications in P3M (AIPM/IPMA) were advantageous (as they are competency-based)."

PR: "Training needs for program and project managers was undertaken to form the basis for professional development programs", and he indicated that a "competency-based systems approach was vital." He used the example of Kirkpatrick's Four Levels of Evaluation, a popular methodology for determining the return on investment (ROI) employed most often in training and education.

SH: He suggested that a critical factor in this continuum is "the analysis for and development of professional P3M managers and attendant staff."

SB: "Professional development and pathways management are essential for organisational capability."

TS: There is an Institute of Project Management in Indonesia, but there are no "champions of competence" and no current professional certifications.

The key concepts discussed here included competency-based learning and career pathways for P3M managers and administrators. Of note was that interviewees strongly recommended that programs should be tailored to their P3M systems and corporate context.

In summary, this section has highlighted the following: senior managers need to be committed to ongoing professional development and training support for P3M managers, competency based assessment of program, project managers and practitioners is essential and should lead to professional certifications which may offer a return on investment, development programs should not be cluttered with intellectual baggage in preference to usable management and leadership strategies, professional development is a "duty of care" for P3M managers, technical skills should be well-balanced with soft skills where teams management and communications are essential, communities of practice work well for professional development because of internal coaching and mentoring, professional development also is pertinent for administrative and support staff, a ROI strategy should be built into every professional development program.

Sub-theme 7A: Coaching and Mentoring

Interviewees confirmed the importance of coaching and mentoring as a crucial ingredient in the cultural development of P3M organisationally.

PR: His long and varied experience in the education and training field led him to remark that "coaching and mentoring", coupled with "contextualisation and interpretation" for managers, is critical if a system's approach to business projects is to be realised. He also suggested that the target audience for this approach, in the first instance, should be senior/executive managers.

Sub-theme 7B: Executive Coaching and Advice

The interviewees mostly agreed that executive coaching for P3M is not widely undertaken but should be in that it is a subtle means of imparting expertise while concentrating on business planning and results.

DHod: Executive coaching is essential to "create empathy, encourage innovative ideas, and fill knowledge gaps."

JH: Some models for change are too theoretical, and application of a change initiative "needs to be underpinned by coaching" (JH coaches senior executives).

SB: Also remarked that "coaching for senior executives/SROs in their terms of reference (and P3M) is essential."

Sub-theme 7C: Job Descriptions for P3M

In any training system for employment methods, the basis is job-based work descriptions that include activities, a range of variables and evidence of performance. The national and international standards for competency in P3M are based on these descriptions.

BF: Another essential is "the job-based work descriptions that drive the design and development of professional programs, together with the use of KPIs for performance measurement."

DHod: "Job descriptions for portfolio, program and project managers are also vital for succession planning."

SB: "Job descriptions should be competency-based and appear in an organisational-wide application such as SAP."

This prominent issue means that job descriptions need to be complemented by contextualised range statements in which the duties are performed and against which evidence is produced for the standard of performance. The competency-based approach to professional development will be included in the next-generation model.

Sub-theme 7D: Succession Planning

This topic was not discussed at length but remains a vital model component for designing and implementing career pathways.

JJ: In particular, "leadership and management depend on pathways where individuals commit dollars and time into professional development and application that enables program and project success being backed up by solid succession planning".

TS: "Succession planning is another prominent factor in any model as it provides for longer-term pathways and motivation, and levels of professional development and thinking."

Sub-theme 7E: Teams

This topic did not attract a sizeable number of comments. The interviewees assumed its importance as a component of a P3MCIM.

DW: Setting up a "dedicated internal team of project management SMEs; maturing over a period, has been most successful. Clear objectives (organisational and P3M) and performance measures (metrics) are mandatory". He stressed that "engagement of staff in promoting expertise and capability promotes ownership through teamwork".

SH: "Working with a core team of 45 multicultural personnel; incredible team-effectiveness was achieved through their belief and commitment to the work."
SH: Teamwork … "Mutual support and the confidence it engendered produced outstanding results."

WD: In establishing a national group of regional teams, "the right people in charge of projects, with not only the right skill sets but the right psychometric disposition was critical for successful performance."

In summary the interviewees highlighted the importance of team formation and strategies that have been increasingly affected by technologies available and that establishing ownership and shared responsibility is vital. So too is the necessity to work with contracted teams that work in different time zones, cultures and generations, with trust and respect providing great motivators.

Sub-theme 7F: Training and Education for P3M Managers

This topic is inextricably linked to the professional development comments mentioned previously.

BF: " A system that worked was their adoption of competency-based assessment of the project and program directors, which is perpetuated to this day against professional

certifications; this is a very well-structured incentive system for improvement; that is highly practical and workplace-based."

BF: "Good training, but there was no system to deliver to." This comment indicates that the training was well-received, but skills and knowledge were not transferred into the workplace in any meaningful way.

BF: A poor example of on-the-job training … the "guys with gnarled knuckles … staring at a computer."

DB: "There is a diverse set of skills and competencies required for portfolio, program and project managers that are not readily apparent in the Australian Public Service, over and above their general job statements. These require specific programs."

DW: "Developing and recognising skills and experience add to capability and motivation."

JH: At the most elementary level (Level 1), "training and templates need to align with the business context (not that just of the model) and be highly related to the workplace and business needs. Flowing from level 1 (the understanding of project management) to level 2 requires learning that is "localised and tailored application"; most importantly ", learning is by doing."

JJ: Suggested that organisations should be "Fully committed to training systems design and implementation followed by strong leadership and coaching, coupled with immediate evaluation reporting, as well as undertaking a longitudinal study to validate outcomes."

JJ: During training sessions, he has observed learners stating, "why don't management come on this course" and also, after training, he understands that senior managers are not well versed in the course and training objectives and can often undermine the training by stating that "we don't do that here".

MH: Mentioned that one of her organisations is "responsible for the competency-based training of program and project managers using practical, fully contextualised templates using standard (well-known) language." Furthermore, "Most training was undertaken using half-day workshops based on planning for priority projects or different project types. The impact was immediate."

PR: Those organisations that successfully organised change spent considerable time in "identifying the problem", which usually "linked forms of P3M training with achieving business objectives".

SB: "Professional development and Pathways management are essential for organisational capability."

In summary, the following insights were promoted: training and professional development needs to be supported by systems designed pathways, generic programs should be supported by context specific programs, recognising skills and experience and to capability motivation, programs to be aligned to use the business context, senior manager and P3M manager programs should be aligned, and P3M professional development links problem-solving with the achievement of business objectives.

Theme 8: P3M Improvement Model

There was considerable input to this theme which provided the researcher with considerable material for analysis. Several of these comments are repeated from above but provide a helpful summary.

BF: As a significant part of the model, BF fully supported each phase's "Initiation and Management Plan".

BF: KPIs were also used to drive the management team's performance (and senior management annual bonuses); coupled with Maturity development, he thought these were well-contextualised and helpful to the management teams.

DHod: He entirely agreed with "the concept of a combined KPI strategy for personnel and business which further progressed his argument that mandated competent professionals in P3M should be part of the executive suite."

JH: An appropriate model for the future, he emphasised that it must be developed as a system, but at the same time, a "degree of importance" for managers involves "minimum requirements" for success.

JH: A successful organisation needs people "in the sensible middle" who use "a system to its best effect but have a keen eye on the result and its benefits attainment."

JH: A good systems model for improvement will rely on "behavioural change" that sees it through an altogether "different lens".

MH: Any model must have a "performance plan" with KPIs to measure outcomes and benefits.

PR: He indicated that more than anything else, "project management is a people business". He stressed that P3M frameworks procedures and toolsets, while important, will not be used if the people are not competent.

PR: He also suggested that "linking KPIs for managers to maturity levels would give credible metrics for improvement."

SH: An appropriate model for the future he emphasised was that whatever structure is to be developed, it must have a solid overlay of "respect for others", which engenders "loyalty" both "upwards, downwards and sideways." Loyalty and retention, he suggested, would build an appropriate and long-lasting "culture".

TS: A "more inclusive" model considers that portfolio management is indeed "not full-time". It relies on a range of support/administration people, commercial managers, logistics managers, control managers (who understand earned value for contractors AS4817) and account managers.

WD: "A next-generation model would be built around the strategic planning and the business intent of any organisation."

In summary, the interviewees confirmed and highlighted the following strategies/components: a master improvement plan is necessary, no matter the size or extent of the improvement initiative as it sets agreed boundaries and objectives; KPIs linking the business to programs and projects and managers, coupled with contextualised maturity development provides a sound basis for measurement of outcomes; a model must be systems-based designed with minimum requirements for success for all levels of management; good systems for improvement will rely on behavioural change for managers seeing their organisation through a different lens – P3M is a people business; project and organisational change management are complementary and necessary; a system for improvement must have a considerable overlay of respect and loyalty, upwards, downwards and sideways; loyalty and retention will build an appropriate and long lasting culture, being built around strategic planning and business intent. Many, if not all of these topics reinforce how to solve the organisational problem set earlier in Chapter 1.

Sub-theme 8A: Systems Thinking and Integration

Interviewees commonly agreed that systems thinking, and integration of operations and projects would be essential for an improvement model.

BF: Suggested that the critical first step in P3M improvement is to "accept what they need" strategically and adopt a business-based philosophy. This concept needs a "systems-based approach" (that integrates P3M with general and operational management).

BF: Horizontal and vertical integration of business and project management is essential. The maintenance of fulfilling the business needs, outcomes and benefits of project management is critical.

DHod: Stressed the need for executives to be part of a "living system" incorporating a "systems-thinking" mindset.

DHod: Committees need to use the organisational project management framework and

change controls and "must be systems -engaged" by "removing obstacles to enable good decision-making".

JH: Outlined the concept of "robots and heroes". Many managers become robotic when a new system is applied and follow it slavishly with scant regard for an end-product. Whereas others heroically see the end and will get there by any means.

JH: The project cycle, for example (concept, development, implementation and finalisation management), are the "must-haves". Nevertheless, a sound systems model for improvement will rely on "behavioural change" that sees it through an altogether "different lens".

JJ: An appropriate model for the future must be developed as a system, but at the same time, P3M needs to be envisaged as "core business", and that change, and risk management are an integral part of that business. He suggested that there is not much "appetite" for this circumstance, but there could be.

PR: He also indicated that "doing initial assessments against standards was critical; however, change was needed because organisational systems did not follow those standards (to those systems and procedures)."

PR: He recalled that in the case of a set of United Kingdom engineering firms where change resulted in established integrated business systems and an extensive "training matrix" installed for its senior managers, much success was achieved.
SH: Stressed the importance of having a system for project management, however "that system needed to allow sufficient time to plan but having a commission to think and change."

TS: A model is one that not only embraces systems-thinking and understanding from management but "commitment" at all levels.

TS: "A model should highlight P3M in its various applications to include both operations and capital management."

WD: Highlighted that "reinforcement of any system would be mandatory at all levels of management."

In summary, this section provided the following insights: integrating a P3M framework with general and operational business management is essential, with horizontal and vertical integration of business and P3M as essential; executives and committees need to be part of "living system" that incorporates a systems-thinking mindset; P3M needs to be seen as core business; an integrated business system (including P3M) aligned to an "extensive training matrix" for senior managers increases capability; and commitment and reinforcement of any system needs to be mandatory at all levels of management. This section specifically answered the problem set in Chapter 1: linking operational business with P3M.

Sub-theme 8B: Language and Contextualisation

All interviewees agreed that language and contextualisation are vital components of any new model.

AR: Use language that suits the organisation, not just "project management speak"; a "change of terminology is needed to make it more acceptable."

AR: "Defining what are major, medium and minor projects and the business systems that surround them in the client's language is essential, and defining complexity is mandatory."

DB: "The language of portfolio program and project management must be phrased in the business terms relevant to the organisation."

DHod: Employs a "Book of Verbatims that summarises all the interviews of their concerns in their language." (Before embarking on an organisational improvement program). DHA stressed the importance of these factors being described in their language, using their vernacular and culture.

JH: "A failure to use appropriate language" does not work.

JH: "Articulating the client's problem in their language" means that an outsider can "comprehend their world in their terms".

PR: "Organisations analyse how they are operating internally and externally to seek areas of cooperation, and thereby contextualise solutions through appropriate language and their terminology."

TS: A "glossary of terms" is crucial and needs to be "crystal-clear".

WD: Inclusive in this approach was the need to "completely contextualise the methodologies procedures and toolsets for contracting employed by each business."

In summary, key highlights are: language must be business contextualised in an improvement system; using client-based language is essential that reflects a knowledge of their culture and promotes inclusion; organisations need to analyse how they are operating internally and externally to seek areas of cooperation through appropriate language; where necessary, a glossary of terms is crucial; and completely contextualising the methodologies, procedures and toolsets for each business and its project/contract types is essential.

Sub-theme 8C: Leadership

Like cultural competency, this topic is an overlay component of any new organisational model. Valuable comments arose from the interviews.

AR: He agreed with the P3M approach that distributing power from the "top and the bottom" (management hierarchy) is essential. He also indicated that strong leadership in those levels is critical, in that "not always can the system be changed", but "good leaders can change priorities".

BF: The organisation was dedicated to what they called "human capital improvement and enhancement."

DHod: "Psychometric traits for preferred behaviours are tested along with pathways for professional development and grooming, especially of portfolio managers, and is essential for new CEOs."

JH: Performance agreements have been agreed, especially with "decision rights well-orchestrated". Agreements give leaders guidelines and room to move.

JH: An appropriate model for the future, he emphasised that it "must be developed as a leader-led system, but at the same time a 'degree of importance' for managers is that it involves minimum requirements for success."

JJ: Good organisations are fully committed to training systems design and implementation, followed by strong leadership and coaching.

MH: "There is an extensive leadership program for executives that enables them to understand their respective roles and responsibilities, including P3M."

PR: "The management teams within the successful companies all pitched in and demonstrated leadership of change by being deeply involved at all levels."

SH: It is "leadership that gives value", not "people in positions".

SH: Being able to manage "hierarchies of importance" (prioritising work and people), "managing key stakeholders", and "getting the right people" were critical.

SH: He believes in "Fearless Leadership", which, he emphasises, is paramount in resolving project problems.

WD: Gave several examples of good and poor leadership at the corporate level and suggested that "leadership style and approach is critical for an organisation's sustainability."

Professional development programs for P3M in leadership and management were considered a vital component of an improvement model. In summary they highlighted the following: distributing power and decision-making across P3M managers is essential; assessing psychometric traits for preferred behaviours and projects has merit, especially for portfolio managers; performance agreements should include leaders guidelines but with sufficient room

to move and involves minimum requirements for success; strong leadership is linked to coaching and mentoring; management teams within successful companies become involved in the leadership of change; leadership gives value rather than "people in positions"; fearless leadership is paramount in resolving program/project problems; and leadership style and approach is critical for an organisation's sustainability.

Sub-theme 8D: Use of Consultants for P3M Improvement

Many interviewees have been consultants in developing and implementing OP3M improvement programs across both private and public sectors. They offered a range of opinions as a result, as follows:

DB: Exposed problems that needed to be fixed in a "proactive rather than reactive mode … to protect themselves all managers call in external management consultants "who have their own process, whether that works or not" … usually these processes are "overly complex" and are not necessarily tailored to the circumstances at hand.

BF: And "when a consultant suggests that there is more to improvement than a few project management briefing sessions or courses/workshops CEOs become suspicious of 'gold-digging for more business." Nevertheless, "They do understand that their business is not performing and want a 'fix' that is usually fast and cheap."

DW: "Bringing in a consultancy appears to work in the short-term, but practice rarely sticks. The activity is expensive, and ROI is not always evident in the short term. This approach does not result in cultural or behavioural change necessary for P3M to work. There is 'passive resistance to change' by many personnel."

DW: "Even when knowledge transfer is included in the scope, it does not always succeed. Once the consultancy is discharged, practice often reverts to previous arrangements; how to address this remains problematic."

JH: Suggested overuse of "outsourcing does not work."

JH: "Although professional expertise is needed (in P3M), it should not be relied on as a continuum, preferring for the expertise to be handed on to other members of the organisation."

JH: "Articulating the client's problem in their language" means that an outsider can "comprehend their world in their terms". From a consultant's point of view, JH stressed that this approach is critical, as it sets the scene for how a change initiative is framed, planned, implemented and managed.

JJ: Contractors used in an APS environment was short-sighted as there was no "residual expertise" left behind once they had left. The contracting companies focus on maximising return and/or extensions of the contract period.

DHod: Warned that "consultants are in a privileged position", but this position can easily be eroded by flaunting the "the arrogance of a solution". The real aim of a consultant should be to "get promising ideas" that the client owns.

PR: "Many interactions with clients are the same, especially in the case of consultants who feel that they are paid to produce the solution. What they do not realise is that quite often the client already has the solution but needs the consultant's insights in how to implement them, or what pitfalls to avoid when doing so."
SB: "Clients, suppliers, contractors are learning about this (P3M) environment, and the establishment of teams (using P3M integration) for longer periods is working."

These remarks indicate that consultants can be important catalysts for expertise and influence required for organisational change in OP3M, but their role is not to embed the systemic change. The longer-term impact of the change process should be generated and sustained from within the organisation.

5.4.4 CONCLUSIONS FROM INTERVIEWS

Several topics confirmed the inclusion of critical components from the P3MCIM prototypes. These include: linking strategic planning with annual business plans, prioritising portfolios, programs and projects (pipeline), recognising the importance of change management, undertaking corporate uncertainty management, being engaged in professional

development, employing KPIs for programs projects and an associated performance management framework linked to KPIs for personnel, ensuring health checks are well used and applied, and undertaking benefits management and measurement of results.

5.5 CONCLUSIONS

5.5.1 QUANTITATIVE RESULTS SUMMARY FROM SURVEYS

The quantitative results from the first survey (P3MS1) showed that the components of the proposed P3MCIM were appropriate. The survey statistics suggest that all of the proposed components were applicable, confirming that they are relevant to the target audience. However, other suggestions (noted in the comments) need further consideration as discussed in Chapter 7.

The second survey (P3MS2) examined how the components of the proposed P3MCIM are being applied in current 'real work' organisations. From a distribution perspective (60% Private and 40% Public Sector), the statistics revealed that 46% of the population apply the components, 20% were undecided and 36% are not comprehensively used. Once again, other suggestions (noted in the comments) need further consideration and are discussed in Chapter 7. There was no discernible difference between responses by private and public organisations in this study apart from the conventional difference of the private sector being more flexible in governance, speed of decision-making, and receptiveness to change. private sector

5.5.2 QUALITATIVE RESULTS SUMMARY FROM INTERVIEWS

The qualitative results from the interviews showed several topics derived from the thematic analysis (noted in Section 5.4.4 above) based on the prototype components that underline priority for further investigation.

Chapter 7 will comment further on these topics as they apply to, and are components of, a revised/combined P3MCIM.

CHAPTER 6: CASE STUDIES - RESULTS

6.1 INTRODUCTION

Chapter 6 provides a summary of how management teams used and assessed the prototype models (Types 1 or 2) and provides an evidence-based test of the models as appropriate to their level of P3M expertise. This study intends not to conclude on or prove a model, but to test how a prototype model could work in practice, what is learnt from that application, and how the model could be adapted to suit any given work context, including how it could be refined into the future. This chapter captures the results of how the model has been applied using five case studies.

6.2 P3MCIM PROTOTYPES (SUMMARY REMINDER)

6.2.1 P3MCIM: TYPE 1

The Type 1 P3MCIM is used for organisations that have little or no P3M expertise. The emphasis is on creating planned and delivered projects uniformly against agreed objectives that are eventually measured and assessed for benefits to the organisation or client. It defines an internal scheme for OP3M.

6.2.2 P3MCIM TYPE 2

The Type 2 P3MCIM assumes previous development of Type 1, but Type 2 escalates to concentrate on portfolio and program outcomes involving a much wider audience and organisational level of expertise. It includes external entities.

Selection

Depending on an organisation's project management maturity level, managers need to choose which model type best suits their context. Regardless, the model appears sufficiently flexible to allow managers to choose components (from each type) that could be used in their industry, business context and work environment.

6.3 CASE STUDIES

The organisations were selected given the researcher's previous involvement with, or knowledge of, their specific business environments. They have all developed policies and are currently employing strategies to improve their business outcomes by embarking on corporate improvement change management. To underpin their approaches to project management they were asked to comment on how either Prototypes Type 1 or Type 2 could be tested and potentially incorporated in their ongoing improvement initiatives. The five case studies (referred to in Chapter 4) include:

1. The Chamber of Commerce and Industry in Hambantota (HDCC), Sri Lanka corporate improvement program initiation (2016) updated 2019 – 2020

2. Boral Land and Estate Group (BLEG), corporate improvement program (2002 – 2011); based on a practitioner's presentation to the AIPM by the researcher (2011) and updated 2019-2020

3. The Malaysian Government Department of Works (JKR), Kuala Lumpur corporate improvement program (2007 – 2012), updated 2019 – 2020

4. Boral Asphalt Queensland, Brisbane, corporate improvement program (2002 – 2019); updated 2019-2020

5. The Australian Capital Territory (ACT) Government Directorate of Transport Canberra and City Services (TCCS), corporate improvement program, initial report Canberra (2019-2020); updated 2020.

6. Note: the years indicated after each Case Study (e.g., 2002 – 2019) indicate the years that the researcher has been involved with each organisation.

Of note is the involvement or otherwise of each study's Executive Management, their participation and interest. With Boral Asphalt, the lead manager was the GM and his State Management Team. With Boral Land and Estate Group, it was a member of the Business Management Team. With HDCC, it was the Business Chamber of Commerce Management Team with the full backing of the Board. With JKR, was the JKR Prokom Management Team with the Departmental Director's full support. Furthermore, TCCS has resulted in a cross-functional operations-led team and a community of practice headed by the CIO. Interestingly, the impetus for change does not necessarily require full executive approval, but it does need a champion or champion team to make it work.

The research is aimed at relating the organisations' practices to the theoretical propositions and components of the P3MCIM prototypes. Noticeably, the context of each of these organisations is vastly different and includes: a not-for-profit community and business-oriented organisation in Sri Lanka (HDCC), a commercially driven national property group (BLEG), a federal government department of works in Malaysia (JKR), a commercially driven contracting margin-achieving business (BAQ), and a territorial government, public-sector directorate of transport and community services (TCCS).

The methodology for examining each case study involved:

1. Formally seeking permission to use the organisation as a case study (see Ethics Approval)
2. Contacting and agreeing the organisation's contact person and the involvement of the management team.
3. Sending a questionnaire and structure for a case study report and discussing a potential response, as well as interviewing the contact person for a draft response.
4. Editing a draft response prepared with the management team input and further discussion for clarification.
5. Compiling a final draft of the report; sent to the case study organisation for endorsement.
6. Compiling the final report for the case study.

Each case study is structured as follows:

1. Context, Profile and Need for Intervention. Answering the question: What was observed in the case study, relevant to a P3MCIM prototype?
2. Adoption and execution of P3MCIM prototypes Type 1 or Type 2. As the case studies date back to 2002, this study concentrates on a 2019-2020 update, provided for each. The updates are a result of a separate description provided by the organisation's management team and discussions/interviews with senior managers. This section answers the question: What did the researcher learn from what was observed, relevant to a P3MCIM prototype?
3. **Outcomes and Lessons Learnt** concludes with how the P3MCIM prototype Type 1 or 2 was applied or considered and answers the question: How did each case study contribute to the development of a P3MCIM?

Note: an analysis and summary of assimilation and inferences is included in Chapter 7.

6.3.1 HAMBANTOTA DISTRICT CHAMBER OF COMMERCE (HDCC)

Context, Profile and Need for Interventions

The context of this case study is that of an externally sponsored not-for-profit organisation that serves its diverse membership (<3,000 SMEs) with a small team of paid managers supported by two levels of guidance from an elected, unpaid board and Past Presidents group. This case study was based upon the results of a consultancy conducted by the researcher in 2016. As part of a volunteer team (AVID) deployed for three months, the researcher used the emerging Type 1 version of the prototype P3MCIM and, after the consultancy work, maintained contact with the HDCC management team. In 2019-2020 the researcher undertook an update of progress, as follows.

The comments and discussions from the 2019 update were relevant from both a business management and project/event management point of view. This case study indicates how a Type 1 P3MCIM is employed in a North Asian country. The consultancy was conducted in a predominantly non-English speaking environment even though Sri Lanka (formerly Ceylon) was an English colony. As such, the issue of languages skills did not affect the consultancy or its progress and achievements. There was no impediment to clear and effective communication.

Adoption and Execution of a Type 1 P3MCIM

The P3MCIM Type 1 approach was appropriate for HDCC, indicated by the HDCC Management Team endorsing and applying the components to enhance their business. It was more than apparent that HDCC had no formal project management system. The following selected explanations from the HDCC management team (2019-2020) indicate how the main components of the Type 1 P3MCIM were accepted.

Review of HDCC resulting in an Initiation and Management Plan

The AVID volunteers were fully engaged during the first three weeks of their deployment to review the existing strategies and tools available at the HDCC (P3M Analysis) and develop an Initiative Management Plan. Moreover, during these three critical weeks, they developed tools related to the staff capacity development plan and HDCC's strategic plan for 2020. All these tools were further developed, used, and made positive improvements to the HDCC. The revised and updated strategic plan up to 2020 made a considerable change within

the organisation, and it would directly expedite the mechanism of self-sustainability for the HDCC.

Further, the tools developed (primary P3M System) to enhance the management team's management and communication skills were very proactive. As well as reviewing and strengthening the partnership arrangements with other national and international communities, organisations, NGOs, and diplomats, it has improved and further reinforced collaboration with the partners. Moreover, with continued progressive input (since 2016), the AVID volunteers' initiatives continue to make a positive impact on HDCC. Also, HDCC has realised the significance of using the customised tools and has frequently employed them for each initiative and every project.

Organisational Structure

A significant component of the work and change was recommending a new structure for HDCC that necessitated a considerable re-evaluation as well as agreement for staffing position changes and working arrangements (integration with business processes). Committees and their charters' roles and responsibilities were formulated, developed, documented and implemented. The organisational structure developed by AVID volunteers is still being used (2020) and is extremely helpful to HDCC, according to the respondent. The HDCC had an administrative system in place initially. However, the AVID volunteers were able to shape it to be results-oriented. Importantly, the structure was fully implemented during the HDCC consultancy, resulting in a working model.

Most international donors and funding partners had been reluctant to choose HDCC as a local partner for funding for the projects given its organisational structure and underlying cultures. Most of the tools and materials developed have provided significant broad-based benefits to the HDCC that now attract funding partners. Since their adoption (during 2017-2020), HDCC has not made any further changes to the structure. The management team are still using this new system during its introductions at local and international meetings, summits and commercial/NFP discussions.

HDCC Strategic Plan

An initial examination of the HDCC Strategic Plan preceded all work in the consultancy and considerable discussion with the current board and the ex-Presidents. The strategic plan developed by the AVID volunteers was followed until 2018, with some changes made to focus more on international donors, funding partners and corporate social responsibility (CSR)

projects. In 2019 fundamental changes were undertaken in the following key areas of the plan: youth development and youth skills development, business community development and services to the entrepreneurs, tourism and hospitality sector development, gender and female entrepreneur's development, working with disabled people and encouraging disabled entrepreneurs, and co-existence and reconciliation. Furthermore, HDCC expects to make further amendments and anticipates adding the concept of Environmental Protection/Conservation practices to the Strategic Plan (2020).

Pipeline of Projects

A vital component of the Type 1 and 2 Prototypes is a pipeline of projects. This was a new concept for HDCC, which enabled the management team to select, order and prioritise their activities. In 2020, HDCC has not changed the project pipeline format from that developed by the consultants and, so far, is using the same system since the inception of the project management in 2016. The staff of HDCC has not changed since 2016. As a result, HDCC conscientiously implemented a stable pipeline structure, regularly updating priority projects.

Partnerships

(Not mentioned in the Type 1 Prototype but highly relevant to HDCC and a key factor in Type 2.) A vital part of the HDCC business strategy is to garner supportive organisations as partners and assist with income and services. The consultancy worked on consolidating these arrangements and worked on new donor/cooperative organisations. In 2020, HDCC was working with many local and international partners. Currently, there are thirty national and international partners working closely with HDCC, compared with only a few in 2016. Its critical international partners are Manchester Chamber of Commerce; International Youth Foundation; World University Service of Canada; Confucius Institute, China; Australian Volunteer International Development (AVID); USAID; and the foreign embassies: Australia, India, Canada, UK. Local Partners include Ceylon Chamber of Commerce, National Chamber of Commerce, National Enterprise Development Authority, District Secretariat, Regional Chambers in the Southern Province, Sri Lanka Tourism Development Authority, Ruhuna Tourism Bauer and Vocational Training Institute.

The process of dealing with the local and international partners is undertaken through the Partnership unit of HDCC. In 2019, HDCC created a separate officer under the Manager Operations to collaborate with partners, whereas there was no position to carry out this role in 2016.

Revenue Assessments (Business Financial Reviews)

Part of the examination of business processes (in Type 1), revenue assessments of both operations and projects were not practised before 2016 so, separation of these functions was new to HDCC. Revenue assessments are now conducted at every month's end by submitting an analysed report to the financial analysing committee of the HDCC, the 'A Committee.' The A Committee is accountable to the Board of Directors (BOD) to present all financial progress for operations and projects. Further, the BOD makes recommendations after considering the financial progress report and assesses the financial gap to minimise loss and prioritise new operations and projects. In 2020 all projects were reconciled at closure to assess benefits; reporting benefits as executive reports (end of Type 1).

Events Management

Even though HDCC had conducted many events, the rigour of detailed planning and monitoring/controlling instituted by the consultancy were new. Thorough event planning (introduced by the Type 1 prototype) is one of the noteworthy results achieved by the HDCC with the AVID volunteers' support. Before 2016, the HDCC had never had a proper event plan with the exception of event calendar scheduling. The AVID volunteers emphasised the significance of having competency-based, results-oriented event plans to be used organisation-wide and initiated a standards-based event plan customised for HDCC. Since then (2019-2020), all the event activity plans have been developed accordingly, with 100% of events successfully planned, implemented, and concluded with formal reporting.

Professional Development for HDCC Staff

Preceding professional development of learning interventions, the consultancy developed P3M competency-based job descriptions for key managers. The AVID volunteers conducted professional development workshops and one-to-one and team coaching for HDCC staff throughout the consultancy. Since then (2020), professional development is organised for staff on an annual basis. Workshops are organised regularly with the sponsorship of the local NGOs as well as foreign organisations. Some workshops are job-oriented and, on other occasions, are for general development and awareness. An essential outcome of successive volunteers (2015-2019) joining HDCC has been staff development for the local staff across various aspects of the organisation. Especially relevant has been personal coaching in the

communications skills needed for project/event proposals as well as developing skills for implementation.

In terms of internal coaching, the team focuses on making each project a success (for planning and benefits) and clearly explaining and adhering to all the critical steps in the project/event management cycle (provided and agreed on in 2016). The interventions made by the volunteers have been highly effective in making recently conducted projects as well as ongoing projects more successful and profitable.

Outcome and Lessons Learnt

The HDCC Management Team variously commented on most components of the Type 1 prototype but did not comment directly on: Maturity Analysis, Executive P3M Coaching or a Project Health Check System. However, they did report on components of their business that were vital for them and their continuity: revenue assessments, project planning for the Youth Development Plan (nationally organised), events management, tours and tourism, and international partner relationships. In several ways HDCC endorsed the Type 1 components but demonstrated that the model is used to initiate and report on organisational issues that provide greatest value to their business.

The critical lesson learnt in this consultancy case study was that of clear and sustained communications. When the volunteer team first arrived at the location, there was no clear objective for the project. It took at least the first three weeks to decide on a set of objectives and how they might be delivered.

The second lesson centred on using the set of objectives as guidelines and deciding what could and could not be delivered. The project team maintained a weekly checklist of key activities to meet the goals. Agreement was sought with the executive committee weekly. This schedule kept the team targeted to achieve outcomes that were agreed to and would benefit HDCC.

The third lesson involved change management. Effecting change was perhaps the most challenging area to achieve breakthroughs, especially where language and translation were critical. It was expected that HDCC staff members would undertake project management-related activities, however these could not be achieved without a prominent level of coaching and mentoring, with one-on-one sessions being the norm. If a task was agreed to and delegated to a staff member, numerous follow-up sessions were always needed. Nevertheless, satisfactory results were achieved.

The fourth lesson involved commitment. Even though project management concepts and formality were new to most staff members, their willingness to accept new processes was commendable. Their ability to plan and conduct live events (Safari and Expo with the Type 1 formalities) was not only impressive but achieved sound business results for HDCC.

The final lesson was quite independent of the 2016 team of volunteers. HDCC has continued to engender and integrate project and program management into their formal operational process. They have included significant updates of procedures and processes (operationally and through P3M) and have continued to organise valuable partner relationships.

6.3.2 BORAL LAND AND ESTATE GROUP (BLEG)

Context, Profile and Need for Intervention

BLEG is an example of how project management in a commercial business needs to be well defined and organised to increase maturity levels. Having worked on improvement for over two decades, the organisation is well placed to comment on the implementation of an integrated enterprise-wide approach to program and project management. The advances in BLEG were made possible with the leadership of its executive management team and the dedication and vision of its Business/Divisional Managers and Project Managers.

Adoption and Execution of Type 2 P3MCIM

BLEG fully incorporated its version of the P3MCIM Type 2 into its business and program/project context. As it is working at a Level 4 maturity status, its key objective is now continuous improvement. In May 2020, the National Director provided the following update (by interviews) using the Type 2 P3MCIM headings (mainly, but not completely) as a guide. The manager responded to each of the headings below (in writing), and discussions (by formal interviews) expanded on those responses.

Alignment of P3M Practice and Capability with BLEG Strategic Plan for the Business

The business is managed as a national portfolio of projects for 2016-2021 that meets operational needs, asset management, optimised returns, sustainability and market value. They are categorised and listed as a pipeline of priority projects. Substantial benefits are optimised using this strategy. As a 30-person national business, it is managed regionally. Governance audits are carried out in each region to ensure compliance and continuous improvement.

FY 19/20 Business Plan: (Australian and Regional)

The business plan includes detailed analysis, project planning, and operational support that is strategic and tactical. Safety, People, Market/Customers, Financial targets, Continuous improvement actions are included according to Boral's requirements. Activities are tracked, measured and assigned to individuals in the BLEG team with benefits measured.

Benefits Realisation Management linked to Strategic and Business Plans

Benefits Realisation is termed 'portfolio optimisation'. What used to be a 'cradle to grave' approach is now a system that better reflects an integrated business approach using the term 'cradle to cradle' (a complete property management life cycle). Clear accountability and clarity of process, governance risk, and delivery of targets are included.

Centre of Capability and Excellence in Boral for P3M integration with Business Procedures (EPMO and PMOs)

BLEG has a mandated National PMO (EPMO) set up to govern all major Projects > $50M in revenue. The National Manager has a dashboard report to monitor progress and results which are reviewed monthly. PMO disciplines are applied to achieve the BLEG Business Plan. BLEG Projects match Quarry end-use plans encompassing inception management, management plan, execution and delivery processes and sales. BLEG now has a mature level systems approach to its projects but is working on continuous improvement.

Change Management Strategy

The survey respondent described the change management strategy as "rightsizing". This includes a systems-based approach that is "elective" allowing the management team to choose those projects with the best business outcome. He pointed out that a sound "project management discipline fully supports this approach".

Competency-Based Job Descriptions: Needs Analysis for Key P3M Personnel and Support Staff

All key personnel have individual objectives. For example, a rehabilitation manager has strict KPIs, especially against the allocated budget. All positions are performance managed, especially for 'zero harm', and KPIs are discussed with managers on a two-monthly basis using a 1 - 5 scale.

Professional Development Pathways Structure and Plans for P3M: Delivery Short and Long Term

BLEG staff have a personal development plan for professional development. It includes career opportunities, job opportunities, goals with Boral, roadblocks management, assistance from other Boral managers, opportunities for positions across 13 countries, predictable timeframes, inducements/motivations, 70/20/10 analysis for personal development and, most importantly, succession planning. Senior managers' programs are also available at the tertiary level.

Pathways delivery: Live-Project Coaching, and Mentoring

A Zero/One/Ten leadership program is conducted for all frontline leaders. This program also involves mentors being assigned to a maximum of five mentees for self-development. BLEG mentoring is guided by the Self-Directed Mentoring Playbook, developed to support employees in mentoring relationships, whether they are a mentee, a mentor, or a Mentoring Circle participant.

Operational Reviews: Executives, Senior Managers, Program and Project Managers, Support Staff

Operational reviews are conducted at monthly forums with the senior executive. Regional meetings are conducted weekly and monitored by the National Manager, where projects and support are reviewed under the project management plan for each project.

Coaching/Mentoring Implementation of Assessments and Reports

BLEG adopts a more informal personal approach to performance management, including incentives such as career opportunities/professional development, flexible working arrangements, a broadening of roles and financial incentives for performance.

Pathways - Formal Qualifications and Professional Certifications

BLEG has a defined structure that is a matrix of roles matched with qualifications and certifications needed now and for the future. It includes Certificate IV, Diploma in Project Management, and the Advanced Diploma. Development of capabilities also consists of a wide range of listed engineering qualifications, and tertiary study is supported individually.

Cultural Competence Strategy and Sustainability: Workshops and Assessment

Sustainability is achieved using the BLEG Business Model. The survey respondent explained that Boral Ltd has been undertaking a transformational change program in recent years resulting in noticeable changes particularly over the last two to the years. For example, diversity and inclusion workshops have been conducted and coaching is available online. Training about Cultural competence and multicultural environment training and policies have been prominent. The transformational change program is now well-established and is reported to the Boral Council at the national level.

Program and Project Health Checks System: Assessments and Reporting

Regional programs are checked against the national portfolio and business outcomes. The survey respondent mentioned that PHCs against business and project management's broad functions are conducted through annual audits. A traffic light dashboard system highlights required actions.

Key Performance Indicators (KPIs): continued for business and contracts

Seven business and 10 contracting KPIs are used as a "waterfall effect" for relevant managers across the portfolio and are monitored as above. For contracting, they are built into all contracts and are performance-based. The KPIs indicate a level of organisational maturity in P3M and business.

Benefits Management/Return on Investment Reports

Reports are usually completed at a regional and Australian business level for major projects, part of the 'cradle to cradle' model that includes internal and external evaluations and reporting.

Annual Report to Boral CEO Team.

Rigorous reporting is conducted monthly by the CEO and team. Reporting for Boral Corporate is completed on a quarterly and annual basis.

Other information that the survey respondent mentioned relevant to the Boral transformation initiative included his belief that this initiative would take the "corporate business into the future". He said that because the business was "constantly evolving, and so quickly" unless managers were aware of, and systematically managed change, they would "become obsolete, very quickly". He maintained that "we must be fluid" and that the BLEG business model allowed for that adaptability. Not mentioned previously, he concluded that having the same people over a long period as managers has been highly beneficial.

Outcome and Lessons Learnt

The BLEG Management Team variously commented on most components of the Type 2 prototype. Referring to the "transformation initiative" they reported on components of their business that were vital for them and their continuity: benefits management, professional development linked to KPIs, sustainability using the Boral Business model, KPIs for business and project management and performance management, the ability to react to a fast-changing business environment, and the benefits of having continuity in personnel. In several ways BLEG endorsed the Type 2 components and demonstrated that the model is used to initiate and report on organisational issues that provide greatest value to their business.

The lessons learnt from this case study was that all levels of BLEG management have been involved in improved business and project management practices. The Boral Maturity Model (enterprise-wide) is an "open and flexible" tool that can be modified and customised according to Boral's business and organisational needs. Continued commitment to the disciplines involved in raising and maintaining continuous improvement in methodologies, procedures and toolsets is practised. Quality procedures that are "owned" by Boral managers are regularly reviewed to suit Boral's unique requirements.

The PMBOK and P3M National Standards (Competency Units) have been customised to meet Boral's business and project environments. As a result, Boral staff upgrade their skills regularly and are rewarded with industry recognition, certification and awards. The key to professional development is that standards are integrated into job descriptions, and development programs are forecast for managers at all levels. Ongoing PHCs and reviews of the business and project levels of maturity concentrating on the continual improvement of procedures, information systems and work techniques are practised. Boral constantly "pushes" its project management practices forward and actively seek continuous improvement through a customised business-related KPI Matrix that is assessed annually.

Managed by its senior management, BLEG accepted a systems approach to project management improvement (since 2002) and has persevered with contextualising and improving that approach to their business. The early Corporate Improvement Program (CIP) that was employed for BLEG improvement laid a powerful platform for later development. Once again, this was supported by senior management.

This study exemplifies that long term senior management supports a sustained culture for professional project management. The team innovates and uses the latest methods available. As a result, they adhere to national standards for P3M, have a centralised EPMO management system, pursue benefits management, embrace change management and use KPIs that measure at business, program/project and individual manager levels.

6.3.3 MALAYSIAN DEPARTMENT OF WORKS (JKR)

Context, Profile and Need for Intervention

The context of this case study is that of a key public service department of the Malaysian Government. The organisation serves federal, state and local works projects that vary from city building to hospitals to roadworks. Its staff of over 30,000 is managed hierarchically and its diversity in projects was a pivotal reason to embed a uniform approach to project management, with a prominent level of support at departmental and ministerial levels.

The Complex Project Management Division (PROKOM) implemented a Project Managed Change Program (PMCP) in JKR to manage infrastructure projects and programs for the 9th Malaysia Plan to 2020 and beyond. The PROKOM program was outlined through a formal Proposal, Schedule of Works, Resource Allocation, and Terms of Reference. It presented the initial Program Management Plan to establish the work program and the PMCP. The initial change program largely followed the Type 1 P3MCIM.

This case study was conducted in 2006-2008 by an Australian company Best Practice Project Management (BPPM) Pty Ltd as a joint consultancy with Snowy Mountains Engineering Corporation (SMEC) Malaysia Sdn Bhd. Since then, the researcher has maintained contact with JKR personnel and SMEC Malaysia, and an update on progress was conducted in 2019-2020 using the Type 2 P3MCIM.

Adoption and Execution of Type 2 P3MCIM

In recent years, the project and asset management division has been renamed the Integrated Asset Planning Division (IAPD), covering total asset management in the public

sector, i.e., from asset creation to asset disposal. CPMD, part of IAPD, initiates and manages project management best practices in program and project management. Project Portfolio Offices, at the Central HQ level and States level, manage project implementation and performance monitoring and reporting. The 2019-2020 update with JKR established the extent to which Type 2 of the model had been adopted (as explained below).

One of the senior managers from 2008 has seen the initiative develop and flourish into a comprehensive system for P3M. He and his team were contacted during 2019 and 2020 to provide this summary of JKR's progress. This section offers a brief explanation of developmental activities (using the components of a Type 2 P3MCIM as a guide) and commentary on their status.

Strategic Planning and Program Management

Integration of the project and asset management divisions is now known as the Integrated Asset Planning Division (IAPD) that covers the total asset management in the public sector, i.e., asset creation to asset disposal and investigates all practices in project management (against international standards). The introduction of Project Portfolio Offices at the Central HQ and the States levels manage project implementation and performance monitoring and reporting. IAPD follow overall Malaysian government policies and strategic orientation for P3M objectives and outcomes.

Project Classification System (ACAT): Pipeline

The ACAT Framework has been developed further and provides for five levels of project classification with two primary outcomes. Projects classified at ACAT 1 and 2 are considered "complex", requiring management to use the techniques prescribed by the College of Complex Project Management (and more recently, 2018-2019, the development of competency standards by GAPPS). Projects classified as ACAT 3 – 5 and less are managed as 'traditional' projects, applying the revised PMMM methodology developed by the PM Systems Team. This filter assists program managers in developing appropriate project implementation strategies and increases the confidence level of project managers in handling projects. Contingent to the program's success is the requirement to secure an elevated level of acceptance by Directors (Portfolio Managers), Head of Project Team (HOPT) and Head of Design Team (HODT). ACAT has been embedded in the JKR workflow and it is thus mandatory for all Heads of Delivery (HODT) and Heads of Procurement (HOPT) to implement. However, the

classification of projects in JKR is still at the initial stage for matching resources, even though JKR has formed special project teams for complex projects.

P3M Framework, Methodology and PMIS

The Project Management Methodology Matrix (PMMM) development, Work Instructions and Procedures were designed and implemented. This step integrated the various tools in logical sequence throughout the project lifecycle, thus facilitating the management and control of projects. Progress and development of the PMMM have been ongoing.

The concept of a Project Management Information System (PMIS) was also introduced. The PMIS is an umbrella under which all PM tools and other means of facilitating projects reside and provides a vehicle for project managers to electronically access (through hyperlinks) all documentation related to project management. The intention was to incorporate the ACAT classification system, PMMM, and its specific project sub-sets to enable PMs to drill to the requirements determined by the ACAT classification. All tools associated with PMMM, Project Manager's Facilitation Manuals, Procedures, Guidelines, Risk Management, Gateway Reviews, Green Teams, PHC, and Partnering are incorporated into an integrated system.

The PMIS has been widely used to date (2020), and most of the initiatives, such as Gateway Reviews and Project Risk Management, are incorporated into the system. Facilitating the adoption of project management best practices by high-level profile project teams is conducted on selected projects to ensure integrity and competency. While partnering has ceased to be an independent initiative (introduced in the first change initiative), importantly the principle has been embedded in value engineering analysis and application for major projects.

Competency-Based Assessment System (CBAS) for P3M

The CBAS (customised for JKR against Australian P3M Standards) tracks the competency attainment for P3M managers from selection to certification and includes assessors' training and certification. This strategy provides sustainability of both project management expertise and its assessment.

Since its inception in 2006, the CBAS program has been actively implemented. It has been widened to certify JKR professionals and other related entities outside JKR, such as other government agencies and private entities. CBAS certification has also gained recognition by the Construction Industry Development Board (CIDB). KPIs have been introduced for this program to show the importance of PM competency development for all personnel. The program is now conducted twice a year with nearly 60 candidates from across JKR. Standards

for the CBAS system were to be reviewed and updated against AIPM and international standards in 2020.

Risk Management

In responding to the need to ensure the inclusion of Risk Management as part of the development of PM competencies, it was agreed that introducing a Subject Specialist in risk management would achieve the best outcome. A coordinated SMEC - JKR team produced Risk Management Facilitation Guidelines and the processes for its introduction to JKR through a series of demonstration workshops. In 2020 risk management processes were adopted and mandated through the IMS (Integrated Management System SPB JKR). All projects must carry out risk analysis and management as directed by the Malaysian Government and be monitored by senior management.

Customer Service Improvement Plan for Cultural Change

The Customer Service Improvement Plan (CISP) recognises customer needs, constantly evaluating performance and, as a result of that knowledge, delivers continuing benefits to internal and external customers. CSIP is a crucial component in cultural change within JKR. The CSIP Plan includes a strategy, structure, reporting format and budget. A 10-year CSIP horizon is projected along with continuing reviews of outcomes. The way the client ministries undertake the planning and executing of their projects has made it even more challenging for JKR to understand their real (customer) needs and expectations. Under recent developments, the Malaysian Government has instructed that all physical projects be undertaken by JKR, ensuring that the projects are being implemented according to accepted best practices. In considering JKR capacities and capabilities, the PM methodology and PMP is of paramount importance in delivering projects in JKR.

The Change Management Role – Organisational Development (OD)

The role of the PROKOM in the revised organisation has been a catalyst for project management and change implementation thereby moving towards excellence of infrastructure development within JKR. The group's planned structure shows a reporting relationship from the PROKOM Head directly to the Deputy Director-General. Some of the significant issues for PROKOM relate to: its relationship to, and influence upon, other parts of the organisation, the roles of each branch of PROKOM, the expectations of the customers of PROKOM, the role of the PROKOM Branch of Change Management and specifically, its role in relation to

performance management and performance auditing, customer management, business processes and overall organisation development.

The plan for PROKOM, included establishing a Change Management Branch, comprising a Customer Management Development Unit (CMDU), Business Process Management Unit (BPMU) and Performance Management Unit (PMU); all of which are linked. The consultancy advised that these units would require a proactive rather than a passive approach to OD and people development as well as the development of teams to implement the programs of reform.

In 2019, the respondent indicated that OD included the assimilation of project and asset management under the Integrated Asset Planning Division covering the Total Asset Management life cycle. A Senior Director heads the Division. The Performance Management Unit is an essential entity in this new set-up capitalising on ACAT and Gateway for project entry into JKR and project dissemination to the Department's various business branches. An enterprise Program Management Office was established to monitor and report project performance back to the top management via the PMU.

Customer Management Development Unit

The original consultancy suggested that the issue of customer management development would go further than just customer satisfaction and, in addition, concentrate on designing processes to identify customer needs and proactive programs. This approach emphasised the importance of the JKR customers and stakeholders, especially issues such as JKR customer loyalty, satisfaction, and the importance of customer care and support. In recent years, this role has been allocated to the Corporate and Policy Branch (CDPK), with an increased emphasis on stakeholder management (Client Ministries and Central Agencies).

Performance Management Development Unit

In performance management, there was recognition of the limitations of using only financial measures to assess organisational effectiveness. The concept pursued at JKR included strategies and visions for the future and performance measures using a balanced scorecard approach. A special unit was set up within IAPD (PROKOM) to investigate project delivery performance and KPIs, along with the five-year JKR Strategic Framework. The main impact of this Unit's work is that the results achieved through all the five strategic themes are now measured and reported regularly.

Project Health Check (PHC) System

In recent years, the PHC System, including registration as a Project Doctor, now assesses project performance. Deployment of green and red teams still needs commitment from top management. The respondent noted that this issue has yet to be addressed due to a lack of competent and experienced resources. However, the PHC System is now well accepted and widely used to assess projects as well as the performance of teams. PHC practitioners are now implementing the initiative, and recommendations for improvement have been accepted (confirmed by questionnaires and rating).

P3M Training/Professional Development

JKR has four levels (Entry Level and Levels 4-6 PM Competency Standards) of P3M project management training and includes a forecast of projected PM Certification Outcomes. In recent years, the PM training program is conducted at either the training centre @ CREaTE or PROKOM for targeted groups, especially for project teams and professionals who are Competency-Based Assessment System (CBAS) certification candidates. The number of personnel attending these programs increases every year, with the target group attaining Levels 3 and 4 of the PM Essentials.

Soft Skills for Project Managers

Soft skills development in JKR has been conducted using both public and private sector providers. The training module, however, is assessed by CREaTE and PROKOM prior to delivery to ensure that it suits the needs of the project managers. Most PROKOM staff have completed a questionnaire on the Facilitation Skills Building course to assess its usefulness in the project management process and check on additional soft skills needs. The respondent reported that questionnaire results have been highly encouraging, with all participants in the Facilitation Skills Building workshops reporting positively and identifying competencies and application of the skills learned.

Outcomes and Lessons Learnt

The JKR management team variously commented on most components of the Type 2 prototype but did not comment directly on: Maturity Analysis, Executive P3M Coaching and Cultural Competence. However, they did report on components of their business that were vital for them and their continuity: a Project Classification System, a Project Management Information System, a Competency Based Assessment System for P3M, Risk Management as

part of an Integrated Management System, a Customer Service Implementation Plan, a Matrix Management Model that includes a Program Management Office, Change Management as Organisational Development, Health Checks and a Project Doctor system, and structured P3M Training and Professional Development System. In several ways JKR endorsed the Type 2 components, but also exemplified that the model is used to initiate and report on organisational issues that provide greatest value to their business.

This study exemplifies that long-term senior management commitment enables a sustained culture for professional P3M management. The management team investigates and uses the latest methods for P3M (researched worldwide). They adhere to JKR's customised standards for P3M and employ a centralised national Program Management Office that links with a robust Health Check system. They track benefits management and manage change assets in a whole of life cycle. They also employ KPIs that measure at business, program/project and individual manager levels, and are considered standard management practice. JKR has employed most components of the P3MCIM Type 2 model as they suit its context and culture.

6.3.4 BORAL ASPHALT QUEENSLAND (BAQ)

Context, Profile and Need for Intervention

Since 2011, Boral Asphalt QLD has continued to use program and project management methodology principles to manage all aspects of the business. The business adopted the customised Boral contracting 'matrix' approach to measure against business KPI's as well as project-specific (contracting) KPI's. This critical focus has strengthened the Southeast Queensland project delivery team and has also developed regional businesses to rise to a new level of maturity. As a result, significant and sustainable returns have been delivered with a clearer and concise strategy across the business's delivery streams.

Adoption and Execution of a Type 2 P3MCIM Prototype

The researcher recorded these results in interviews and a written report delivered by the General Manager (GM) BAQ in 2019 and 2020. It uses the headings of the Type 2 P3MCIM prototype as a guide for how the company is currently operating. The GM responded to each of the headings below, and the interview expanded on these responses.

Alignment of P3M Practice and Capability with BAQ Strategic Plan for the Business

The business is managed as a portfolio of projects by segment: major contracts, Tier 2 contractors, councils, and private and government authorities. The BAQ Business Improvement

Plan incorporates KPI element actions and measures over five years, with outcomes assessed annually against the KPIs. The plan constitutes the master plan (updated quarterly) for the business and is presented in a one-page summary to facilitate accessibility by the managers. Governance audits are conducted in each region using surveys to ensure compliance and continuous improvement. These are the Commercial Manager's responsibilities across twelve depots in the State and are linked to surveys conducted by the managers.

FY 19/20 Business Plan (Australian and Regional)

Safety, People, Market/Customers, Financial targets, Continuous improvement actions are now included in the Business Plans. Activities are tracked, measured and assigned to individual managers. Contracting management is a focus for all regions supported by a consistent and continuous improvement program.

Centre of Capability and Excellence in Boral for P3M: Integration with Business Procedures (EPMO and PMOs)

Boral Ltd now has a national enterprise wide PMO (EPMO) set up to govern all major projects > $50M in revenue. The National Manager, commercial managers and operations have a one-page dashboard to monitor progress and results. They are reviewed monthly. A regional PMO in BAQ established for major projects > $15M similarly monitors progress on major projects. BAQ has a Standard Operating Procedure (SOP) for contract management and embedded tender review and approval process. A project pipeline, managed by the EPMO, provides five-year forecasts that are updated bi-monthly. BAQ has stated that the EPMO delivers a valuable service to both BAQ and regional project teams.

Benefits Realisation Management Linked to Strategic and Business Plans

Improved earnings before income tax (EBIT) / Sales outcomes are reported monthly and quarterly. Improved return on forecast expenditure (ROFE) across individual business units and the integrated QLD business (with other Boral businesses) are monitored and tracked. Clear accountability and clarity of process, governance, risk and target delivery include calculating margin range and net value. Client reviews enable the maximising of opportunity (for both the asphalt and quarry businesses).

Change Management Strategy

Five key initiatives addressing the issue of change management are assigned to the management team (one per person). A continuous improvement initiative captures, reviews and

confirms the implementation of an exemplary process. Clear, concise and regular communication to all employees is achieved through relevant channels.

Competency-Based Job Descriptions: Needs Analysis for Key P3M Personnel and Support Staff

All key staff (regional managers, project managers, project engineers and supervisors) have individual objectives reviewed on a six-monthly basis. PHCs, reviews and monthly meetings assess competency outcomes using the PMBoK functions as a guide, especially for major projects.

Professional Development Pathways Structure and Plans for P3M: Delivery Short and Long Term

Supervisors and Contract Managers' programs are limited to a 'Felt Leadership' program (on-site) with 80% coaching and mentoring. Senior Managers programs are also available at the tertiary level. The HR management team is also involved in assisting in identifying learning pathways for staff.

Pathways delivery: Live-project Workshops, Coaching and Mentoring

Boral provides a Zero/One/Ten leadership program for all frontline leaders. This program also involves mentors working with a maximum of five mentees to address self-development and develop coaching experience.

Formal Qualifications and Professional Certifications

While professional development programs (including qualifications) are supported for individual staff members, many development opportunities exist internally, including career mapping and management training opportunities.

P3M Briefings: Executives, Senior Managers, Program and Project Managers, Support Staff

Operational reviews are conducted monthly at these levels. Key projects are reviewed using a monthly report format that also addresses the competency standards functions.

Cultural Competence and Sustainability: Workshops and Assessment

These are conducted by Boral Corporate. Three detailed employee surveys and analysis programs have been conducted over six years. They are benchmarked against common industry

practice and the broader business community. Improvement categories have focussed on improving performance.

Program and Project Health Checks System: Assessments and Reporting

Order book management (prospective work program) is updated and reviewed monthly, focusing on utilisation, safety, client interface, revenue and cost recognition. A WD2 and WD10 review is conducted on all projects in each region at a financial result level. The GM pointed out that health checks against the broad functions of business and project management need to be undertaken more regularly than is currently the case.

KPIs: Continued for Business and Contracts

KPIs are included in the BAQ Business Improvement Plan, and they are also a key component for assessing major projects and achieving the objectives set out by managers. BAQ issues a monthly dashboard to all employees that includes relevant metrics to communicate "how we are going" against expected business results.

Coaching, Implementation of Performance Assessments and Reports

A personal approach is adopted, including incentives covering career opportunities, flexible working arrangements, broadening roles and financial incentives for performance. This unique approach includes asking the question, "How are you going?" and "What do you need?" to support employment satisfaction. The GM mentioned that this approach consolidates the workforce and encourages better retention.

Benefits Management/Return on Investment Reports

These reports are completed at a regional and Australian business level for capital expenditure (CAPEX) and major projects.

Annual Report to Boral CEO Team

The report is completed annually in a short form strategy document that reviews the state and regional performance. BAQ generates a 'Year in Review' document summarising outcomes against its agreed metrics. This report is communicated broadly across the management group.

Other Management Functions and Activities (Relevant to Continuous Improvement)

Other initiatives that the GM has developed for both continuous improvement and to raise the profile of the business have included: being adamant about customer feedback and acting on rational suggestions for improvement, being active as a Principal Contractor to state Road Authorities, being rated as the highest pre-qualified business in Queensland (in the road building and maintenance sector), maintaining accreditation with the Office of the Federal Safety Commissioner, being ISO 9001, AS4801 and ISO 14001 environmentally qualified, establishing a very firm team approach, getting the right people in the right place for the long game and concentrating on who manages them and how. According to the GM, this approach has been embedded over the last three years. He points out that this approach engenders commitment, and it relies on the fact that, "If they (staff) do not believe it … They will not do it!"

Outcome and Lessons Learnt

The BAQ management team (through its GM) commented quite closely on the components of the Type 2 prototype. Additionally, the GM covered topics that are relevant to their business that are considered vital for them and their continuity: continuous improvement through customer feedback, being active as a Principal Contractor and the rating as the highest-qualified, maintaining safety accreditation, being ISO qualified, keeping a solid team approach to the business, and maintaining the right people in his business through succession planning. In several ways, BAQ endorsed the Type 2 components, but also exemplified that reporting against a model is used to initiate and report on organisational issues that provide greatest value to their business.

BAQ has fully incorporated its version of the P3MCIM Type 2 into its business and program/project context and uses it for all phases of its contracting business. As it is working at a Level 4 Maturity status, its key objective now is continuous improvement.

Like the BLEG case study, BAQ has included all levels of management in improved business and project management practices by way of the KPI Matrix approach which is assessed annually. In conjunction, the Boral Maturity Model (adopted organisation-wide) is viewed as an "open and flexible" tool that can be modified and customised (ongoing) in line with Boral's business and organisational needs. Continued commitment to the disciplines involved in raising and maintaining continuous improvement in methodologies, procedures and toolsets is practised. Quality procedures are "owned" by Boral managers and are regularly reviewed to suit Boral's unique requirements.

The PMBOK and PM National Standards functions (competency standards) have been customised to meet Boral's business and project environments. They allow the opportunity for Boral staff to upgrade their skills on an as-required basis and be rewarded with industry recognition, certification and awards.

BAQ was the first Boral company to adopt a project (contracting) health check system that enabled internal managers to formally review progress, simultaneously using the system for coaching for improved performance. The approach stresses results rather than conformance to procedures. BAQ constantly "pushes" its contracting (project) management practices forward and actively seeks continuous improvement through its customised business-related KPI Matrix.

This case study exemplifies how the components of the Type 2 P3MCIM prototype are relevant to this hard-commercial business environment. The case study also underscores the importance of a strong leadership team in making each component work and assuring quality delivery. The importance of a long-term member driving the initiative is not to be underestimated.

6.3.5 ACT DIRECTORATE OF TRANSPORT AND COMMUNITY CITY SERVICES (TCCS)

Context, Profile and Need for Intervention

This case study's context is an Australian Territorial Government Directorate that manages programs of projects in a public sector setting, collaborating with external commercial contractors to deliver services. TCCS provides its expertise in project management to other Directorates and is a leading entity (for this purpose) in the ACT Government.

Adoption and Execution of Type 2 P3MCIM

Prior to 2019, the suggested P3MCIM Type 2 was not formally applied in TCCS. Instead, the components were developed on an as-needed basis after the initial failure of a project management system was trialled by the CIO eight years earlier. The researcher's investigation was to determine how the P3MCIM Type 2 components were being applied (in 2019-2020) and determine those that may be used or strengthened in the future. The respondent addressed each heading (components of the Type 2 P3MCIM prototype) below and provided an interview report (summarised below) expanding on those responses.

Alignment of P3M Practice and Capability with the Strategic Plan for the Business

TCCS reported that it is critical to ensure that while creating a portfolio of programs and projects, regardless of the type of project, they must be linked to the Strategic Plan and whole of Government strategies such as IT/Digital or Active Travel. The projects should deliver on the organisation's goals and objectives or the citizens' expectations in the public sector. Often the end-user of the programs or projects is not clear and is referred to as the Government. However, project success relies on a clear understanding of who the end-user will be. In most cases within Government, it will be either or both the citizen and the staff delivering the service or supporting the deliverable.

TCCS FY 20/21 Business Plan

The Business Plan is a critical document to the organisation. One of the vital links is at the lower level of the organisation. Its strength is in its relevance to the strategic plan and programs, projects and initiatives. This Plan identifies delivery outcomes in the next 12 months that align with the strategy and how it will deliver these outcomes and services in terms of resourcing. The Plan goes into more detail about who and how these initiatives will be achieved and drives its entire IT/Digital budget bid process. Actions are tracked, measured and assigned to individuals by taking the Business Plan and the strategy and developing an Operational Plan which breaks down the steps to achieve the outcomes of those two key documents. This plan also contains the KPIs and a schedule for each leading activity to achieve the results required.

Centre of Capability and Excellence in TCCS for P3M: Integration with Business Procedures

TCCS has an enterprise wide PMO (EPMO) set up for governance of all projects. The core functions of the PMO are the development and maintenance of the PM framework, templates, reporting tools, PM support and training and skill development. The PMO has oversight and supports the capital Infrastructure projects, however, it also has total management over the IT/Digital projects. The PMO, though providing a governance role, is more like a supportive role.

Benefits Realisation Management: Linked to Strategic and Business Plans

There is a natural process of projects delivering against their project plan and sometimes the business case. This is another role for the PMO. Measuring benefits ensures that the project's outcomes have met the business case, which is the rationale for the funding. Still, a review should look at the services the project has delivered, not just those expected through the project

plan or business case. What were the other primary benefits, and what were the secondary benefits? Secondary benefits are not expected or predicted but have resulted as an outcome of the project. This accountability is not well done in the current processes, and this relates more to business maturity and the techniques available to identify these benefits.

Change Management Strategy

This function is a particularly challenging subject and one that TCCS does not manage well, according to the CIO. In the past, change management has been part of the project manager's role, however, as the projects become more complex, this becomes a vital role, not just a "nice to have". Change is one of the most challenging tasks to achieve, especially with a large project that will affect many people. It is just a human reaction that change is always wrong. The key is to ensure that change management, like product ownership, is identified initially and that TCCS incorporates a sound process for undertaking change management.

TCCS has adopted a methodology (ADKAR) to follow, but it cannot resource the position and, like most projects, it was not included in the capital funding. TCCS's extensive IT system demonstrates that even the best project will fail without a sound change management approach. Management is working towards a full-time position supporting this function. A position like an implementation manager that takes on the change manager's role.

A continuous improvement initiative captures, reviews and confirms the implementation of an exemplary process. Also, clear, concise and regular communication to all employees through all channels is critical to successfully delivering a project. To achieve this, TCCS ensures a communications person is part of the board or steering committee from the beginning of the project to understand the program or project and look at the best way to promote its implementation. This step is especially critical if it is to be a citizen-facing system or product.

Competency-Based Job Descriptions: Needs Analysis for Key P3M Personnel and Support Staff

All key staff have individual objectives that are reviewed on a six-monthly basis (project managers, project engineers and supervisors). The objectives include an additional five-year plan to gauge the aspirations of staff and to support their training requirements and skill development.

Job descriptions are based on a non-category type project manager or project officer. This approach means that if the Directorate is advertising a roads project, the requirements should not be set as a project manager with roads experience. The key is to get the best and most successful project manager possible for the budget and use technical teams to provide technical advice and expertise. The function of the PM is to deliver the project; managing the standard elements of project management. Road engineering is not one of these functions. TCCS job descriptions refer to the AIPM certification levels depending on a project's complexity.

Professional Development Pathways Structure and Plans for P3M: Delivery Short and Long Term

Professional Development comprises several processes including coaching, mentoring, job training, shadowing senior PMs, moving people from different areas and formal training. The key is to ensure that training is suitable and will achieve the team members' desired outcomes. It is not just P3M type training that is needed. As project managers climb the steps to promotion, they will usually have less to do with delivery and more overall management of the delivery area. They will need to grow their leadership and senior management skills and other vital areas like HR and Governance.

HR management is intimately involved in developing pathways. It is a core role for all senior management to make sure their team members have a clear path and, if they do not, assist them in identifying one. Management is always proud when a well-trained and highly successful person lands a high-level job. It is hard to lose people, but their ability to move up the ladder reflects a well-managed system and good succession planning.

PM Community of Practice

The Directorate has also established a Project Management Community of Practice designed to provide well-informed speakers on significant topics and experiences and get PMs together to talk about their individual projects' challenges. A vital element of this is also to build their network so they know others who they can reach out to and provide support and guidance.

P3M Briefings: Executives, Senior Managers, Program and Project Managers and Support Staff

The CIO provides a walk-through presentation to the Executive Board every six months using dashboard reporting. Except for the Top 10 projects (which they select), it centres on the

project's achievements and the inherent risks and issues. The fundamental rule for the briefing is to provide concise information with no surprises. Key projects are reviewed using monthly reports and dashboards covering the PM standard elements and a peer review method.

Cultural Competence and Sustainability: Workshops and Assessment

Conducted by Corporate, there have been three detailed employee surveys and analysis programs conducted over six years. They are benchmarked against common industry practice and the broader business community. Improvement categories have focused on improving culture and performance. These go hand in hand as the project management community cannot remain stagnant. Technology has a significant impact on the P3M profession, not only in changing tools but methodologies. Unfortunately, many managers are still following the same core principles, but project delivery has changed.

The only other element of culture the CIO covered was an open and honest work environment and no surprises; essential behaviour for project managers. They must be provided with an environment that enables open discussion to assist when projects are going off track before becoming a more significant than necessary issue.

Program and PHCs System: Assessments and Reporting

PHCs, reviews and monthly meetings reflect on competency outcomes using a modified Gateway Review process. This review provides an independent assessment of the programs or projects. The principles are based on PMBoK, and PRINCE2 functions as a guide, especially for major projects. Major projects are managed, updated and reviewed monthly, focussing on schedules, risks, and issues. There is too much emphasis placed on budget, and as a lag indicator, once the project is out of money, it is too late to fix it. The CIO mentioned that health checks against the broad functions of business and project management need to be undertaken more than they are now. This will be an area for improvement going forward.

KPIs: Continued for Contracts

KPIs are included in the TCCS business plan for key managers and major projects. They are maintained as a measure of the work being done and delivery across the entire portfolio. TCCS issues a monthly dashboard to all employees on metrics to communicate "how we are going".

KPIs: Coaching, Implementation of Assessments and Reports

Getting a balance of the KPIs and ensuring they are measurable and meaningful is a critical element of the PMO. The CIO asks the Executive Board what they want as KPIs, which ensures that they are meaningful to the Board and that it will be keen to see them every month (as they own them). To have a blanket approach is not helpful as the data collected is not wanted by anyone. The other key is to make sure they are reviewed every month. The CIO checks each review to make sure that the KPIs are relevant.

Benefits Management/Return on Investment Reports

Benefits Management and ROI has not yet matured enough and requires additional work, i.e., ensuring the project has met its requirements and delivered to the customer or citizen what was expected. Still, TCCS is not yet at the stage of collecting feedback and determining what benefits or additional benefits were achieved and its value to the community. The reports compiled are considered essential though basic, and discussion has commenced on how TCCS will take this forward over the next few years.

Formal Qualifications and Professional Certifications

Qualifications are supported individually, however, many development opportunities now exist, including career mapping and management, as mentioned above. TCCS places more value on competency-based certification over qualifications and looks more at certification, acknowledging what has been learned and demonstrated.

Annual Report to the ACT Government

The Annual Report uses a short form strategy document. TCCS generates a 'Year in Review' document summarising outcomes against agreed metrics. This document is communicated broadly across the management group.

Outcome and Lessons Learnt

The TCCS Management Team (through its CIO) commented quite thoroughly on the components of the Type 2 prototype. Additionally, the CIO mentioned topics that are not well managed: Change Management, Benefits Management and ROI, and Project/Contract Health Checks that incorporate business functions. However, he also covered topics that are relevant to their business and are considered vital for them and their continuity: strategic and business

planning, KPIs owned by the EPMO, continuous improvement through customer feedback as essential, competency-based training, professional development and certifications for P3M as mandatory, and P3M briefings essential for all levels of management. Other initiatives include defining and prioritising the roles and responsibilities of sponsors, introducing contingency management in projects, enhancing risk management and mitigation across the portfolio, and changing the mindsets of elected members from spending a budget to realising results against schedules. Notably, the CIO now has solid executive support that did not exist previously. At least three executives of the Directorate have strong program and project management backgrounds and understand the need for a corporate approach to P3M and the impact it has on realising Directorate results. In several ways TCCS endorsed the Type 2 components, but also demonstrated that reporting against a model is used to initiate and report on organisational issues that provide greatest value to their business and suggesting areas that need improvement.

The P3M Framework is based on the PMBOK, Prince 2 and PM National Standards Competency Units customised to meet TCCS's business and project environments. Professional development provides the opportunity for TCCS staff to upgrade their skills on an as-required basis and be rewarded with industry recognition, certification and awards.

Ongoing PHCs concentrating on the continual improvement of procedures, information systems and work techniques are undertaken. These are also used for professional coaching. In support, TCCS also has a dashboard reporting process internally. The metrics provided are communicated widely, and short-form reporting is delivered to the ACT Government, including KPIs that are widely used and reviewed at all levels of management.

Unusually, TCCS employs a Community of Practice to encourage a P3M culture. Cultural competence is a priority for TCCS. This feature has been extended and is available across other ACT Government Departments. This study demonstrates that setting a standard and maintaining it for P3M by a senior manager enables a sustained culture for professional project management. The approach includes innovating and using contemporary methods. For example, adherence to national standards for P3M, centralised EPMO management, health checks, benefits management, change management, and KPIs that capture metrics for a wide range of outcomes for the business and personnel.

The CIO also suggested that TCCS spends more attention on the following components as the TCCS P3M environment matures: setting up a standard committee to review and oversee the development of the TCCS Portfolio driven by the needs of the strategy and ensuring that the system can support the outcomes it is seeking to deliver; looking ahead to see where TCCS needs to provide customer services over the next three years but also have an over the horizon

view for about five years to see what the trends are in order to inform both future strategies and policies; meeting the ongoing challenge of an EPMO that needs resources while being difficult to establish the agreed value of its role; benefits realisation management is not well done in the current processes and this relates more to the business maturity and the techniques being available to identify these benefits; change management is a subject that is challenging and one in which TCCS doesn't manage well at the moment, for which a new position is being established; health checks against the broad functions of business and project management need to be undertaken more than they are now which will be an area for improvement in the future; and ROI reporting is an area that requires additional work.

This case study is an example of how to change the culture of P3M in a government public service setting with minimal executive support. Nevertheless, where TCCS managers realise that change is necessary, a means for delivery will be found. As a comparative model, a P3MCIM provides the opportunity for comparison.

6.4   INTERIM CONCLUSIONS

The five case studies are contextually quite different. Nevertheless, this research aimed to test and demonstrate how each has taken components of the P3MCIM prototype Types 1 and 2 and adapted them for their corporate business.

The case studies have variously tested Type 1 and 2 of the P3MCIM and reinforce that no one case study completely uses the model, but adapts it to suit their context and priorities. In summary the following prototype testing conclusions were derived from the case studies:

The Type 1 prototype was suitable for HDCC where no PM framework was previously present. However, customising it for their business context was paramount and included buy in by the Board of Management and the management team. To that end a clear initiative management plan was proposed and endorsed

The Type 2 prototype was partially accepted by JKR, but the management team included components that were acceptable to their context and culture. They excluded the use of KPIs for business reviews and maturity assessment. They were also constrained in their strategic planning by government policy

The Type 2 prototype investigated by TCCS was mostly applied but showed areas of concern for their OP3M management. Areas of concern included buy-in by executive managers, benefits management and succession planning

The Type 2 model was accepted by the Boral Companies (BAQ and BLEG) as they had embarked on a similar OP3M journey, beginning with a form of Type 1 prototype in 2002. Several of their senior managers were still employed by Boral, thus enabling the companies to have a longitudinal view of corporate improvement.

Further consideration of the case study results and assimilation, will be described in Chapter 7.

CHAPTER 7: ASSIMILATION OF RESULTS AND FINDINGS

7.1 INTRODUCTION

This chapter discusses the research results from the surveys, interviews and case studies. The structure of this chapter includes a discussion of underlying principles that apply to explanatory research and a discussion arising from a summary of the results from the surveys and interviews (Chapter 5). It also draws upon key findings, including lessons learnt and inferences gained from applying the Type 1 and 2 P3MCIM prototypes in the case studies (Chapter 6). These have provided a further testing of the prototypes and a reconsideration of the rationale and possible improvement for components of the P3MCIM model that are presented (Chapter 8).

7.2 UNDERLYING PRINCIPLES

Bellamy (2012) states that fundamental research principles involve discussing the results of a study and drawing and defending tentative conclusions about those results. This author's approach is devoted to considering the standards required for inferences in explanatory research. He suggests that these rest upon descriptive and categorical interpretive inferences (Bellamy 2012). Bellamy (2012, p. 173) suggests that "while statistical association may not produce fundamental or satisfying explanations, the explanations consist of a schematic argument about how forces act on others to have an effect and rely on conceptual frameworks and paradigms theories and models". Bellamy further asserts that even though a theory may be evaluated primarily with quantitative data, it is presented principally in a qualitative account of the factors, variables, mechanisms, and contacts proposed for the particular phenomena of interest (in this case, a P3MCIM model). It is for this reason that a mixed-methods approach has been adopted for this study. Bellamy also suggests that implementing a model renders an accurate statement of the phenomenon of interest. The author asserts that "a model should be sufficiently complete to enable a determinate result to be yielded by examining it against the data and including all the plausibly relevant factors" (in this case, the P3MCIM components) (Bellamy 2012, p. 175). Finally, Bellamy states that "an explanation merely tells why and how

events take place, whereas a further interpretation identifies their meaning more broadly" and as manifested in practice (Bellamy 2012, p. 228).

In summary, the survey results, thematic interview analysis and case study insights of this study will be explained, with interpretations applied to the results, including a discussion of the model's internal components and interrelationships (connectivity) as the findings in Chapters 5 and 6 have revealed them.

7.3   DISCUSSION OF SURVEYS AND INTERVIEWS RESULTS

7.3.1   SURVEY P3MS1

The first survey (P3MS1) served to investigate whether the components of the proposed P3MCIM were appropriate by addressing the second research question: What does a P3MCIM model look like? The survey suggested that all components proposed by the prototype models applied, confirming that the target audience deemed them practical and valuable. The survey also suggested other perspectives that the researcher should consider. This survey did not show how the components might be linked in the model; however, the correlation analysis did indicate that many of the components could interrelate.

7.3.1.1 CORRELATION CLUSTERS ANALYSIS FROM P3MS1

The correlation clusters highlighted the importance of creating a holistic model for improvement that identifies crucial components and supports the potential interrelationships and connections within and between them. The six clusters (Chapter 5) have been chosen to provide evidence of these.

Cluster 1.   This cluster of correlations shows a strong relationship between Planning, Governance and Resourcing. These components are the starting point for any application of the models. Strategic planning for the business and front-end planning for any program or project must include responsible governance and be resourced with competent and appropriate personnel.

Cluster 2.   This group of correlations shows the alignment of measurement (in Benefits, Change, and Culture) backed by health checking of program/project welfare against annual expected outcomes and governance and due process (for programs and projects). A key component of a proposed new model is the inclusion of change management, benefits realisation, cultural competence, and measurement of these components. This cluster shows that good governance and due process, analysed through program and project health checks,

will provide evidence of these as well as the progress and action list for the improvement initiative.

Cluster 3.   This set of correlations shows Change, Culture, and Health Checks involved with the operation of the PMO and linked to Benefits Realisation. As per the description in Cluster 2, the inclusion of how the PMO operates adds legitimacy to support structure as a valuable contributing and moderating facility.

Cluster 4.   This cluster of correlations indicate that Health Checks and accurate competency-based Job Descriptions with KPIs may affect change and cultural competence. The proposed model emphasises job descriptions that are competency-based and include appropriate KPIs. This cluster indicates the link between change management and cultural competence.

Cluster 5.   This cluster of correlations indicate that Professional Development Pathways should include learning components related to expertise in Benefits Realisation, Change Management, and Cultural Competence. As discussed later in this chapter, professional development should focus on the disciplines involved with benefits realisation, change management, and cultural competence.

Cluster 6.   Competency-based Job Descriptions correlate strongly with KPIs, an Education and Training System, and Coaching and Mentoring. This cluster confirms that a systemic approach to competency is based on competency-based job descriptions that include crucial activity statements and tasks, a range of variables that describe the program/project context and complexity, and evidence of performance.

Additional Responses from P3MS1

The following is a selection of salient written responses by participants at the end of P3MS1, recorded in Chapter 5, that warrant consideration for developing a model:

1. Commitment is needed by upper management across the organisation to ensure the sustainability of a model

2. Appropriate resourcing and knowledgeable staff are needed and addressed early in the business cycle, where projects are prioritised in a pipeline

3. Program and project managers need to exhibit leadership and need professional development in leadership skills

4. The need to include societal considerations and benefits, social responsibility, in designing and implementing programs and projects needs to be addressed at strategic levels

5. Any model needs to be sufficiently sustainable and durable to survive the changing landscape of a business and personnel changeover

6. Internal coaching and mentoring were emphasised as the basis for a meaningful and direct way of consolidating a P3M system

7. Development methodologies for business analysis, mechanical design and software development must be integrated with the program/project management methodology, reinforcing the need for fit-for-purpose/hybrid methodologies

8. Business context must determine how program/project management processes are applied and that customisation is necessary for a viable, accepted and workable model

9. Collaboration tools, P3M tools and fit-for-for purpose templates are critical, and managed via an EPMO/PMO facility

10. An OPM Risk and Issues Management database for large organisations to address uncertainty management is needed

11. A detailed organisational project framework with the flexibility to suit project streams and types should be adopted.

These additional comments will be considered in the formulation of a modified model in Chapter 8.

Survey P3MS1 has provided a set of quantitative results that confirm that the components of P3MCIM Prototype 1 are acceptable and valuable. Additionally, the clusters of correlation statistics show the importance of interrelationships between components. They demonstrate that the model should be viewed holistically rather than as separate unintegrated components. The additional qualitative comments have added considerable value to understanding the model's conceptual underpinnings, tools and practical elements.

Survey P3MS1 has also contributed to answering RQ 2 by affirming that the components of the prototype P3MCIM are acceptable to experts and practitioners.

7.3.2 SURVEY P3MS2

The second survey (P3MS2) examined how the components of the proposed prototype P3MCIM are being applied in current 'real work' organisations. It answers the third research question: Using the suggested components, how are these applied in everyday practice in the Australian business context? With a 60% private and 40% public sector distribution of respondents, the results indicate that while 46% of the population applied the components in their organisations, 20% were undecided and 34% of the components were not comprehensively

used (Total 100%). The latter result indicates that while respondents were supportive of the components, their organisations are not comprehensively using them and integrating them into their OP3M. These results indicate considerable room for improvement across industries in an organisational approach to P3M in terms of the use of the components and the integration of the relevant components holistically into their business contexts.

7.3.2.1 PRINCIPAL COMPONENT ANALYSIS (PCA) FROM P3MS2

As previously suggested (Chapter 5), PCA was conducted to reduce the question items of the survey (observed data) by clustering the items into representative dimensions, or factors. The PCA produced two valid factors termed by the researcher as conventional business practices, and unconventional program/project practices.

A frequency analysis of the items that clustered into the two factors revealed that all the practices were deemed necessary in P3M practice. However, while the traditional, more conventional management practices are understood and implemented, the more unconventional (recently adopted) techniques are not as readily understood and used. Specifically, the latter components include: executive coaching, stakeholder analysis and management, benefits realisation, change management, cultural competence, business and project management KPIs linked to maturity levels, a workplace-based education, training and assessment system and a coaching and mentoring program linked to professional development pathways.

While the unconventional strategies and practices have been recognised, the PCA suggests that despite their low use, experts and practitioners have considered these necessary for effective organisational management of programs and projects. These results indicate that their inclusion in a P3MCIM will be part of its design.

7.3.2.2 P3MS2 DISCUSSION OF RESULTS OF CORRELATION CLUSTERS

The six correlation clusters drawn from this survey suggest how the components either impact upon or are ingredients of other components. As recorded in Chapter 5, these clusters highlight the importance of recognising interrelationships and the potential for dependency between the components, notably:

1. The connection between the annual plan, governance and a pipeline of programs/projects.
2. Annual business plans, governance, a pipeline of programs/projects are linked to managerial positions (job descriptions) and health checks and KPI attainment

3. Executive coaching is correlated to expertise in benefits realisation, change management and cultural competence

4. The connection between change management and cultural competence on one hand, and health checks, job descriptions and KPIs on the other

5. The growing importance of topics for professional development, including benefits realisation, new methodologies (Agile, Kanban), change management and cultural competence

6. There is a strong link between competency-based job descriptions that will rely on an education and training system, follow-up coaching and measurement of attainment through KPIs.

These correlations begin to show how each component of the P3MCIM is relevant and complementary to each other. This complementarity suggests that a model needs to show how the sum of the parts will create an integrated approach to improvement. That is, using the cluster discussions above, they indicate that:

1. Executive managers need proactive involvement at the model's front-end (strategic/annual planning, governance, pipeline of program/projects and resourcing)

2. Annual plans, good governance and a pipeline of programs/projects rely on competent personnel who can undertake health checks and are measured against KPIs that support business objectives

3. Executive coaching should concentrate on benefits attainment, organisational change and the development of an appropriate culture

4. Change management expertise and the development of cultural competence are dependent on being realised through competency-based job descriptions supported by KPIs that are attained using program/project health checks in the first instance

5. Professional development targets need to include attaining expertise in benefits realisation, change management and cultural competence

6. Competency-based job descriptions need to be well supported by an education and training system, coaching and KPIs that confirm competency.

7. Cultural competence and management is a critical role played by senior executives in setting the "correct" tone for culture norms involving portfolio, program and project management.

7.3.2.3 ADDITIONAL RESPONSES FROM P3MS2

The following written responses were recorded by participants at the end of P3MS2 and recorded in Chapter 5. Each abbreviated statement is deemed relevant to a proposed P3MCIM:

1. The need to carefully select project staff through (perhaps) psychometric examination and a competency assessment that applies to the contextual work environment

2. An approach to P3M requires customisation so that it is fit for purpose

3. The survey was used as a high-level maturity assessment of their organisation, corroborating that the components of the proposed model facilitated this evaluation

4. Managers generally don't know what they don't know about project management. The use of a Type 1 P3MCIM would be appropriate to address this issue

5. Stakeholders tend to be overloaded with project steering meetings and the like, to such an extent they cannot perform their primary duties. This comment emphasises that, while it is essential to include key stakeholders vital to a project, their contribution needs to be appropriately recognised and perhaps remunerated. Significant performance criteria for P3M mangers need to be drawn from national and international standards

6. The need for components of a model to be efficient, quickly useable by the uninitiated and flexible enough to provide sufficient latitude to cater for rapidly changing environments.

These suggestions will be included in the formation of a new model in Chapter 8.
Survey P3MS2 has contributed to answering RQ 2 (How are the components used in Australian business, if at all) by affirming that the components are not used comprehensively.

7.4   DISCUSSION OF INTERVIEWS BY THEMES

The key themes addressed by the respondents include innovative ideas and concepts, strategies, structural issues, and practical issues and concerns, all of which provide fertile considerations for inclusion in a P3MCIM model. The following discussion addresses these topics by themes.

Theme 1: Change Management

This theme was prominent in thirteen out of fourteen interviews with discussions addressing organisational issues regarding change rather than strict variations related to programs and projects. As the highest-scoring topic for discussion, its importance in a new model is salient. The interviewees discussed how this might be achieved and suggested that

change management as a professional toolset must be ranked alongside operations and project management. They pointed out that change management needs to be prominently considered when planning the effects and outcomes of programs and projects and needs to be a prominent skillset included in professional development for managers (P3M). More importantly, for the P3MCIM, the discussion focused on the ingredients of change for project management. The interviews explained 'why' change was attempted in their organisations, the 'attitudes' to change, and the 'methods' employed. This discussion revealed that establishing a sound rationale for change (to the P3M environment), strong positive attitudes (especially senior managers) and a sound but flexible method were essential. As a result, this approach suggests that behaviours associated with change are more prominent than the mechanisms.

Theme 2: Corporate Business Strategy

There were no surprising revelations in this theme with a sound strategic approach to P3M deemed necessary. However, translating that strategy into an integrated portfolio that resulted in programs and priority projects was contentious. This research contends that the sub-themes are critical for the formulation of strategy: benefits realisation and management, capability and sustainability management with short- and long-term targets, governance with a decision-making regime suited to P3M; as well as operations management, a pipeline of programs/projects with real-time visibility (dashboard model), a ROI strategy and mechanism, uncertainty management incorporating risk and opportunity management. The suggested P3MCIM uses corporate strategy as its starting point, and it would necessarily include examining these sub-themes. One interviewee suggested that the strategy needs to include a thorough analysis and diagnosis of the business environment in which the organisation intends to exist, or compete for business, and provides the drivers for survival, sustainability, and competitiveness.

Another interviewee suggested that Corporate Social Responsibility (CSR) should be incorporated into strategic planning for programs and projects. The researcher considers that this topic is a corporate issue that has been poorly defined and employed and will be included as a vital ingredient in the proposed model's strategic component (see Chapters 8 and 9).

Theme 3: Cultural Competence and Management

Discussing cultural competence and management with the interviewees provided a valuable overlay to some of the more technically oriented topics. While the sub-themes explored the subject in a cursory manner, this is one topic that requires further attention and

analysis. As one interviewee mentioned, this study asserts that cultural competence is a "critical element in P3M". Three fundamental issues that emerged from the interviews. First, developing a P3M culture must be inclusive of internal and external parties. Second, that Cultural Competence and Management must include long-lasting levels of respect and loyalty. Third, Cultural Competence and Management consists of the cultural diversity associated with working across global projects with teams and providers. A significant conclusion from this theme is that attitudes and behaviours underpin potential success in cultural competence.

Theme 4: Executive Management Behaviour

As previously stated, this theme elicited the second-highest level of comment. There was a mixture of positive and negative comments. Of note, was the considerable concern when addressing which behavioural norms were expected to support an OP3M culture organisation-wide effectively. Attention was given to the attitudes and behaviours of senior managers with suggestions about the need for training in emotional intelligence skills. As such, when proceeding with a P3MCIM in any organisation, preparatory work may need an increased focus on the willingness and ability of senior manager involvement. Another significant conclusion from this theme is that P3M attitudes and behaviours are crucial if an organisation is aspiring to change.

Theme 5: Performance Management and Key Performance Indicators (KPIs)

The discussion around performance management and KPIs was predictable as interviewees agreed that this measurement form is necessary and valid. Of note were the linkages of KPIs across the organisation. Consistently, the interviewees stressed that KPIs should be linked from a corporate plan to programs, projects and managers. The P3MCIM provides this facility and links KPI attainment with increasing or target maturity levels. More importantly, KPIs need to include behavioural and relationship outcomes, not just target task/goal-oriented work objectives.

Theme 6: PMO and EPMO

Comments about PMOs encompassed a range of structures that have either worked or not been as successful. Nevertheless, the interviewees confirmed that some form of PMO is necessary. A wide range of names was suggested as alternatives to PMO, given its negative connotation due to many PMO failures. The research indicates that the term used for a "P3M Value Management Centre" must be relevant to the organisation and must be mandated and

supported as a matter of priority. The P3MCIM suggests that this facility (whatever name may be chosen) is an organisation's P3M advice and support centrepiece.

Theme 7: Professional Development for P3M Managers and Administrators

The interviewees agreed that the concept of professional development in P3M was essential for any next-generation model and that training alone would be no substitute for longer-term, planned strategies to gain expertise and provide organisational capability. They endorsed a coaching and mentoring program, executive coaching and advice, detailed competency-based job descriptions, teams management, soft-skills development, and an education and training system based on work-based programs and projects. Pathways management and succession planning were also topics that were considered to be truly relevant. As such, the P3MCIM will use these as crucial components of the model.

Theme 8: P3M Improvement Model

There was considerable discussion around this theme. Of note was that interviewees highlighted the importance of gaining support for senior managers before the beginning of any change initiative for P3M. Other highlights were that the intended model be portrayed as a system and required systems thinking and integration with operations management. All interviewees agreed that language and contextualisation needed to be a vital component of any new model. This approach confirms that an organisation can use a P3MCIM as a strategy for effecting change. However, the language used must be contextualised for the target organisation. Prominent in this discussion was the overlaying topic of leadership. One interviewee commented that there is a substantial leadership program in his organisation with the involvement of most managers. The P3MCIM suggests that professional leadership programs for P3M managers are a vital component of the model. Finally, this sub-theme suggested that while consultants may be a necessary feature for initial change, a successful P3MCIM strategy and implementation across an organisation would need to include appropriate development programs to improve P3M, with external consultants only used sporadically and for a specific value.

Conclusions from Interviews

In summary, these themes and topics supported the components of a P3MCIM model, such as linking strategic planning with annual business plans; prioritising portfolios, programs and projects (pipeline); recognising the importance of change management; undertaking

corporate uncertainty management; being engaged in professional development; employing KPIs for programs/projects, and linkage with personnel KPIs; ensuring health checks are well used and applied; and undertaking benefits management and measurement of results. However, these interviews and subsequent analysis highlighted the difference between process-driven, traditional project management and those components driven by influencing attitudes and behaviours. This distinction will be apparent as the model is developed further in Chapter 8.

7.5 DISCUSSION OF CASE STUDIES

The following discussion and recommendations summarise the findings from the case studies. Each case study exhibits a different context and work environment, but in examining the suggested P3MCIM model in an operational environment, the research's conclusions have mostly confirmed its applicability. Yin (2014) asserts that if all the individual case studies turned out as predicted, they would have provided compelling support for the initial set of propositions about the overall multiple case study, that is, the application of the P3MCIM. (Previously referred to in Chapter 3). Nevertheless, other features and initiatives inherent in the organisation (like culture) constrain the organisation to limit change. This was particularly the case with the international studies where a Western-thinking approach required interpretation. This infers that although the prototype models were reflected in the way each organisation operates, the interpretation of their applicability was customised to suit each context.

This summary aims to answer RQ3: What are the organisational benefits of applying the improved model to Australian and international business contexts? The benefits are collectively compiled for the five case studies, with emphasis allocated for specific organisations where applicable.

7.5.1 HAMBANTOTA DISTRICT CHAMBER OF COMMERCE (HDCC)

Inference from the Study. The P3MCIM Type 1 approach has been appropriate for HDCC, indicated by the HDCC Management Team endorsing and applying the components to enhance their business. Nevertheless, HDCC has concentrated on those initiatives that add most value to their organisation.

7.5.2 BORAL LAND AND ESTATE GROUP (BLEG)

Inference from the Study. BLEG has fully incorporated its version of the P3MCIM Type 2 into its business and program/project/contracting environment. As it is working at a Level 4 Maturity status, its key objective now is continuous improvement.

7.5.3 MALAYSIAN DEPARTMENT OF WORKS (JKR)

Inference from the Study. JKR has largely adopted a Type 2 model with certain exclusions and additions, and its recent update suggest that they have chosen those initiatives that offer them most value.

7.5.4 BORAL ASPHALT QUEENSLAND (BAQ)

Inference from the Study. BAQ has adopted the Type 2 model, almost entirely and, like BLEG, is working at a Level 4 Maturity status with continuous improvement as its objective.

7.5.5 ACT DIRECTORATE OF TRANSPORT AND COMMUNITY CITY SERVICES (TCCS)

Inference from the Study. TCCS found comparing its P3M performance mostly conforming with the Type 2 model. However, it identified certain areas that needed more emphasis.

7.5.6 BENEFITS IN COMMMON EXHIBITED BY DISCUSSIONS WITH THE CASE STUDY MANAGEMENT TEAMS

The following list of benefits are divided into two groups: tangible benefits and intangible assets (PMI Pulse of the Profession 2016). The terminology is taken from the PMI in its detailed report on Benefits Realisation. The report states that benefits realisation helps ensure that an organisation's projects are successful beyond common metrics and can be measured both qualitatively and quantitatively. The P3MCIM provides several occasions when benefits can be captured: standard monthly reporting, coaching sessions, health checks, business reviews and benefits/ROI reporting. The list mentions (in parentheses) those case studies where particular benefits have been considered especially helpful. The list mentions (in parentheses) those case studies where particular benefits are especially helpful.

Tangible benefits realised by a P3MCIM:
1. A framework and predictability for P3M; a road map for planning, managing and closing initiatives (ALL)
2. Clear governance for P3M aligned with operational business management (ALL)

3. Anticipation of strategic trends that are relevant to business continuity and addresses uncertainty management (risk and opportunity) at program and project levels (BAQ)

4. Accuracy in forecasting enables commitment by managers, especially for resource management (ALL)

5. Talent management and pathways (ALL)

6. Attainment of goals and success (ALL)

7. Framework for handling issues and failure (ALL)

8. Structured and, defined communication channels; internal and external (ALL)

9. Sustainability through reliable processes and value-laden projects (BAQ, HDCC)

10. No surprises in execution (ALL, but particularly TCCS and JKR because of political fallout)

11. Opportunity management by program and project managers; business-management focussed using whole of organisation awareness (BAQ)

12. KPIs customised for the business, projects/contracts and personnel (BAQ, BLEG)

13. Flexibility of P3M framework based on project classification system (JKR)

14. Standard integrated documentation system for planning, monitoring and controlling (ALL)

15. Professional development and pathways based on a P3M competency-based system of education and training; linked to succession planning (ALL)

16. Performance management based on accurate competency-based job descriptions and professional development (BAQ, BLEG, JKR)

17. Platform for planning and gauging corporate social responsibility (ALL).

Intangible assets realised by a P3MCIM:

1. Persistence and commitment to achieve goals and objectives (TCCS, JKR (both public sector organisations))

2. Brand image (BAQ only)

3. Customer satisfaction and attitudes toward the organisation by external parties (ALL)

4. Reputation and reliability (BAQ, HDCC, TCCS)

5. Relationships with stakeholders, internal and external (ALL)

6. Positive and negative insights revealed through project phases (ALL)

7. End-game focus (BAQ, TCCS)

These benefits have been reviewed and agreed by the case study management teams (contacted by the researcher in 2022). However, for future organisations it will depend on managers to select those that add value to their organisation and deserve the time and effort to capture them.

Apparent Areas of Weakness of a P3MCIM

Having listed the benefits of the P3MCIM, there were several areas of weakness mentioned by the case studies and interviews: ensuring that all employees understand the significance of a project management strategy in the business, targeting professional development for not only P3M managers but also support staff (however this can be addressed through targeted interventions such as technical training, coaching and mentoring), business attitude and commercial acumen of P3M nominated staff. However, the P3MCIM focuses on OP3M improvement and is not meant to be a panacea for all the imperatives necessary to conduct a sustainable and profitable business.

7.6 ASSIMILATION OF RESULTS IN TESTING P3MCIM PROTOTYPES

Assimilation involves fully understanding innovative ideas and how they can be applied in an organisation; a form of acculturation. In this study of OP3M, acculturation suggests that a work culture needs to be recognised, adapted and maintained by its workforce. The following discussion outlines how the P3MCIM prototype model was tested using multiple research methods. This chapter presents the findings from each method, and then assimilates and triangulates the findings to arrive at: a) the test outcome, and b) model improvement learnings.

Research Results Summary

The literature review identified that certain themes for a business-oriented (corporate) improvement model for project management included the recognition of portfolio and program management. These themes underpinned the components of a prototype model (P3MCIM) presented in Chapter 3.

The quantitative results from the two surveys contributed to identifying the components of the P3MCIM and affirming their suitability. In terms of testing the prototype model, the results suggested that the components were appropriate, 46% were being used and 54% were undecided or not being used. The surveys also raised other concerns noted earlier in this chapter. From this, the following findings were derived:

1. The components suggested by the prototypes were appropriate
2. Over half of the components needed attention by managers because they were not being addressed
3. Several suggestions from both surveys suggested other P3M issues were worthy of consideration.

The qualitative data from the interviews confirmed that the themes taken from the literature review and structured into the components of the prototype model were plausible and reflected current and desired business practice. During each of the above steps, other suggestions for inclusion were put forward. In terms of testing the prototype the results from the interviews suggested that several themes were pertinent: business analysis and strategic planning; prioritising portfolios, programs and projects; change management; corporate uncertainty management; professional development and pathways linked to succession planning; KPIs for programs projects linked with personnel KPIs; health checks; and benefits management and measurement of results. The findings from the semi-structured interviews indicate that:

1. The components of the suggested model were valid
2. A model needs executive support, a systems-based approach, integration with operations, appropriate language and customisation, a link with professional leadership programs, close alignment with a change program, and leadership from strong internal leadership rather than external parties
3. There was a difference between components: those that were process-driven and those that were attitudinal and behaviourally driven.

Each of the case studies had a different context and their own cultural interpretation of the suggested model. The case studies considered the P3MCIM prototype model in practices across numerous international and industry contexts. An analysis of the case studies yielded the following findings:

1. The Type 1 model was appropriate for an organisation that had little P3M formally organised
2. A form of the Type 1 approach was used variously by the more mature case study organisations prior to this study
3. The Type 2 model was acceptable by four of the case studies, however, their interpretation of how it was applied depended on the emphasis they gave to the value of the components.

Note: The models were appropriate to be applied to public or privates sector/not-for-profit organisations. No further analysis of how the models were applied in the case studies: i.e., the differences in how they were applied were not recorded.

Table 7.1 lists the findings for each method and illustrates where the results triangulate and validate the findings across the methods employed. The table further illustrates the findings that are unique to the methods and provide a unique insight into the prototype test components.

Table 7.1 Summary of Results by Research Methods

PROTOTYPE Components (Types 1 & 2)	Survey Results (Quantitative)	Semi-structured Interview Results (Qualitative)	Case Studies (Qualitative)
Initiation and Management Plan	Not Assessed (NA)	Supported	HDCC only
Strategic and Business Plans	Agreed	Supported	ALL utilise
Pipeline of Programs and Projects	Agreed	Supported	ALL utilise
P3M Analysis & Maturity Review	Agreed	Supported but needed customisation	HDCC & TCCS
P3M System: Methodology, Procedures, Templates	Agreed	Agreed but customised	ALL utilise
Business Processes integration with P3M	Agreed	Agreed	Most utilised
Business Driven EPMO/PMO	Agreed	Agreed	Type 2 utilised, not Type 1
Change Management	Agreed	Highly supported	ALL utilise
Uncertainty: Risk and Opportunity Management	Agreed	Supported	ALL utilise

P3M competency-based job descriptions and Matrix	Agreed	Supported	ALL utilise
Professional Needs Analysis	Agreed	Agreed	Most utilise
P3M Learning Interventions	Agreed	Support customised competency-based solutions and higher learning	ALL utilise
Coaching & Mentoring	Agreed	Supported to include Executive Coaching	ALL utilise
Professional Development Pathways (linked to succession planning)	Agreed	Support customised competency-based solutions and higher learning	ALL utilise
Program/Project Health Check System	Agreed	Fully supported	ALL utilise
KPIs for Business and Project Management/Contracting	Agreed	Supported	Only utilised in two cases (BAQ & BLEG)
Benefits/ROI reporting	Agreed	Highly supported	ALL utilise

From the combined findings presented in Table 7.1, the following can be concluded as it relates to the testing of the prototype model:

1. The Type 1 model largely remains unchanged

2. The Type 2 model requires more emphasis on the nature of and anticipation of the business

3. The components of the models should highlight the difference between process-driven and behaviourally driven components.

Based on these conclusions the following model improvements were judged to be appropriate and would enhance the P3MCIM model:

1. Type 1: largely unchanged

2. Type 2 to include: an initiation management plan, further steps in the analysis of professional development and change management as a separate component

3. A relationship diagram that clearly differentiates those components that are management process-driven and those that are behaviourally oriented; a combined model.

The revised model is presented and discussed in Chapter 8.

Conditions for OP3M Development and Cultural Competence

This study infers that cultural competence in OP3M will be achieved if certain conditions are met. The research from this study indicates that conditions under which an OP3M culture is engendered may be summarised by the following initiatives and their interrelationships:

1. Research into portfolio business analysis, market research and development that establishes the rationale and need for the organisation to exist

2. Anticipation of how the organisation will cope with future trends, market forces, government and commercial policies, pandemics, how it needs to innovate, and how it balances risk and opportunity for sound decision-making

3. Establishing flexible business plans with intended benefits, linked to operations and P3M, supported by prioritised programs and projects

4. Structuring OP3M governance such that the workforce knows and practices well-defined roles and responsibilities while forecasting and managing resources, and emphasising the critical role undertaken by senior executives in developing the right tone for organisational culture

5. Adhering to a flexible framework for P3M that is integrated with operations management, with customised, common methodologies, procedures and processes that are fit for purpose, i.e., establishing a P3M system

6. Facilitating an OP3M Value Management Centre (EPMO) that has a mandate for assisting and supporting the P3M workforce

7. Defining and undertaking professional development pathways, coaching and mentoring that is both P3M and business targeted (and aligning with succession planning)

8. Insisting on clearly defined and forecast change management wherever it may apply in operations and P3M

9. Instituting a program and project system (includes status reporting) that is used to review, assist and set targets for specific outcomes at all OP3M levels of management

10. Measure and report on program and project results to realise the intended benefits indicated in business plans. This strategy includes an annual business review that measures achievement against key result areas for business operations and P3M. It culminates in an action plan for continuous improvement

11. Establishing strong leadership strategies for key stakeholders, both internally and externally. Reinforce the need for OP3M appointments with succession planning

12. Reinforcing cultural competence by employing a continual learning and motivational strategy that promotes learning from mistakes and celebrating achievements

13. In addition, organisational rewards, recognition, advancements, opportunities and even promotions, can be linked to employee's behaviour that embraces and champions the new culture.

These conditions suggest a balance between activities that are behaviourally oriented, and process based. This balance will be further discussed using a relationship diagram in Chapter 8.

7.7 CONCLUSION

In summary, the literature review has analysed current thinking for OP3M improvement with several essential criteria. The surveys have contributed to the research questions by providing quantitative data that support and affirm the components of a P3MCIM and provide a valuable analysis of its current usage by practitioners and organisations. The data also resulted in correlations that underlined that a model needs to be used holistically and accentuates the need for behavioural components to be prominently applied. The interviews and thematic analysis highlighted the potential of the model itself and those behaviours that would influence its use. Lastly, the case studies provided evidence of how the suggested model is currently being applied and illustrated, and that each approach though similar, is quite different for each

organisation. Chapter 8 will use these findings and present a verification of Type 1 and 2 and a combined P3MCIM model.

CHAPTER 8: MODIFIED P3MCIM MODEL

8.1 INTRODUCTION

This chapter discusses the development of Types 1 and 2 of the P3MCIM, its prospective components, and a suggested relationship structure for a combined version of the model. First, it summarises how the research questions which instigated the line of enquiry to establish and test the prototype models. Second, it discusses and interprets the results and explains the components of the model derived from the research. Third, it discusses a combined model that has been modified using the design thinking process and includes components validated through a process of learning from feedback. The chapter explains how the prototype model works, its component relationships, and how it can be applied and embedded in organisations.

8.2 DEVELOPMENT OF THE P3MCIM: TYPES 1 AND 2

To summarise, the development of the P3MCIM model was based on the research questions that asked:

Question 1: What current maturity models are employed for organisational change in project management?

Question 2: What does a next-generation P3M improvement model look like and how does it differ from Australia's standard approach to project management?

Question 3: What are the organisational benefits of applying an improvement model to Australian and international business contexts?

Question 1 was addressed through a literature review that identified several themes appropriate to underpin the components of a new model. Figure 2.9 summarised the findings.

Question 2 was addressed by the two surveys that used the literature review themes to seek the views of experts on the prototype model, confirmed those themes as appropriate and relevant, and indicated whether or not they were currently applicable and used in the respondents' organisations. These themes were also explored through interviews with P3M managers, and their responses were thematically analysed.

Question 3 was addressed through the interviews and the five case studies that demonstrated how components of the model had been applied and how the proposed model would now apply.

As a result of the surveys, interviews and case studies, Types 1 and 2 of the prototype model have been tested in accordance with the design thinking approach adopted by the study. In terms of the feedback and refinement stage of the design thinking process, refinements have been distilled from the test results.

Interpretation of Results from the Research: Surveys, Interviews and Case Studies

Results from the first survey (P3MS1) indicate that the components of the P3MCIM are relevant (91.6% agreement; refer to Chapter 5). The second survey results (P3MS2) indicate that conventional business practice components are employed (64% agreement; refer to Chapter 5). However, many of the components of the P3MCIM are not currently being applied by organisations, such as pipeline management, integrated governance, change management, benefits realisation/ROI, executive coaching, KPIs for business and project management, succession planning and cultural competence.

The interviewees indicated that many of the business processes for P3M are well known and practised. However, they also indicated that those newer practices, such as pipeline management, change management, benefits management, professional P3M development, and executive coaching, were missing when processes were operationalised. Interviewees were also critical of the lack of executive manager and sponsor support for an integrated approach to P3M.

The case studies indicated that a mature organisation uses most or all of the suggested components in some form. However, the components need to be contextualised and possibly renamed to suit the needs of individual industries. The case studies also showed that areas of concern for organisations were identified as a result of contemplating the model, and these areas were reported in the case study updates (2019-2020). In addition, both interviewees and case study managers suggested that a model must be enacted as a whole with managers and teams, and not compartmentalised.

Revised P3MCIM Types 1 and 2

Type 1

This type is designed for organisations with either a limited P3M system or no project, program or portfolio management system at all.
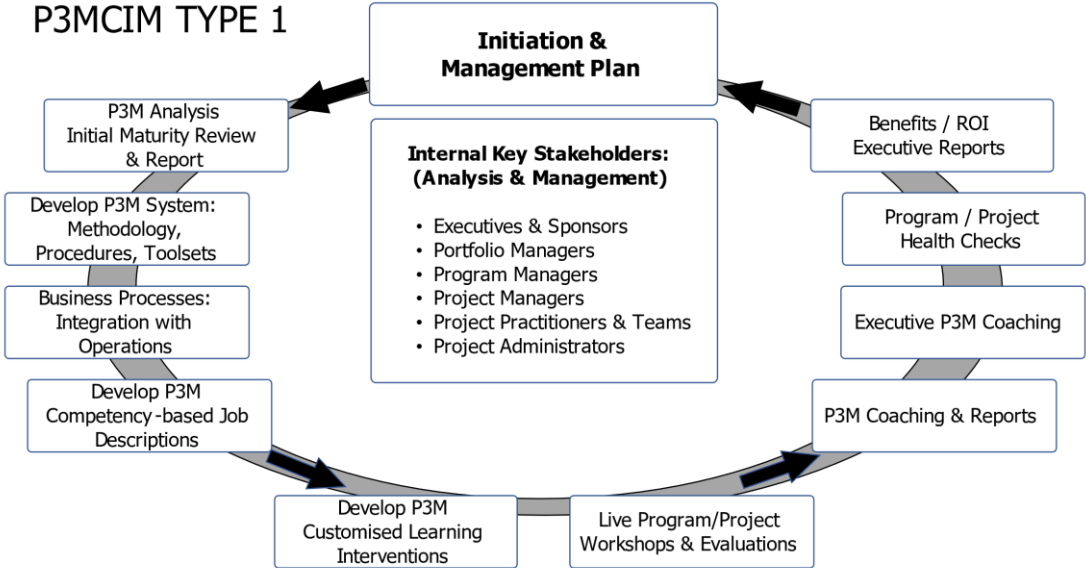
Figure 8.1 P3MCIM: Type 1

This version of the Type 1 prototype has not changed markedly from the original. As noted in Chapter 7, the key to this structure is its central component, the internal key stakeholders within the organisation. The focus of Type 1 is on the internal development and management of a P3M framework, governance and its implementation structure. An initiation and management plan to proceed, charts the activities (anticlockwise) that form the model. It culminates in reports to executive management about the benefits and ROI realised by this approach. While the model can be developed and implemented quickly, its value to the organisation relies on the commitment and effort of its managers and teams.

Type 2

This model is designed for organisations with some form of P3M system in place (i.e., with some components of the Type 1 model), but which recognise the need for further improvement (as explored and discussed in the research interviews and case studies).

P3MCIM TYPE 2

Strategic & Annual Business Plans

Pipeline of Priority Programs & Projects with Business Benefits

Business (value-led) Driven PMO Mandate & Organisation

P3MCIM Change Management Strategy

Develop P3M Competeney based Job Descriptions Matrix

Key Stakeholders:
(Analysis & Management)
• Executives & Sponsors
• Portfolio Managers
• Program Managers
• Project Managers
• Project Practitioners & Teams
• Project Administrators
• Clients
• Suppliers
• Contractors

Benefits / ROI Board Reports

KPI Business + P3M Reviews includes Maturity Assessment

Program / Project Health Checks

Executive P3M Coaching

P3M Coaching & Reports

Professional Development Needs Analysis & Pathways

P3M Professional Development Interventions & Database

Figure 8.2 P3MCIM: Type 2

Refinements to Type 2 include adding business benefits to the pipeline, incorporating uncertainty management at program and project levels (not as a separate entity), linking professional development needs analysis with pathways, specifying professional development interventions (including for executive managers), and executive P3M coaching. Similarly, managers play a crucial role in underpinning the potential success of the Type 2 P3MCIM model. In this case, the model includes a broader set of external participants (e.g., clients, suppliers and contractors).

The P3MCIM Types 1 and 2 models are appropriate given this study's investigation into each component. Still, they do not show how the components integrate with business processes or are compatible with them. In addition, the integration of the various components of the model is vital for its successful implementation. It reflects a standard competency feature (i.e., integration management) of sound program and project management plans. The following section explains the benefits of existing components and shows how they link with corporate processes.

8.3   AN EXPLANATION OF COMPONENTS

The P3MCIM Types 1 and 2 are appropriate for organisations aiming to implement an initial change management program for P3M and those organisations seeking more extensive improvements across their entire portfolio. As a result of this study's research, a combined

model importantly reinforces that leadership skills focusing on behaviours and attitudes of managers across relevant teams are the key driving force behind effective organisational improvement programs.

The research has demonstrated that the components offer value to an organisation. These have been corroborated through the research and the additional comments from surveys, issues raised during the interviews and case study discussions. The section below explains how each component works and its organisational value and includes input from the researcher's prior experience working in the field. It also suggests learning and improvement to the prototype models tested through the interviews and case studies.

8.3.1 INITIAL MATURITY REVIEW AND EVALUATION OF THE BUSINESS ENVIRONMENT AND PROJECT MANAGEMENT

This initial review and evaluation process allows prominent staff members to present their views about potential improvement measures regarding their specific work/project needs. It thereby encourages involvement and commitment from across the organisation by assessing staff competency in program and project management, reviewing and assessing corporate maturity in P3M, and reporting key findings to address the achievement of project and business outcomes. This process also recommends a detailed approach (a project implementation plan), timeframes, and an indicative budget. As mentioned in this study's interviews, this review is intended to be 'inclusive' and capture a holistic view of the organisation's needs for P3M as determined by its managers and teams. The process also identifies roadblocks likely to be encountered and enables the development of strategies to counteract such circumstances. As suggested by the models, it gives the organisation an opportunity to choose its level of maturity by deciding on either the Type 1 or 2 model or, indeed, a combination of the two. Lessons learnt from the peer interviews established that deciding on the level of maturity appropriate to the business needed care so a positive approach to change would be maintained by key managers.

8.3.2 IDENTIFY AREAS THAT NEED CHANGE

This identification process encourages key decision-makers (at all levels of management) to be involved early and become an integral part of the corporate change process. It provides an opportunity for decision-makers to identify the changes required within the organisation to meet their business needs best and better understand how the model's components integrate with their business. As part of this process, decision-makers may wish to identify the most appropriate manager to oversee and lead the corporate change process,

including gaining the commitment of internal stakeholders and reporting to the executive management. The lesson learnt from this study's testing is that, in establishing the need for an improvement initiative, the scope may target a specific part of the organisation and not its entirety. For example, the BAQ case study centred on the contracting side of the business, and not the retail component. In HDCC, specific parts of the business were the focus, such as events and tourism, not the day-to-day interface with <3,000 clients.

8.3.3 AN INITIAL MEETING (WITH THE FACILITATOR/CONSULTANT)

The purpose of this meeting is to involve all internal stakeholders and decision-makers in clarifying the organisational objectives for the initiative and explore options for a change management initiative ('project') that would suit the business needs of the organisation. The meeting would also consider the scope definition and draft proposal and define objectives, assumptions, constraints, risks and opportunities. Agreement would be sought to proceed with the initiative and to gain sign off by executive management. This step was crucial in the HDCC case study, and no real work began until the approach was signed off by the board and the management team.

8.3.4 REVIEW OF STRATEGY AND BUSINESS PLANS

This process would be used to confirm the current P3M initiatives and to determine linkages to the corporate strategy, anticipation and uncertainty forecasting and management, and business plans as a basis for establishing objectives and targets (major KPIs) for corporate improvement. This process, of necessity, includes an up-to-date analysis and interrogation of the changing market environment in which the organisation operates. This review provides the basis for reviewing current programs and projects and identifying new projects/programs that will add value to and sustain the organisation into the future. The BAQ and BLEG case studies confirmed this approach.

8.3.5 DEFINITION OF PORTFOLIO, PROGRAM, PROJECT (P3M) AND OPERATIONAL REQUIREMENTS

This step provides the opportunity to formulate an appropriate governance model; clarify roles and responsibilities for P3M managers, supervisors and administrative/support staff; formalise job descriptions; and provide a sound basis for manager specific KPIs. It links and defines P3M roles with operational roles. Job descriptions emphasise P3M as a core organisational skill and discipline. Each job description needs to be competency-based and

include evidence of performance. The JKR case study was a good example of this approach. At the same time, job descriptions could highlight a psychometric profile for manager behaviour/attitudes that suits the work context. Job descriptions should also include leadership levels and approaches expected and serve as an organisational metric for performance and succession planning. These final points were emphasised in this study's interviews.

8.3.6 DEVELOPMENT OF A P3M CORPORATE IMPROVEMENT PROJECT MANAGEMENT PLAN (PMP)

A dedicated change management team develops the PMP. The plan has the support of an executive sponsor who oversees the plan's implementation and is the link to the executive management team. The PMP is the central monitoring and control mechanism for the change initiative. It identifies specific corporate outcomes to be achieved, e.g., clear KPIs and attainment of maturity levels. The PMP is critical for monitoring both the key milestones, controlling change and the benefits realised. Four of the case studies provided examples of this technique, especially JKR.

8.3.7 COMPILATION AND APPLICATION OF A CUSTOMISED PROJECT METHODOLOGY MATRIX (PMMM)

The PMMM provides a consistent approach to all projects across the business and aligns with the corporate strategies. The methodology integrates business and P3M processes. It is developed by key/influential internal stakeholders using either internal advisers or external consultants. It allows for project types/levels/cycles to be documented (such as revenue, capital, ITC, business process change streams). The PMMM identifies existing techniques and tools and identifies future techniques and tools required for a higher level of maturity in P3M management. In short, it provides a common, robust, standard and sustainable model for OP3M that caters for internal structural and personnel changes over time. It aims to be customised and fit-for-purpose. The Boral case studies exemplify more extensive versions of a PMMM, whereas the version used by HDCC was rudimentary but highly targeted towards primary usage. The lesson learnt from this area is twofold: the PMMM needs to be adaptable and segmented to cater for a range of project types (such as across the Boral Ltd companies, and the JKR ACAT system), and simplified to suit an organisation that is learning to apply P3M.

8.3.8 P3M FRAMEWORK: PROJECT MANAGEMENT PROCEEDING WORK INSTRUCTIONS AND DOCUMENTATION

PMMM documentation provides a concise description of project phases (Procedures); provides a concise description of activities within phases (Work Instructions); and offers a detailed cross-reference for business documentation, software and corporate systems to support programs/projects. It provides a knowledge management framework for programs, projects and contracts management. Four of the case studies provided examples of this discipline (BAQ, BLEG, JKR and TCCS).

8.3.9 DEVELOPMENT AND CONDUCT OF CUSTOMISED COMPETENCY-BASED TRAINING AND LEARNING PROGRAMS

This step includes five interventions, variously employed by the case studies.

8.3.9.1 FIRST INTERVENTION: CUSTOMISED LEARNING FOR ONBOARDING

Customised learning for onboarding introduces the P3M system to new personnel and reinforces its use for current staff. It promotes the intended P3M culture and values required by the organisation. Ideally, this learning is intended for all inexperienced staff, including executives, and is, where possible, deployed online as an ongoing point of reference for staff.

8.3.9.2 SECOND INTERVENTION: PROJECT MANAGEMENT WORKSHOPS

Project management workshops allow for using the organisation's PM procedures, work instructions and toolsets, and emphasises integration with business systems; focus on priority projects (current/future); make sessions interactive; discuss and solve real project issues/problems; result in outline Project Management Plans for selected projects; allow for considerable involvement and attendance by managers (at all levels) and corporate specialists/experts, and report on the success of the workshops as well as recommend suggested changes for future delivery. These workshops are ideally designed for five levels of managers and administrators: portfolio, program and project managers, supervisors, and administrative/support staff. They include, not only P3M skills, but also the overlapping disciplines of leadership, change, uncertainty and benefits management. They also highlight the responsibility and value of the EPMO/PMO structure and mandate. Where possible these interventions use current workplace procedures and instructions to provide a contextual linkage between current usable work practices and introduced components.

8.3.9.3 THIRD INTERVENTION: PROJECT MANAGEMENT COACHING

Coaching involves a 'collaborative solution-focused, results-orientated, and systematic process in which the coach facilitates the enhancement of work performance, life experience, self-directed learning, and personal growth of the coachee' (Marie & Crabb 2017) p. 10). Following professional development interventions, or appointment to a project management role, project management coaching allows follow-up with each participant and business managers to confirm the application to their learning programs and projects and provide longer-term follow-up to verify that the approach works for the individual and each workgroup. Formal coaching reports are essential as part of professional development tracking.

8.3.9.4 FOURTH INTERVENTION: PROJECT MANAGER MENTORING

The "work of a mentor is differentiated from coaching in that a mentor regularly shares particular professional wisdom and experience with a mentee" and it is a "developmental process in which a more experienced person shares their knowledge with a less experienced person in a specific context through a series of conversations (Marie & Crabb 2017, p. 11) Choosing in-house mentors confirms senior manager or senior project manager commitment by positioning them in an overview mentoring role. It assures professional development and attainment of project management corporate maturity. It also allows competent managers to receive advice concerning the achievement of Australian professional certifications such as AIPM RegPM or other international certifications (such as PMI PMP and IPMA). Managers also need development in how to be effective coaches and mentors.

Consistent with the 70:20:10 learning model mentioned previously, most employees learn the art of leadership on the-job (70%), via relationships such as coaching and mentoring (20%) and undertaking formal structured learning (10%). It is therefore suggested the model incorporate how learning leadership will be achieved. For instance, will this be facilitated in an ad hoc (unstructured) manner – or through organised and planned interventions, linked to their training and development needs (or a combination of both).

8.3.9.5 FIFTH INTERVENTION: MASTERS AND DOCTORAL PROGRAMS FOR ADVANCED PRACTICE PROFESSIONALS

Selecting programs at AQF Levels 9-10 are equally relevant for senior managers who will conduct problem-based and longitudinal workplace studies into corporate improvement in OP3M.

While each of the more advanced case studies follow these interventions, it was information from the literature review, feedback from the surveys and discussions with the interviewees that revealed topics for learning that would provide value for professional and organisational development such as: project focused strategic planning; business, program, and project integration management; anticipation management (new standard); uncertainty management; leadership in program and project management (new standard); sponsor management (new standard); succession planning and management; EPMO/OP3M Value Management Centre; coaching and mentoring for P3M; performance management for P3M; behavioural management and assessment; change management and impact; stakeholder management (new standard); multigenerational workforce management; and OP3M cultural competence.

While this list of topics is not exhaustive, this study has identified these topics that are additional to those listed in conventional P3M standards. The JKR case study, for example, included the soft skills development of its P3M managers with topics such as personal communications management, relationships management, and customer focus.

8.3.10 PROGRAM/PROJECT HEALTH CHECK SYSTEM

Internal or external experts can undertake a health check (project review with recommendations). A health check is not an audit but, instead, health checks include the following benefits: reduces the risk of the business failing to deliver as intended and improving the quality of the outcomes, provides early warning and advice on how to recover a developing situation, assesses the adequacy of business obligations and responsibilities, allows for independent professional scrutiny to enable identification and early rectification of faults, provides objective advice to ensure that the business meets its stated goals and targets, and the scheduling of health checks encourages the business management team to maintain good practices for both planning, managing and reviewing the business.

Depending on the circumstances, health check teams may be designated Green or Red depending upon the project status. Green interventions are recommendation and advice based, and Red Team interventions make recommendations for significant change such as personnel

replacement. The JKR case study provided a thorough example of this technique which was also linked to an extensive project classification system, linked to their project management information system. The interviewees revealed the many forms a health check system can take and endorsed their use.

8.3.11 CUSTOMISED ASSESSMENT TOOLS FOR ORGANISATIONAL AND INDIVIDUAL PERFORMANCE (KPI MATRIX SCORECARD)

Applying key performance indicators to a program/project context involves meeting with the convenor and the executive to determine the needs and requirements for the development of customised KPIs, compile a Project Management Plan (PMP) for the initiative and have it endorsed, review the organisation's Strategic/Business Plan, Operational and Program/Project outcomes to establish the "business drivers", compile a KPI Matrix for each driver, identify KPIs for both the functions of project and business management that are designed to attain performance based on a 1-5 Organisational Maturity (Likert) scale, link KPIs to underlying data sets (existing or warranted), measure actual levels using self-assessment and the facilitate team assessment, collate and aggregate normalised measures across divisions/businesses, analyse KPI results against business results and assign responsibility for priority actions (in the next twelve months), and set a schedule for annual assessments and re-evaluation of the KPIs. This method provides the utility for continuous improvement management of both P3M and the organisation's business. Using KPIs at project and personnel levels was mentioned in this study's interviews and highlighted in the BAQ and BLEG case studies.

8.3.12 PROGRAM AND PROJECT RESULTS: BENEFITS REALISATION/ROI

Results of programs and projects are reported variously through status reporting, gateway reviews and dashboard software that tracks performance. However, the P3MCIM suggests that benefits at organisational level need to be tracked throughout the cycle so that the result of OP3M can be realised. This may be undertaken against quarterly or annual reporting. The case study that highlighted this was BAQ, as the sustainability of its commercially driven business depends on contracting that meets expected margins.

These components suggest "how" a combined model can be employed. However, as stressed in the research findings, interventions need to be formulated and agreed upon to suit the context and type of organisation.

8.4 COMBINED MODEL: P3MCIM MANAGEMENT SYSTEM

Chapter 7 concluded with a summary of how the model components could be assimilated into the workplace (Section 7.6). As this study has investigated developing a model, the next step is to examine how these components can be integrated and applied in business management practice and suggest a sequence and explanatory relationship. Figure 8.3 (below), a Combined P3MCIM presents that arrangement as a strategy for addressing the problem enunciated in Chapter 1, i.e., how to link business and operational management with OP3M.
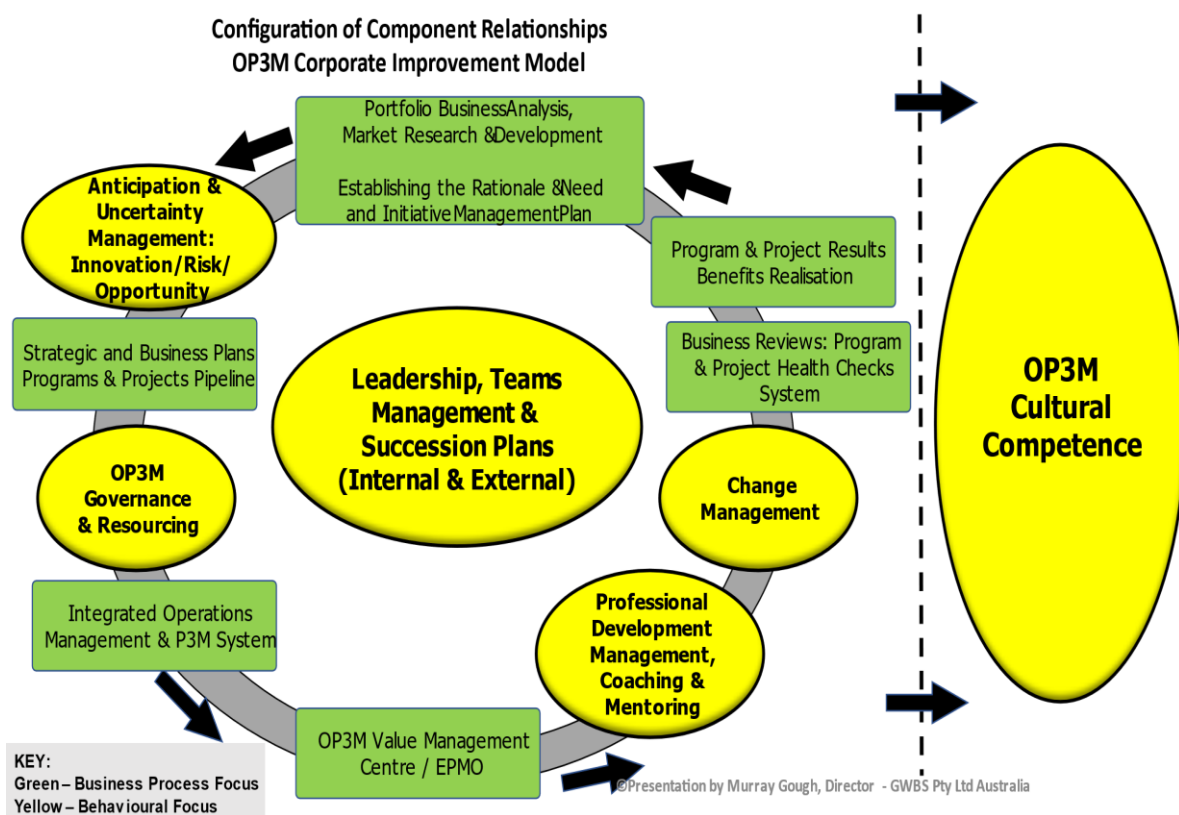
Figure 8.3 Combined P3MCIM

8.4.1 HOW DOES THE MODEL WORK?

Components are organised in an anticlockwise direction, beginning with establishing the rationale and need for improvement. An outcome follows each component, a solution or remedy or related action. The loop is eventually closed by examining Program & Project

Results and Benefits Realisation which feed back to the future Strategic and Business Plans of the organisation. The sum effect of the model results in P3M Cultural Competence (far right).

Note that the configuration of relationships indicates the differences in the components: rectangles (green) for standard business processes and ovals (yellow) have bold text for those components that rely heavily on behavioural conditions. As a result, the model's emphasis is one of behavioural change rather than a business process change.

The model does not need to be used or commenced following the above sequence. For example, a likely investigation of the organisation's needs may well be identified through a series of project health checks. A subsequent report may indicate P3M weaknesses requiring improvement. The commencement may also arise due to reports from the Value Management Centre/EPMO that pinpoint areas of concern in planning or implementation. Alternatively, the model may begin with a series of professional development interventions that alert managers to P3M issues and responsibilities. In this case, the model is not the starting point for the examination of problem areas. The areas for concern may well be those revealed by, for example, poor business results or by professional manager development. The model merely provides a linked series of components for systemic examination and a series of elements to enable improvement.

8.4.2 EXPLANATION OF RELATIONSHIPS IN THE MODEL

The suggested model components are further described below.

8.4.2.1 RECTANGULAR COMPONENTS OF THE MODEL (BUSINESS-BASED AND P3M PROCESSES)

These components change little from what is known and practised in organisations (confirmed by the surveys). For example, common business practice is to present strategic plans over the years and define them annually. It is also common to conduct market research to forecast where the organisation is headed, to anticipate and develop opportunities, and innovation. However, a P3M ingredient would not clarify the separation between operations and programs/projects but integrate them in terms of resourcing, budgets and timeframes (see Governance and Resourcing below). This combination means that an integrated P3M System is coordinated with operations management, helping move project management to a strategic discipline (Cooke-Davies, Crawford & Lechler 2009).

Nevertheless, these processes (rectangular components) would not require significant change. Likewise, a Value Management Centre (EPMO/PMO) mandate that is business-driven.

Perry (2009) would implement the PMMM and Procedures for P3M and not require significant change as it assists all managers across the business. Note that included in the mandate is the expertise of value management appraisals, suggested by Thomas and Mullaly (2009). Also, Health Checks, outlined by Haji-Kazemi and Andersen (2014), and benefits tracking (as an early warning system). Similarly, dashboards for program/project progress and finalisation reporting (back to the business plan, e.g., ROI) is not uncommon and usually well-practised.

8.4.2.2 OVAL COMPONENTS OF THE MODEL (BEHAVIOURALLY BASED)

In the first oval shape, Anticipation and Uncertainty Management, a common failure is only to gauge and track risk in terms of scope, time, cost and quality. International standards for risk management portray a much more comprehensive set of categories of risk and mitigations for business. Also, if these risks are balanced against the identification and tracking of opportunities, a more objective understanding is realised, termed 'uncertainty management' (Baccarini 2018). A change in terminology and the practice of a new discipline falls appropriately into managers' professional development.

The second oval, P3M Governance and Resourcing is a component where there is the opportunity to address organisational change. A P3M Governance structure is often simply added to an existing organisational structure in common management areas such as executive and policy, research and development, finance, operations, production, marketing, engineering, ICT, HR and administration. The model suggests that P3M governance is distributed across all of these areas of expertise. This provides the opportunity for business managers to define the often-complicated resourcing issue for projects and operations. These decisions do not rest solely with P3M managers, who may often need to seek additional resources for an initiative that may not be considered mainstream.

This situation raises a prominent issue associated with the often-long hours and overwork experienced by dedicated P3M managers. This issue is reflected in the PM competency standard context which includes a "Human Resources" Unit of Competency (Standardization 2012; Project Management Institute 2013b) (Australian Institute of Project Management 2021). This Unit describes who will do what and how responsibility is arranged. The standard does not suggest how this works from a holistic corporate perspective, apart from developing techniques such as a "responsibility assignment matrix" for each program or project.

An organisational governance model needs to reflect what is possible given the existing staff available or potential staff required (internal and external) for the envisaged portfolio of

programs, projects and operations (Young & Conboy 2013). This form of distributed governance model would be ratified through strategic and business planning processes at the executive level, and its implementation may require professional development. The governance model is another discipline in a new model requiring significant structural and behavioural change associated with its performance.

Mainly taken from the evidence of this study's interviews and application in the case studies, the third oval Professional Development (PD) for P3M managers is either of two extremes: organisations that partially support a systematic approach to PD or those that are ad hoc and will cut a training budget at any downturn in finance. A professional development strategy based on competency-based job descriptions, coupled with forecast succession planning (internal and external), can be achieved at minimal cost to an organisation, along with a system for coaching and mentoring. Implementing such a system is a behavioural issue. Johnson, Blackman and Buick (2018) discuss how integrating experiential, social and formal learning is a means of achieving lasting change. Organisational change could be realised by senior managers involved in a higher education development program related to a business case study, as suggested by Fergusson, Brömdal, Gough and Mears (2020), and reflective work-based research by Fergusson, van der Laan and Baker (2019).

Similarly, change management in project management has conventionally been the domain of change within the project (e.g., variations management). Change management (the fourth oval) refers to the change that personnel need to make in planning and managing a project and forecasting the effect of project outcomes on the intended target population and the business or client. As suggested in the literature review, this is the circumstance where project managers become change managers, and vice versa (Levasseur 2012). Coupled with and identified through uncertainty management, change management is a behavioural quantity (Pollack & Algeo 2016). Change management regarding the development of project personnel abilities and usefulness is too often ignored. It is one of the features in a new model that requires a different or concentrated effort that has not been prominent previously.

8.4.2.3 CENTREPIECE OF THE MODEL: LEADERSHIP, TEAMS MANAGEMENT AND SUCCESSION PLANNING

The centrepiece of the model is people leadership, teams management and succession planning. As noted previously in the literature review, the techniques involved with servant leadership in Blanchard and Broadwell (2018), and authentic leadership Avolio and Gardner (2005), and Lloyd-Walker and Walker (2011), are prominent in this model. The model suggests

that P3M managers must work cooperatively with the many stakeholders in programs and projects, not in an authoritarian power-driven manner. A means of applying relationship building that resonates with this strategy is that of cooperative intelligence. Naylor (2007) demands trustful cooperation and knowledge of stakeholder predispositions. Hershey (1996) and Morrison (2008) recommend adopting a situational leadership approach that suits program and project management's changing environment (requiring adaptable, supportive and directive behaviours) given that projects sometimes change on a daily and hourly basis. That is why, for example, the Agile methodology of daily updates and sprints are becoming prominent and useful. However, situational leadership stresses that the manner of handling a new situation is collaborative and cooperative rather than directive. That is not to suggest that this approach slows a project's progress; it makes proposed future actions more informed. Dedicated project-based professional development programs and long-term performance evaluations are needed for these approaches to be embedded in managerial behaviour.

Additionally, the recent GAPPS (2021) publication provides five units of competence for project leaders dealing with complexity. These innovative competencies suggest a definite change in leadership norms. The first competency addresses thinking holistically by applying systems thinking strategies, understanding and planning for emergence, and managing systemic opportunities and threats. The second demands that a leader exercises personal mastery by maintaining a resilient and open attitude, applying cognitive flexibility, leading with sensitivity, and taking informed action. The third provides conditions to enable decisions and action by maintaining strategic direction, acting sustainably, setting minimal rules to facilitate action, establishing a data management framework, and establishing control systems to leverage knowledge. The fourth requires a leader to respond to the environment by building responsive processes, planning resources for flexibility, reviewing assumptions, constraints and implications of action, continuously reviewing complexity and direction, and using data and prototyping to test and validate ideas. The fifth is to engage collaboratively by developing a collaborative and engaged culture, nurturing relationships and teams, fostering collaborative communication, appreciating diverse perspectives, and working towards a shared vision and purpose.

These units represent and expand on many of the leadership competencies affirmed by this research. They indicate a prominent focus on attitudes and behaviours needed by leaders that the literature in this study suggests is missing. These competencies would also serve as an excellent basis for future leadership programs in P3M professional development, as indicated in the component explanations (Section 8.3 above) the design of the P3MCIM.

8.4.2.4 CULTURAL COMPETENCE

Lastly, the model suggests that Cultural Competence in P3M follows the Dreachslin et al. (2017) blueprint that includes diversity and language change. As previously discussed in the literature review, culture is often referred to as 'the way we do things around here.' The P3MCIM model suggests that combining these business process and behavioural components will enable an organisation to achieve how managers want their organisational culture to be reflected and embedded. The model recommends that changing culture is achieved through a concerted professional development program and succession planning to enable changes to endure (Buick 2018). Critics might suggest that it does not seem possible for an 'alien culture' to be indefinitely imposed upon another (Hansard Archive 2021). The model alone will not enable change; managers' and teams' motivation and success, suggested by Fowler (2014), will create and embed improvements.

8.5   EMBEDDING A P3MCIM

As outlined by the longitudinal case studies in particular, the application and embedding of an improvement strategy takes various forms. The Boral case studies took a long-term view of implementation that included an integration of business processes with a framework for project management, which they termed contract management. The initiative was reinforced with organisational learning that included the senior management team, company management teams and a range of business and project/contract managers. Briefings and courses were conducted both formally and on-the-job to achieve embedding of the new approach and professional development. Furthermore, the initiative was consolidated on an annual basis with company reviews that reported nationally to the corporate executive on the achievement of results in both business management and contracting.

Studies undertaken to promote how project management initiatives have been embedded in organisations have been carried out by Fernandes, Ward and Araújo (2014). The researcher contends that many of the initiatives mentioned in this study (see themes summary above) are included in Fernandes, Araújo, Pinto Machado (2019) improvement initiatives that, in overview, include corporate (P3M) processes, tools and techniques, people and organisational learning, and the organisation's general management system. However, the importance of their framework can be seen in how they segment vital factors and themes to embed the change.

Their initial work was followed by improvements to the framework (Fernandes, Araújo, Pinto Machado 2019, p. 19). They cite the main levers for supporting the change as perceived usefulness, resources to support change, external stakeholder requirements, demonstrating the value of the PM initiative, piloting, and feedback on impacts. Similarly, the P3MCIM suggests that these components be addressed at the beginning of any initiative and written into the corporate P3MCIM improvement management plan, then re-assessed at relevant milestones. Moreover, this embedding process needs to be driven by a leadership team.

As a final strategy, Hodes (2017) maintains that innovations inspire people and performance. The author concludes by suggesting that, in implementing any change initiative, 'the leadership team must become the relentless architects of the possibility their people can live into … if the new systems are successfully implemented, they will provide a solid platform for the growth of a self-sustaining culture of continuous improvement' (Hodes 2017, p. 399). This strategy is the intent of the sustainable P3MCIM, as presented in this chapter. Chapter 9 will draw conclusions for the study and indicate future research.

CHAPTER 9: CONCLUSIONS

9.1 INTRODUCTION AND CHAPTER SUMMARY

This study aimed to address the research problem, that OP3M needs to combine with business management improvement for optimal benefit; recognising that the two are rarely practised simultaneously in an integrated fashion. As a result, it sought to report on work-based research related to OP3M in practice. The purpose of the study was to develop and formulate a change model for corporate business in public and private sector organisations. The study-based model development on a design thinking approach utilising a rigorous methodology to inform its components and test the prototype model.

To this end, the researcher sought the views of nationally and internationally prominent P3M experts and practitioners to empathise with the end-users' needs and to frame the development of the prototype model. The study then undertook case studies to evaluate and test the prototype model so as to modify it based on feedback; learning from its deficiencies and validating the components that work.

The prototype model focussed on project maturity analysis, assessment and management, change management, business benefits realisation, professional competency and leadership in P3M, and cultural competence for OP3M. In brief, the model has attempted to provide organisations with a selection of improvement components to meet their needs and priorities to achieve improved business results and outcomes.

Chapter 9 describes the original problem, the research questions and conclusions, and recommendations for using the suggested P3MCIM. It suggests future research, practical implications, and culminates in a discussion about how the model may be further tested and modified as the agile stage of design thinking's continuous feedback loops and improvement. This chapter offers the researcher's conclusions drawn from this process, discusses the research limitations, and concludes with final recommendations and practical suggestions for implementing the P3MCIM.

9.2 SUMMARY OF THE PROBLEM

As stated in Chapter 1, much of the problem formulation and rationale for this study was derived from the researcher's work experience in industry and public sector organisations addressing OP3M improvement strategies. The study has attempted to address the stigma

associated with the traditional terminology used in the project management discipline and its application to organisations, some of which have been reticent to adapt to its use and standardised use of the field itself. The researcher's view is that a broader, more comprehensive, contextualised approach will facilitate the commitment to and application of an improvement model for OP3M.

9.3   RESEARCH FINDINGS

9.3.1 RESEARCH QUESTIONS

This study has explored how, and to what extent, an organisation can improve project and business results by increasing organisational maturity in project management at P3M levels by asking the following three research questions:

Question 1: What current maturity models are employed for organisational change in project management, and what components need to be considered for OP3M improvement?
This issue was investigated through the literature review. It was found that existing models addressed the issue of which activities are required for maturity assessment but did not address how maturity is achieved. While the literature review raised topics relevant to a project environment that could be considered valuable components of a model (such as dealing with complexity and chaos management), overall, it confirmed considerable gaps in management strategies and techniques for OP3M to be achieved.

Question 2: What does an OP3M improvement model look like, and how does it differ from Australia's current approach to project management?
This question was addressed by following a design thinking process. The quantitative and qualitative research methods developed an empathy profile for addressing the problem. The qualitative interview framed the parameters for developing the prototype model. As such, proposing a prototype model and informing its design through surveys and interviews was achieved, including validating its components. In particular, the surveys explored the respondents' needs, verified the model's components in addressing the needs and explored their validity in a range of public and private sector organisations. The first survey confirmed that the components were appropriate and elicited suggestions for other features to be included. The second survey asked participants to gauge the extent of usage in their organisations or in organisations for which they had worked. Valuable suggestions were again offered about the components of the proposed model.

In addition, the interviewees provided responses to the design of a new model. The factor analysis, derived from the quantitative analysis clearly showed the distinction between business and project process and those areas of managerial responsibility where project defining behaviours are prominent. This analysis indicated that attitudes and behaviours towards change management, professional development, leadership in complexity, and cultural development needed to be the focus of a new model.

Question 3: What are the organisational benefits (or deficits) of applying a model to Australian and international business contexts?

This question was addressed through case studies and interviews with senior executives in those organisations. The range of contexts used in the case study organisations suggested that the model can be applied and adapted to small, medium and large enterprises and public sector organisations and agencies. The three-year case study at HDCC exemplified how a model can be used in a non-project environment. The update report provided evidence that a project management structure and governance have been strategically embedded in the organisation.

The longer-term project-oriented organisations (i.e., BAQ, BLEG, JKR) demonstrated that using an initial model provided these businesses with the ability to adapt and mainstream an organisational approach to P3M. After considering the model prototype (Phase 2), they had already adopted several components or created P3M innovations to suit their business needs. The positive result focused on a strategic, organisation-wide approach, and nothing in their systems appeared ad hoc or piecemeal. The emphasis on the need for senior executive input and professional development for a wide range of P3M managers was exceptional. The fifth case study at TCCS is a practical example of how a corporate-wide model for managing P3M can be applied. Unusually, it is driven by a community of practice across managers in the organisation who recognise its value to achieve desired outcomes. That community is increasingly extending its influence across the ACT Government Directorates. A common factor in each case study was that a senior manager or team were continuously involved over an extended period.

Deficits of Applying a Model

This study has concentrated on the benefits of applying a change model for corporate P3M improvement. However, the implementation of a model may encounter deficits, in that the model does not provide appropriate components of sufficient means to make corporate change valuable. In this study, the deficits of applying a model were found to be negligible, as particularly in the case studies, managers chose those areas of improvement that suited their

situation and context. For example, in HDCC the term 'model' was not used, but the initiative concentrated on those business matters that needed to be corrected or improved. In JKR, the team that drove the change initiative did not refer to a 'model' but concentrated on those areas of change that would add value to their business. In the Boral businesses, an initial strategy was devised by a group of company general managers who used a cross-business strategy for 'contracting' (a Project Management Methodology Matrix) that suited their purpose. TCCS, through its middle management, formulated a cooperative means of uniformly addressing a project management framework and its attendant supervision. So, a P3MCIM was applied, in three of the five case studies, well after the event of considerable change. As a result, these conclusions reinforce that a model such as the P3MCIM is a guide for the selection of initiatives and can be adapted for the business context and industry, rather than providing a lock-step process for change in OP3M. Moreover, the additional comments and interview reports suggested that any deficit of using a model would be the result of managers' lack of knowledge, understanding, or poor attitudes and skillsets in OP3M, leadership and change management.

9.3.2 GENERAL

The input from colleagues across a wide range of businesses and organisations has been invaluable. It allowed the exploration of diverse themes in a rich variety of contexts. Nevertheless, the model's components represent a significant level of detail that it is not possible to provide in this report. The next iteration of the model will generate documentation in sufficient detail to enable it to be accessible to organisations. Consequently, the model derived in this study is a high-level guide to components that should, when used together, influence the improvement of OP3M. The model does not include all suggestions that have been researched or suggested by contributors to the study (see Future Research below). However, these will be further examined before compiling a subsequent P3MCIM Guide.

Nevertheless, the model does allow business managers to consider a holistic, integrated approach to OP3M improvement and choose elements relevant to their business, portfolio, program and project needs. A starting point would be selecting components that meet specific requirements, add value to the business, and warrant the effort required for implementation. In that regard, the model separates those primarily conventional business practices and those behaviourally based activities. For example, an organisation may require modern technology to support programs and projects. Once a decision on a particular technology has been taken, the first activity associated with the technology is its procurement. However, its implementation

may require significant behavioural changes, including its acceptance, training, and embedding into the organisation. This situation involves considerable change management and leadership. As the world relies increasingly on software and other technical solutions related to process improvement, such as business process reengineering, the model from this study emphasises the importance of behavioural issues.

As discussed in Chapter 4, the researcher suggests that the term 'P3MCIM' will not be universally appropriate for organisations. More particularly, it needs to describe a model that offers intervention strategies for business improvement and selecting those components that will best optimise a system for OP3M that suits a context, organisation and business. As the model is considered into the future, an alternative term will be more appropriate through the choice of organisations that use it. It may be called, for example, a Strategic Project Management Initiative (SPMI), or Enterprise Project Management (EPM) or Corporate Improvement for Portfolio, Program and Project Management (CIP3M), or Portfolio, Program and OP3M Cultural Change (OP3MCC), or Integrated Business Portfolio, Program and Project Management (IBP3M). Importantly, it will be a name that suits the initiative's purpose and with which everyone in the target organisation can identify. However, for now, the term P3MCIM is being used to encompass a generic approach.

9.3.3 P3MCIM COMPONENTS REQUIRING DEVELOPMENT

The researcher considers that specific components of the model require follow-up investigation and further development. The researcher believes that the features requiring the most attention are behaviourally based. These include five areas:

1. **OP3M governance and resourcing** suggests that organisational project management lives as a discipline within each organisation, with no specific titles for P3M managers. That means two things: the appropriate level of P3M is integrated into job descriptions and P3M is not regarded as a separate area of expertise in management

2. **Uncertainty and change management** are two disciplines that need embedding in job descriptions. As uncertainty encompasses risk, opportunity and balance, this discipline may need to be applied across the program and project cycles, given that it is not just a feature of front-end planning. Change management is a cross cycle discipline that ideally needs to be commonly applied by all levels of management. Linking change management with uncertainty can assist the organisation to better measure and realise benefits and outcomes, and achieve competitive advantage

3. **Professional development management, coaching and mentoring** are critical components of a new model. While job descriptions may form the basis for education and training programs and performance management programs, their analysis and learning interventions may need considerable customisation. As such, these components may need to be contextualised to the environment in which P3M is practised. In addition, an education and training system supported by integrated pathways for professional development that cater to learning needs, including movement both horizontally and vertically within the organisation, is a crucial feature in the model

4. **The leadership and succession planning** component is the centrepiece of the model. Professional development programs need to emphasise leadership and team building programs that support policy implementation, operational and program/project management needs, especially those involving complexity, multiple cultures, time zones and locations. In larger organisations, strong leadership is an essential element concerning both the management of internal stakeholders and those external agencies that support its functions, such as suppliers, contractors and clients. Including leadership as a critical element of professional development programs can also provide the opportunity for effective succession planning

5. Lastly, an area requiring significant attention in a new model is **OP3M Cultural Competence**. This study suggests that the combined application of all the components will result in this endpoint. However, the model does not indicate how this behavioural change in attitudes can be measured. All the other ingredients (business processes) have a solid foundation for the measurement of performance. However, the researcher questions whether qualitative and quantitative methods need to be defined to measure this component. Cultural competence in OP3M is inherent in each element as failure is addressed or success is celebrated. If the concept of P3M is accepted organisationally, people will know whether they are culturally competent.

9.4 LIMITATIONS OF THE STUDY

This exploratory study was underpinned by a sequential mixed methods research design culminating in an evidence-based industry and organisational perspective. Due to the positive orientation of design thinking, the study was shaped by a focus on developing a workable and practicable outcome. As such, elements of the researcher's self-validation bias were prominent.

Strategies to address this included objective research methods that objectively assessed the researcher's assumptions.

It is suggested that based on the data collected, the evidence informing the development of the outcomes is compelling. Nonetheless, some limitations should be borne in mind. This limitations section contains three steps:

1. Identifying the limitations
2. Explaining how the limitations have impacted the study
3. Presenting a proposed direction for future studies and alternatives (Morgado et al. 2018).

The primary limitation relates to the contribution to theory. While the scope and aim of the study were to address a gap in the literature related to organisational project management practice, enough evidence to propose a generalisation of findings cannot strictly be claimed. While the study is justifiably exploratory, further research is required to confirm the insights in order to justify theoretical advancement. Future research could further examine the application of each of the P3MCIM Types 1 and 2 to develop case studies emphasising those components defined as 'behavioural'. In addition, the areas of P3M leadership and teams, anticipation and uncertainty management, succession planning and professional development programs merit further research.

9.4.1 METHODOLOGICAL LIMITATIONS

The following are potential methodological issues that could impact the conclusions drawn by the researcher.

9.4.1.1 PROBLEMS WITH SAMPLE AND SELECTION

Sampling errors occur when a probability sampling method selects a sample, but that sample does not reflect the general population or appropriate population concerned. This situation results in study limitations known as 'sample bias' or 'selection bias.' For example, this study conducted two surveys to obtain research results, where the participants were asked to respond to the survey questions. Their selection by the researcher limited the choice of participants to informed respondents, whereas a future study might survey a broader range of general managers and program and project managers.

While the research design and data analysis included strategies to control for researcher bias, the study was partly embedded in the researcher's professional practice. As such, bias may be apparent in some of the analyses. However, the mixed method nature of the study and efforts to triangulate the findings where possible did mitigate bias. Further, it is argued that while bias

may be apparent in parts, the deep practice knowledge of the researcher likely enriched the study more than detracted from the results. This is reflected in literature relevant to 'insider researchers' such as that by Workman (2008)

9.4.1.2 METHODS/INSTRUMENTS/TECHNIQUES USED TO COLLECT THE DATA

How the data were collected or how this study measured variables may have limited the ability to analyse the results thoroughly. For example, the survey questions could have been developed from another viable perspective (additional researchers). This research did not involve other (more experienced) researchers, and this is a recognised deficiency.

9.4.1.3 LIMITED ACCESS TO DATA

The research involved surveying participants and organisations, which posed constraints of time and availability to access these respondents. In future, the researcher needs to carefully program timeframes with contingencies to better forecast requirements and return dates. Also, face-to-face meetings with respondents and organisations were limited by time, cost and availability, including COVID considerations. Nevertheless, this enabled the researcher to use audio-visual technology. Future studies could conduct an effective program of interviews with participants and organisations using this technology. This limitation did not adversely impact the quality of the data obtained.

9.5   ORIGINAL CONTRIBUTION TO KNOWLEDGE

Work-based study and research are pragmatic by nature. The USQ DPRS program focuses on contributing original knowledge to professional practice, including national and international standards and the Australian Qualifications Framework. It also seeks to make contributions to the researcher's development as a scholarly professional. The point of departure for work-based research is to be problem-focused and to adopt a pragmatism perspective. Pragmatism suggests a mixed methods research design combining the depth of meaning gained by qualitative enquiry and the breadth of empirical insights gained from using qualitative statistical analysis.

This study has facilitated original knowledge contributions for the discipline and practice of P3M and associated fields of study. It has provided a suggested organisational portfolio, program and project management (OP3M) improvement model in three parts. It has also followed an approach that aligns academic research with workplace learning.

9.5.1 CONTRIBUTIONS TO THE RESEARCHER'S PROFESSIONAL DEVELOPMENT

With over fifty years' experience in the workforce, the concept of professional studies appealed to the researcher as a pathway for self-reflection and to identify opportunities for further personal and professional development. By undertaking learner-driven research in a topic of cross-industry based interest, the researcher has contributed strategically to the project management profession.

From a personal and professional point of view, the researcher considers that there has been considerable change. First, no information was formally reported throughout the study unless a notable third party could be justified or refuted. The lessons learnt from this technique will remain solidly with the researcher in the future. Second, the breadth of subject matter and the associated task of aiming for excellence in academic writing have strengthened the researcher's skill set and heightened his awareness of the importance of critically analysing comments and opinions objectively. Third, the perseverance involved in completing this research has maintained the researcher's commitment to the professional discipline of OP3M. It has also proven to be a solid base for future research. This study has also resulted in the researcher being better equipped to consult and advise organisations to pursue improved OP3M.

9.5.2 CONTRIBUTIONS TO PROFESSIONAL PRACTICE KNOWLEDGE

The literature review discussed the practices and related disciplines associated with OP3M. It discussed how a traditional view of project management is changing. It also clarified how maturity models, although well-intentioned, do not constitute improvement models. It suggested that OP3M models should include business development models, requiring an integrated improvement approach for overall business results and outcomes.

This study highlighted issues affecting business driven OP3M management and the achievement of corporate results. The study used the literature to develop a research design that facilitated analysis of environmental factors relevant to a prototype, then a two-type and combined model for improvement. The outcome is a comprehensive analysis of original and secondary data to assess the efficiency and effectiveness of OP3M. The evidence base was then used to develop an alternate, refined model. The model can be applied to any organisation, resulting in a practice-based legacy for P3M managers and the broader community.

9.5.3 CONTRIBUTIONS TO SCHOLARSHIP

This study has contributed to academic knowledge by recommending a model for OP3M improvement by accessing a wide range of practitioners and professionals. It is not, by definition, a maturity model, although elements of previous models have been included. It has also provided a summary of comments in the field of OP3M by notable authors and professional project management institutes.

As evidenced in this study and identified by the researcher as absent from the literature, several themes merit future research. These include the influence of generational change on corporate decision-making, cultural competence and its measurement in organisational project management, strategic succession planning and professional development of P3M managers, psychometric analysis of P3M appointments, and P3M leadership in complex and cross-cultural environments. More importantly, this study suggests that the socio-political contexts and the behavioural side of work based OP3M warrant urgent attention.

9.6   FUTURE RESEARCH

Based on the findings of this study, the following research and activities are proposed.

First, most professional development in project management has centred on cognitive domain learning (skills and knowledge). A significant finding of this study is that further research is needed in the affective learning domain (attitudinal and behavioural skills). Programs featuring these skills need to emphasise education and training programs for professional P3M managers. The work of Bolin, Khramtsova and Saarnio (2005) discusses stimulating authentic learning as a balance between Bloom's taxonomy of cognitive and affective learning. As suggested by the professional development activities listed earlier in this study, the notion of 'application to the work context' emphasises ' authentic' as meaning workplace-oriented content and assignments. Likewise, Hyland (2010) argues that mindfulness, adult learning and therapeutic education programs integrate the cognitive and affective learning domains. Hyland argues that the therapeutic function, the affective domain of learning, is more valuable and significant than is acknowledged.

Similarly, the Wood, Taylor, Atkins Johnston (2018) study has suggested that learning through affective and cognitive domains can provide more profound opportunities for students to experience critical and transformative democratic engagement. And the Zaky (2019) study addresses the importance of infield education for endorsing adult learners' affective domain to

accelerate transformative learning with their selected discipline. Zaky reviews the literature to investigate the impact of students' learned knowledge transference from classrooms to their experiential learning contexts. It is not a simple process of application but a re-contextualisation of the previously learned knowledge in the incorporation of problem- and project-based learning and work-based learning; a convergence between the world of work and academic knowledge. Porath (2020) explores the affective aspects of learning such as engagement, choice, courtesy and personal response. The author states that, in considering effective teaching, there is a need to consider both the cognitive and affective factors of learning and select appropriate pedagogy to support the learning of the whole person.

Second, an emphasis on complementary soft skills for P3M managers (exhibited by the JKR case study) warrants research and application. Pant and Baroudi (2008) provide an insight into the importance of human skills in project management success and the apparent lack of emphasis placed on this within the context of university education. Their discussion concerns the viewpoints of notable authors regarding the human or 'soft' skills necessary to manage projects. They suggest that educators within this discipline should recognise the importance of incorporating greater human skills aspects into their educational programs. Ahadzie, Proverbs and Olomolaiye (2008) note that competency-based measures are increasingly being recognised as the most viable option for encouraging the continuing professional development (CPD) of construction project managers (CPMs). They state that an emerging view from the human resource management genre is that a robust approach for developing a more rigorous understanding of these measures is to distinguish contextual performance behaviours from task performance behaviours. They argue that the contextual task framework allows for a more fine-grained analysis of managerial behaviour, its effects and measurement.

Furthermore, Lent and Pinkowska (2012) investigate the complexity in mapping recognised skills to the human factors processes of the L-Timer® project management system and assessment of skills maturity following Blooms' taxonomy. At the same time, the relatively shallow insight of practitioners and researchers into soft skills awareness is exposed. In comparison, Zuo et al. (2018) contend that behavioural competencies can be grouped into two main types: task performance behaviours and contextual performance behaviours. While the former contributes to the technical functions and is job-specific, contextual behaviours refer to job-related acts that assist organisational effectiveness. Their study highlights that general skills provide much of the foundation for developing project management skills, including leading, communicating, negotiating and problem-solving. And, Ballesteros-Sánchez, Ortiz-Marcos and Rodríguez-Rivero (2019) indicate that personal competencies are increasingly reliable

predictors of successful project managers. Their conclusions reveal interesting insights, such as the finding that executive manager coaching has the most significant impact on behaviours related to leading, managing and finding strategies for coping with challenging situations.

More recently, Magano et al. (2020) reported a significant correlation between the most highlighted Generation Z traits and essential project management soft skills, pointing to Generation Z as a promissory asset in the project management field. They suggest the need for further research on educational approaches and re-thinking and targeting education and training policies that could strengthen Generation Z soft skills. Their results also suggest reflections about whether the Gen Zers' traits fit the PM competencies sought by organisations. A study of this type indicates that the workforce that was well served by traditional programs for learning is not the same for a technologically advanced workforce of the immediate future and suggests that a rapid change in learning practices is imminent and necessary.

Third, affective domain learning and soft skills development complement a supportive, servant and distributed leadership strategy for P3M managers, mentioned previously in the professional development section of this study. With the imposition of the COVID pandemic, a change in leadership strategies has become pertinent. The researcher suggests that McGregor's Theory X and Theory Y, Maslow's hierarchy of needs, McClelland's achievement model, Hertzberg's motivation theory, Hersey and Blanchard's situational leadership, Adair's leadership strategies and the Raven and French's power indicators are still highly desirable approaches and techniques for promoting leadership in P3M managers.

Still, the leadership of virtual teams and multiple generations requires attention. Prominent in this consideration is generational, cultural change evidenced by the X, Y (Millennials), Z (Post-Millennials) and Alpha generations. Their view of the world and its leadership differs from the conventional, traditional (Boomer) 20th Century phenomenon. A starting point for future research in this area, as it affects P3M leadership, maybe works such as Smith, Roebuck and Elhaddaoui (2016). To acquire and retain talented leaders, they conclude that organisations should explore and embrace new strategies that support employees to achieve work-life balance. Others include Çizgen Bako (2018), who aimed to determine how leadership style choice differs amongst the four generations (Baby Boomers, Generations X, Generation Y and Generation Z). Terry (2015) identified specific attributes for these four generations and argues that workforce supervisors need to consider these characteristics to maximise worker engagement, employment, satisfaction, leadership and longevity. Mahmoud et al. (2020) researched generational differences in valuing the sources of employees' overall motivation in the workplace across Generation X, Generation Y and Generation Z to assist

managers in making employment decisions and maintaining multi-generational staff. They suggest that organisations with diverse generational compositions should adopt new measures of workplace agility to survive major disruptions (e.g., the COVID-19 pandemic) by considering a more qualified appraisal of their workforce.

As a result of these findings, prominent future research might include exploring how multi-generational attitudes affect an OP3M managerial environment to complement the suggested P3MCIM model.

9.7   CONCLUSION

This study has attempted to address and achieve two objectives. The first was to build on the researcher's existing industry expertise to analyse current project management maturity models' strengths and weaknesses, supported by P3M competency employed for organisational change in project management in everyday practice. The second was to describe and further develop an organisational improvement model and explain how it differs from Australia's current approach by adding benefits and applying this model to satisfy business needs in a world of uncertainty and complexity.

Even though sufficient research has resulted in an improvement model that has been evaluated with five current organisations, it would benefit the findings of this study if it were further assessed for its veracity and value in various other organisations and contexts. This extension of the study will serve two purposes: to prove or disprove the suggested model and prove the model's use as a consultancy technique that will always be adaptive. At the same time, it rests with learning institutions to promote behavioural skills programs to support effective management in improving integrated organisational portfolio, program and project management.

9.8   A PERSPECTIVE ON PROJECT MANAGEMENT RESEARCH AND PRACTICE: ADAPTED FROM PROJECT MANAGEMENT RESEARCH - THE LONG JOURNEY

The latest work by Dalcher (2017b) covers an enormous array of topics and areas (related to this study) by contributors highlighting the diversity and vitality of project management research and practice and the need to widen the perspective of what may be encompassed by project management and leadership. The author states that project management is a core competency required to deliver change measured to achieve desired outcomes with associated

benefits.

Furthermore, Dalcher suggests that projects are increasingly viewed as managing society's change efforts. Project management is called upon to address cross-functional, organisational and societal boundaries, and manage the inherent complexity and uncertainty required to bring about a new reality. One of the key themes that emerge from the discussions in the individual chapters is the need to engage with uncertainty, complexity and ambiguity. Project managers often function as change agents, translating wish, fantasy and fancy into a delivered reality. Managers need to balance priorities, needs and potential in a world characterised by demanding constraints, growing expectations and conflicting trade-offs.

Dalcher contends that project managers' continuing ability to deliver, transform and innovate make their achievements a triumph, proving that project management can become the art of the possible. Nevertheless, Dalcher states that project managers are continually challenged to deliver more with less while improving project delivery's track record. Fresh insights into how people and teams work, lead in complex and dynamic environments and improve delivery capability continue to emerge in different areas and domains.

Dalcher stresses that another theme that emerges is the need to move from managing to leading. Managing is the hallmark of a more defined and more control-oriented strategy, while leadership points to a different and more varied skill set. Lack of control and a greater reliance on a network of participants requires a more organic approach that emphasises influence, participation and collaboration. Therefore, gradual exploration can be guided by vision and purpose that can help form and confirm the direction of travel. Success in the future will require a better understanding of the context and deeper engagement with the business. It will also imply an acute awareness of different values and preferences, with more full circles of stakeholders' communities arranged in complex and interconnected ecologies.

Seminally, the author concludes that, 'as we learn to cope with a world that is more volatile, multifaceted and interconnected, yet risky, we need to hone our skills and capabilities' (Dalcher 2017b, p. 277) . The challenge suggested with interconnectedness in a changing and volatile world, is one of the critical features of an adaptable model for OP3M improvement.

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APPENDICES

APPENDIX A: P3MCIM TOOLS AND TEMPLATES TYPE 1 DOCUMENTS

The following documents used in Type 1 are not included as part of this study. They are listed here to provide the reader with the type of documentation used by the P3MCIM:

1. Change Initiative Management Plan
2. Stakeholder Analysis and Management Matrix
3. SPIN Report and Initiative Management Plan for OPM
4. Project Methodology Management Matrix (PMMM)
5. P3M Job Descriptions
6. Project Management Workshops Programs
7. Workshops Evaluation Reports
8. P3M Participant Coaching Report
9. Program and Project Health Checks
10. Return on Investment Report
11. Business Benefits Realisation Plan and Report.

APPENDIX B: P3MCIM TOOLS AND TEMPLATES TYPE 2 DOCUMENTS

The following documents used in Type 2 are not included as part of this study. They are listed here to provide the reader with the type of documentation used by the P3MCIM:

1. Change Initiative Management Plan
2. OPM Strategic Questions and Strategic Snapshot
3. A Pipeline of Programs and Projects
4. PMO Charter and Job Roles
5. Change Management Plan
6. Pathways for P3M Managers
7. Cultural Competence Program
8. Steering Committee Workshop Program
9. Executive Coaching Program
10. KPI Reviews and Reports
11. Return on Investment
12. Benefits Realisation Plan.

APPENDIX C: FURTHER EXPLANATION OF P3MCIM TYPE 1

1.   Initiation and Management Plan

Type 1 begins with a plan to proceed on an appropriate level of investigation and change in the organisation, resulting in improved performance and better results for programs and projects. The starting point is developing a plan to create an agreement to proceed and is authorised by crucial managers. The plan cites all model components, with detail planning for only one component at a time. For example, the P3M Analysis and Initial Maturity Review and Report have their own set of activities, responsibilities and completion dates. Managers then decide on the extent and timing of the following steps, their sequence, and the detail (scope, time, cost and quality) assigned to each.

2.   P3M Analysis and Initial Maturity Review and Report

This step guides the rest of the model. It requires business executives to sign on to what is to be undertaken, by whom, over what period, to an indicative budget and an agreed quality. Many organisations do not take this step with the care that it deserves. Ideally, the review and report should be undertaken by an external consultant known and trusted by the organisation. Furthermore, the investigation should follow the **SPIN** acronym, a series of questions used widely in marketing, as follows:

Situation (S). The situation in which the organisation finds itself needs a thorough exploration to determine a reason for the investigation. The results will establish the rationale for a P3M improvement initiative. For example:

1. Program and project results may not be accepted or are erratic
2. Methodologies' procedures and toolsets are not appropriate or used
3. There is no uniform approach to P3M
4. Staff are not competent in P3M
5. Staff are individually competent in P3M, but their managers and teams misunderstand them
6. Executives have little understanding of P3M
7. There is no P3M culture and leadership
8. The business fails because of poor contract management.

Problems (P). Because of the situation listed above, there are several fundamental problems to be identified, such as:

1. Clients are regularly dissatisfied with products and services generated through programs and projects
2. There are regular legal disputes
3. Staff retention is difficult; leadership resorts to directive rather than inclusive approaches to staff and teams
4. Decisions seem to be regularly incorrect; staff cover-up the actual status of projects
5. There are constant time and cost overruns
6. Business risks are inappropriately taken at the project level
7. Poor public relations and press reports happen all too often
8. Programs and projects are scoped poorly, resulting in adverse outcomes.

A thorough list of these types of problems needs to be drawn to ascertain the actual situation.

Implications (I). As a result of the above information, the organisation needs to qualify, and quantify, what will happen if this situation remains, and these problems continue to arise. For example:

1. Strategic objectives will not be realised
2. The annual business plan will not be met
3. The business may need to be downsized or restructured
4. Staff will need to be released or differently contracted to work
5. Pay cuts will be the norm
6. Any bonus or incentive scheme will perish
7. The prestige of the organisation will diminish significantly
8. The organisation will lose market share
9. Or the organisation will be placed under administration.

These implications need to impact the organisation and each level of manager, teams and groups.

Need (N). The three analysis points above should indicate what is needed for executive and business managers, program, project and contract managers, their teams and administrators. From an OP3M viewpoint, it is not one that has a single or easy solution.

Therefore, the analysis and ensuing SPIN report becomes the starting point for interaction with key stakeholders by the external consultant. More importantly, it triggers the isolation of needs for capability improvement. So, the actual requirements for the initiative are determined by the business managers and their staff.

The external consultant's role is to indicate those functions of P3M that need to be considered against national or international best-practice standards in project management, in the organisations' industry and context. To this end, a series of strategic questions are available as a result of this study (see reference below). As a result, further analysis of the P3M environment will state what currently exists in the organisation and a gap analysis of the functions, practices, and toolsets needed and agreed by the business.

3. Develop a P3M System: Methodologies, Procedures and Toolsets

Depending upon the system level that already exists for P3M in the target organisation, there may be little or much to do. With an immature organisation, this usually means initiating a brand-new set of methodologies, procedures and toolsets. However, the theme of this study has been to establish the need and inclusion of contextualisation. Therefore, the researcher does not recommend a ready-made (off-the-shelf) approach after decades of practice. Moreover, suppose a system is purchased with the promise of adaptability. In that case, the consultancy costs for orientation and contextualisation may be prohibitive, with the eventual end product not satisfying the business or its managers.

Therefore, the model's implementation relies on crucial stakeholder engagement directly involved in P3M. It is this group that will formulate the following: program, project and contract cycles; their streams (e.g., business improvement, revenue, capital enhancement, ITC, HR management, events management, product delivery, research and innovation projects, etc.); their phases and activities, including pre- and post-cycle; procedures and processes (work instructions); acceptable toolsets/templates/reports. In this way, the managers will own the P3M system and its culture.

A Project Management Methodology Matrix (PMMM) tracks the cycle for all projects and streams of projects based on a standardised approach. Of paramount importance with the development of a PMMM is that it includes and uses an integration of project and operational procedures commonly applied across the corporation. A common and uniform application is another unique feature of the P3MCIM. It binds all parts, directorates, and agencies into a familiar but contextualised framework for project management

4.   Develop P3M Competency-Based Job Descriptions and Agreements

The previous step included what to do, how to do it, and what to use to employ an agreed P3M framework. The system will not survive unless staff have the knowledge, skills and behaviours (attitudes) to be competent in their jobs. This part of a contextualised solution does not support the use of conventional job statements. Instead, it is based on the national and international standards for P3M reported in Chapter 2. In particular, the roles of a portfolio (business manager), program, project, contract, event, key initiative manager and project team members need to be carefully articulated against performance criteria, a range of contexts, and evidence. These competencies form the basis of their performance management arrangement in the organisation. Of necessity, job descriptions will also include those competencies appropriate to their industry specialisation and skillsets. This change becomes not just an HR activity for initial engagement in the organisation. It should usually be agreed upon before the appointment of dedicated programs and projects, and by senior managers who will support incumbents. Once again, these descriptions and agreements are not widely practised, but they are vital to a corporate improvement model's success.

5.   Develop P3M Customised Learning Interventions

The key reason for dedicated P3M competency-based job descriptions is that they primarily include all knowledge and skillsets required for a project management professional. It can be argued that there are many more behaviours needed for those appointed to project staff positions. As a baseline, the descriptions will provide business managers with a reasonable security level for employment, knowing that gaps can be easily articulated through practice and performance management as work-based learning.

Choosing learning interventions means gaps can be addressed but obtaining certification levels (professional standards) and qualifications against national training or education standards is possible. However, any learning intervention could or should aim to attain the level of competence while meeting the business requirement and results of the job; in this case, portfolio, program and project agreed outcomes. Therefore, as suggested earlier in Chapter 2 more fully, the 70:20:10 approach applies. The rationale is that the P3M manager learns and becomes certified/qualified while at the same time producing the best possible return on investment for the organisation.

The choice of learning interventions was described in Chapter 2. As suggested by the researcher's experience, the most effective is an Executive Committee, Program Team, Project Team, Initiative Team or Event Team live workshopping their projects against project

management's recognised functions using their contextualised methodology. This situated work-based learning means that project staff concentrate on the job at hand (selected priority programs and projects) while simultaneously learning and adopting best practices to their circumstance. (See Appendix A Tools and Templates No 5: Example P3M Workshop Program). The workshop's result is to embed the new PM system and involve direct training and application for that purpose. It is also based on best practice competency standards for P3M and provides the platform for further professional studies and qualifications.

The type of manager (to be developed in the P3MCIM pathways) is that of an Advanced Project Practitioner (APP) discussed in a recent paper by Fergusson, Allred, Dux and Muianga (2018) whereby the manager achieves a level of learning that guides and assists in organisational performance.

6. Live Program and Project Workshops and Evaluations

This step has a dual purpose. It is both a learning acquisition and professional development activity, and a thorough investigation in planning and management for a program or project and can be informal or formal. For example, workshops for projects are usually conducted at critical milestones: concept, design, development phases, pre-implementation, at or after project milestones, and completion initiation. These are included in a program or project management plan but remain scheduled as internal project work. More formal workshops are usually conducted by highly qualified certified practitioners who are external to the organisation to guide staff learning and development. More importantly, they can add to the development and success of real, live programs and projects.

A facilitator's choice is critical to these workshops' success and the viability of programs and projects because the facilitator has a dual role: a teacher and a consultant/business coach. Importantly each workshop needs to have a formal report concerning whether the workshop's objectives were achieved, the list of programs and projects workshopped, value to the participants, value to the organisation's programs and projects, and lessons learnt and suggestions for improvement.

The workshop program also includes a register of those participants who will be followed up with individual coaching (usually everyone). This report needs to be distributed to the organisation's convenor as well as the appropriate business managers.

Additionally, individuals may be involved in external academic and vocational education and training (VET) programs. If so, they are recommended to undertake an approved

business-related P3M-related case study as part of the selected program. In this way, a business manager who has approved the funding can assess a ROI.

7.   Coaching and Individual Reports to Business Managers

Four to six weeks after the live workshop, participants are interviewed in their workplace about how the learning event has impacted their approach to project management in their daily lives. It gives them a chance to consolidate learning or query those skills and knowledge requiring attention. Once again, the qualified facilitator can provide individual and team solutions and practical advice on how the program or project may be better planned or managed. It is not unusual in this circumstance for the facilitator to provide additional guidance for the participant on a wide range of procedural and behavioural matters associated with the work. The participants' convener and business manager report the encounter that indicates progress and may recommend a pathway for further professional development. The participant must countersign the report.

8.   Mentoring/Organisational Issues

This area is strongly recommended; however, it may well be part of overall performance management. It involves a senior manager who is very experienced in P3M being assigned to program and project staff to give further personal encouragement and advice and help solve organisational issues. It is another way of involving senior management to progress the corporate improvement process for project management. Some organisations employ professional mentors for this activity, especially for senior managers themselves.

9.   Program and Project Health Checks

The following kind of performance management in the model is employing a program and project health check system. As articulated in Chapter 2, a health check system enables the identification of projects in poor health; provides a diagnosis of their particular problems at project, program and organisational levels; and provides the development of remedies to fix them as an action plan. PHCs should be just one technique in the toolkit to overcome problems related to project delivery. However, PHCs should complement other organisational initiatives related to the successful delivery of programs and projects, most notably, a robust Project Management System (PMS), competency standards and assessment for program and project managers, Project Management Tools (PM Tools), and a Project Management Methodology Matrix (PMMM). This latter technique involves streaming project types across the organisation.

Therefore, in OPM, a program or project health check is part of an integrated toolset. Key Features of Health Checks are explained below.

The Basis for the Methodology: Constructing the Health Check Questionnaire

To assess a program or project using accepted best practices, the health check questionnaire is developed and based on the conventions of the following internationally recognised standards:

- AS ISO 21500:2016 Guidance on Project Management – SAI Global

- A Guide to the Project Management Body of Knowledge - Project Management Institute USA, (PMBOK© Guide) Sixth Ed. 2017.

Project management functions (e.g., scope, time, cost, quality, risk, communications, human resources, procurement, integration and stakeholder management) and other vital aspects (e.g., WH&S, environment management) are included in the checklist. It provides the core questions and areas that will be evaluated to determine the program or project status and customise it to its industry and context:

When to Undertake a Health Check. A Health Check is appropriate when a project's status is questionable or triggered by a cyclical review decision (e.g., key milestones or Executive Committee reporting). A Health Check is recommended at each significant or complex project phase. It ensures the project has successfully transitioned from the concept, development or procurement phases and sets an action plan to treat any issues created earlier in the project timeline by ensuring that they are addressed as soon as possible. This check may be conducted by the program or project team for internal team status reporting.

The initial stage of implementation. A Health Check is recommended within the first six months of a project's commencement, irrespective of the project phase. This check will provide project managers with a guide to the management rigour to be applied to the project (especially if it is complex) and allow the PHC to be a valuable and friendly PM tool. In the second half of the implementation phase, a second health check is recommended to ensure the project meets its completion schedule.

The Project Doctor. A PHC is recommended to be conducted by an experienced project manager (i.e., the project doctor) at AIPM Levels CPPM, SCPPM or CPDD, or international professional equivalent. The project doctor must be sourced from outside the project environment being examined. The project doctor should appreciate the organisation's procedures and work instructions and the expectations of executive management. It is advantageous but not mandatory that the project doctor has experience related to the project field and context. The project doctor nominated can also operate with more independence if an independent professional is engaged and is assisted by an organisational nominee of the business familiar with the project environment but not attached to the project's management structure.

Reporting on Health Checks. Several levels of reporting include:

At Program or Project Team Level. This level of investigation is necessarily an internal health check initiated and for the team. It is not necessarily reported to the client or senior management work's status, where issues are raised, and decisions are made to support or close the project. It is primarily internal and confidential.

At Major Milestone Level. These reports are usually in a form that enables senior management to be aware of issues beyond the program's ability or project team to resolve where support is needed internally.

At Client/Community Level. This level is perhaps the most challenging status report as it must be accurate and clear to a wide range of stakeholders that success has been achieved, but there are potential issues that need resolution. In this case, the data collected fully must corroborate an accurate view of the program or project. Therefore, the health check criteria must be agreed upon and customised to the potential concerns/risks to the client/community environment.

In conclusion, the Health Check System needs to be a formal component of the P3MCIM. However, it needs to be sufficiently flexible for status reporting and executive briefings. It provides an in-depth view of the program or project and highlights its status for failure or success early.

10.   Return on Investment/Benefits Realisation

From a business point of view, the most crucial step in the P3MCIM model is to evaluate whether the PM System, structured professional development and Health Check System produce program and project results envisaged by the business. Because the P3MCIM model is based on business value, capability and sustainability, calculating return on investment and benefits realisation is mandatory. The researcher argued in Chapter 2 that the literature indicated that business managers want to make those calculations.

First, managers can report on ROI at the program and project level. The ROI is not merely a calculation of whether the program or project met its financial goals. It is more detailed and uses the functions of project management as indicators, e.g., how a well-defined scope enabled clear objectives to be written and agreed, that were both qualifiable and quantifiable; how that well-defined scope helped transparent resource allocation; how efficiency in scheduling and rescheduling saved overall project time, therefore costs and profit; how a detailed work breakdown structure provided clear earned value analysis against time and cost at an appropriate level; how a quality review by the PMO team rather than an audit by the QA manager produced helpful advice and solutions; how a Monte Carlo risk management analysis and strategy quantitatively mitigated key risks in time and cost; how an overarching responsibility management matrix allowed for more flexible resource distribution for critical tasks; and how procurement tracking and control allowed for on-time delivery of goods and services.

APPENDIX D: FURTHER EXPLANATION OF TYPE 2

1.   P3M Analysis of Initial Maturity and Report (Included in the Change Management Strategy)

Like Type 1, this step guides the model to assist business executives "sign on" to what is to be undertaken, by whom, over what period, to an indicative budget and an agreed quality. Many organisations do not take this step with the care that it deserves. It should be undertaken by an external consultant known and trusted by the organisation.

Also, like Type 1, a SPIN report (defined above) becomes the starting point for interaction with key stakeholders by the external consultant. More importantly, it triggers the isolation of needs for capability improvement. The business managers and their staff determine the initiative's actual requirements, but this more mature organisation may include clients and suppliers (bound by healthy relationships and contracts). The external consultant's role is to indicate those functions of P3M that need to be considered against national or international best practices in project management in the organisation's industry and context. To this end, a similar series of strategic questions are available as a result of this study. As a result, further analysis of the P3M environment will state what currently exists in the organisation and a gap analysis of those functions/practices/toolsets needed and agreed by the business or businesses (see Appendix B Tools and Templates No 1 Strategic Business Questions and Strategic Snapshot).

2.   Pipeline of Programs and Projects with Business Benefits

Many mature organisations usually have a well-defined pipeline of programs and projects that link the business's strategic intent. For example, Australian Government Departments use a Portfolio Budget Statement (PBS), a highly sophisticated dissection of the Ministry portfolio's expected outputs and outcomes. This document is compiled and agreed upon between Treasury, Finance and the Department. It includes strategic forecasts, streams of programs, major projects, and KPIs intended to measure program and business benefits. Unfortunately, they are lengthy documents requiring annual scoping and definition for programs and projects by public service staff. The Pipeline is usually determined through marketing and sales in a commercial setting, where a 'funnel' system is employed. The funnel grades prospective work from an opportunity to a prospect, a qualified prospect, the proposal phase, the negotiation phase, and eventually the signed contract.

Nevertheless, a pipeline needs to exist for tracking and portfolio and program management to be effective in some form. One method of undertaking this analysis and tracking

its progress is provided (see Appendix B Tools and Templates No 2 Pipeline of Programs and Projects).

3.   Enterprise/Program Management Office (EPMO or PMO), Alternatively Named Centre of Excellence (COE)

More mature organisations will have or have had PMOs or COEs. The literature in Chapter 2 indicated that these devices may or may not be successful. The research suggests that a mature organisation will have a central repository for its methodologies, procedures, and program and project management toolsets. Perry (2013) suggests that successful PMOs solidify and deliver on organisational mission, goals and objectives. He confirms that they are business-driven rather than theory-driven, embrace flexibility rather than managing conformance, establish an architecture rather than implementing a tool, keep executive reporting simple, provide leadership as a servant-leader rather than a subject matter expert, create high-performance teams, offer a practical roadmap for programs and projects, serve the needs of the business, adopt a value-based approach, form an execution-oriented project environment, emphasise the value of proper stakeholder management and situational project management leadership, and assist in how to transform the P3M culture.

The key to making a PMO or COE work is the organisation's charter and mandate. However, it also relies on the PMO staff's knowledge, skills, behaviour and experience to work as a team. These appointments are for highly skilled and qualified personnel, not beginners (see Appendix B Tools and Templates).

4.   P3M Change Management Strategy

Linked closely to the function of a PMO or COE is the management of innovation and change. For example, many mature organisations invest in significant research and innovation to be market leaders. As a result, new products and services are introduced both commercially and not-for-profit. Any new product or service will introduce innovation and change. Therefore, in a P3M environment, change and its management are critical. As stated in Phase 1, change management needs to be included in every program or project plan. As stated in the literature review, however, project management's change concentrates on a shift in the program or project itself and not necessarily to the outcome of introducing a new product or service. For example, introducing a new automated ticketing system is more a behavioural/change management project than introducing and innovating new technology. This means that the objectives for

programs and projects must clearly articulate which outcome has priority: new technology innovation or the expected behavioural result.

So, integrating innovation and change management with P3M rests squarely with portfolio and program managers. In other words, as articulated early in Chapter 2, the problem revolves around a matter of language. In a project that results in structural, organisational, cultural innovation and change, it would be better to use appropriate wording, e.g., a Change Management Plan for a New Ticketing System. The plan maintains the structure and standards of P3M, but its language promotes innovation and change enablement behaviours (see Appendix B Tools and Templates No 4 Change Management Plan).

It follows, therefore, that in a mature organisation, P3M managers and PMO personnel are significant change managers, and it is suggested that they need to be so qualified (to be discussed below).

5. Competency-Based Job Descriptions, Allocation of Work and Professional Development Pathways

Type 2 mostly follows the recommendations provided in Type 1 for the professional development of P3M managers. Once again, it relies on detailed competency-based job descriptions, but KPIs and related performance incentives are usually more pronounced in a mature organisation. Also appropriate for P3M management in mature organisations is allocating work for more complicated and complex projects. As a result, the development and retention of key personnel is vital as it is linked to the success of program and project outcomes and perception by the market. It is not unusual to guide a P3M Professional and Academic Development Pathways database or similar mechanism (see Appendix B Tools and Templates No 5 Pathways for P3M Managers).

6. Cultural Competence in P3M; Not Included in the Model but Part of the Change Management Strategy

This topic is an all-encompassing step in the process of corporate improvement in P3M. It does not fit precisely into a stream of activity, but it does result in a stream of consciousness. In other words, all of the other components of the P3MCIM contribute to P3M cultural competence; i.e., 'the way we do things around here'. Of note, in recent times, is the initiative by the Australian Government to promote cross-cultural competence in our community, with online programs available, such as the 2018 Cultural Competence Program developed by SBS and Multicultural NSW and International Education Services (IES). This form of general and

professional expertise is highly pertinent in the P3M environment, particularly as the working environment becomes virtual and offshore. For those organisations, usually more mature, who deal with international service providers and clients, cross-cultural competence expertise is necessary. This study suggests that using uniform and standard P3M methodologies, procedures, toolsets, and applications provides a suitable platform for establishing a work culture and emphasises relationship management. The development of this expertise relies on leadership at all levels of management and administration (see Appendix B Tools and Templates No 6 Online Reference to Cultural Competence Program).

7.   Senior Executive Briefings (Coaching and Pathways)

As described above and in Chapter 2, executive briefings and coaching provide a valuable and current source of growing assistance to business managers. Although mostly hands-on and immediately geared to discuss and solve business and P3M issues, a briefing or coaching session needs to be structured to complement the executives' roles and responsibilities. Therefore, it needs to be included in the professional and academic development pathways database or similar mechanism. Also necessary in this phase is Steering/Executive Committees coaching. Once again, these workshops are based on the organisation's P3M framework and involve working on live programs and projects (see Appendix B Tools and Templates No 7 Steering Committee Workshop Program).

8.   Program/Project Health Checks

The rationale for, and application of, health checks are similar to those of Type 1. However, the critical reason for examining a program or major project's health for mature organisations is to investigate the organisational Framework for P3M and its integration with business processes. They become mostly an examination of capability and efficiency. The following report will most likely result in organisational change and scope a change project for consideration by the executive.

9.   KPI Business and P3M Reviews Includes Maturity Assessment

This step in applying the model in a real-world context is the most vital and far-reaching in reviewing an organisation's competence and capability in P3M and its sustainability. Business and P3M performance criteria are agreed upon and formulated by business managers and contextualised to their industry and business environment. Of particular note in this step is the introduction of business KPIs and project/contracting KPIs. An external, trusted and capable

facilitator conducts a capability review on an annual or biennial basis for the organisation (or a business unit or company within the organisation). It is how an executive or management team chart both their P3M and business capability. The mechanism includes a five-level maturity model linked to each criterion. Therefore, as required, an organisational maturity review is conducted at the same time (see Appendix B Tools and Templates No 8 KPI Reviews and Reports).

10.   Benefits/ROI and Board Reporting

From a business point of view, perhaps the most appropriate step in the P3MCIM is to prove that the P3M System and improvement model produces results envisaged by the business, as discussed above. Therefore, incorporated in the 'Pipeline' identifies outputs and intended short- and long-term results. The researcher argued in Chapter 2 that the literature indicated that business managers need to make those calculations. This study suggests two ways to achieve this, as described for Type 1, but with a difference, for a more mature organisation in Type 2.

First, portfolio and program levels, it is mandatory to have managers report on ROI. Conventionally, this involves calculating whether the portfolio or program has met its financial goals or, for government department, that the money has been spent. This practice is out of date, and it requires a more comprehensive approach.

As suggested for Type 1, using the functions of project management as indicators may well be appropriate. For example, how a well-defined scope enabled clear objectives that were both quantifiable and quantifiable, how that well-defined scope enabled explicit resource allocation, how efficiency in scheduling and rescheduling saved overall project time and therefore costs and profit, how a detailed work breakdown structure provided clear earned value analysis against time and cost at an appropriate level, how a quality review by the PMO team rather than an audit by the QA manager produced helpful advice and solutions, how a Monte Carlo risk management analysis and strategy quantitatively mitigated key risks in time and cost, how an overarching responsibility management matrix allowed for more flexible resource distribution for critical tasks, how procurement tracking and control allowed for on-time delivery of goods and services, etc. (See reference Appendix B No 9 example ROI).

Second, as the portfolio and program dictate, at the business level, it is possible to incorporate a business benefits plan at the beginning of the cycle and have that carried through the portfolio, program or project by the business owner. This situation allows the business owner, usually the sponsor and the executive team, to be actively engaged/informed throughout

the program's entire cycle or project and report on business benefits post-program/project completion (see Appendix B Tools and Templates No 10 Benefits Realisation Plan).

This final step may be achieved in several ways. Given the explanations above, they may be achieved through PMO reporting, significant health checks, KPI capability reviews and reports, and end of financial year business reports. As a result of P3M reporting, depending upon its placement in the business year, the recommendations gleaned may well contribute to its future strategic direction.

APPENDIX E: APPENDICES A, B AND C TO CHAPTER 4 – SURVEYS AND INTERVIEW QUESTIONS

Chap 4 Appendix A_Survey P3MS1

This survey has been developed in support of a Doctoral Thesis being undertaken by Murray Gough at USQ. The title of the thesis is: Developing a Next-Generation Corporate Improvement Model for Project Management. The survey has USQ Ethics Approval No: H18REA095.

This survey asks you to please rate each factor from [1] to [5] based on its importance for Organisational Project Management (OPM) and Portfolio, Program and Project Managers (P3M). 5 is full agreement, 1 is low agreement, and NA is 'I don't know or 'I do not want to answer.

Each attendee of the meeting has been emailed two ways to provide their individual assessment. You can either respond using the web [here](#)

or, **hit Reply**, then Scroll down and answer the questions below:

Business
    [ ] Corporate Strategic Plan
    [ ] Annual Business Plan for operations and projects
    [ ] PMO centre of capability
    [ ] Pipeline of programs and projects
    [ ] Executive coaching for managers and steering committees

Management Programs
    [ ] Stakeholder Analysis and Management
    [ ] Benefits realisation management
    [ ] Change management
    [ ]
    [ ] Cultural competence management
    [ ] Program and project health checks

Portfolio, Program and Project Managers (P3M)
    [ ] Competency-based position descriptions
    [ ] Business and Project Management KPIs: linked to maturity levels
    [ ] Education and Training System (workplace-based)
    [ ] Internal coaching and mentoring program
    [ ] Professional Development Pathways (VET, Higher Ed, P3M Certifications)

Place **feedback** on the need, usage and development of these factors between the square brackets below, and it will be sent to each attendee. Note you will not be identified as the author.
[*Replace this text with feedback*].

Chap 4 Appendix B:Survey P3MS2

This survey has been developed in support of a Doctoral Thesis being undertaken by Murray Gough at USQ. The title of the thesis is: Developing a Next-Generation Corporate Improvement Model for Project Management. The survey has USQ Ethics Approval No: H18REA095.

This survey asks you to please rate each factor from [1] to [5] based on its importance for Organisational Project Management (OPM) and Portfolio, Program and Project Managers (P3M). 5 is full agreement, and NA is 'I don't know or 'I do not want to answer.

Each attendee of the meeting has been emailed two ways to provide their individual assessment. You can either respond using the web here

or, **hit Reply**, then Scroll down and answer the questions below:

Please rate each factor from [1] to [5] based on its applicability in your chosen organisation for Business, Management Programs and Portfolio, Program and Project Managers (P3M).

Business
    [ ] Corporate Strategic Plan
    [ ] Annual Business Plan for operations and projects
    [ ] PMO centre of capability
    [ ] Pipeline of programs and projects
    [ ] Executive coaching for managers and steering committees

Management Programs
    [ ] Stakeholder Analysis and Management
    [ ] Benefits realisation management
    [ ] Change management
    [ ]
    [ ] Cultural competence management
    [ ] Program and project health checks

Portfolio, Program and Project Managers (P3M)
    [ ] Competency-based position descriptions
    [ ] Business and Project Management KPIs: linked to maturity levels
    [ ] Education and Training System (workplace-based)
    [ ] Internal coaching and mentoring program
    [ ] Professional Development Pathways (VET, Higher Ed, P3M Certifications)

Follow up

Are you prepared to share your answers and schedule a follow-up interview with Murray Gough? Replace [ ] with [y] in the square brackets of your choice:
    [ ] yes, I will allow Murray access to my answers
    [ ] yes, I would like Murray to arrange a follow-up interview

Place **feedback** on the need, usage and development of these factors between the square brackets below, and it will be sent to each attendee. Note you will not be identified as the author.

[*Replace this text with feedback*].

Chap 4 Appendix C: Interview Questions: used to support open-ended interview questions

<table>
<tr>
<td colspan="2" style="background-color:#f5d5f0">CORPORATE IMPROVEMENT FOR P3M (P3MCIM): CASE STUDY QUESTIONNAIRE AND ACTIVITY STATEMENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This set of interview questions has been developed to support a Doctoral Thesis being undertaken by Murray Gough at USQ. The title of the thesis is: Developing a Next-Generation Corporate Improvement Model for Project Management. The interviews have USQ Ethics Approval No: H18REA095.

The questions are intended to indicate the organisation's functions that will deliver and improve program and project results for a business (the portfolio) [P3M].
You are asked to indicate which Organisational Project Management (OPM) functions you are currently using and those that you may employ in the future.
You are also requested to indicate what actions you may take and what devices you may use to satisfy each function.
Thank you for your involvement in this USQ Doctoral Research study. If you need to query or discuss any aspect of the questionnaire, please contact Murray Gough before our meeting on 0413 751 194.</td>
<td></td>
<td>Please note: this study has Ethics Approval from the University of Southern Queensland (USQ) dated 2018</td>
<td></td>
</tr>
</table>

Strategy	Y/N	What kind or what form does it take?	What do you need to do to improve this function?
Do you have a long-term strategic plan for the business?			
Do you have an annual plan for the business that progresses the long-term plan?			
Do you have a mechanism to track progress and effectiveness?			
Does the plan include programs and projects/contracts? (internal or external)			
Is there accountability for deliverables?			
How often is it reviewed and amended?			
Prioritisation of programs, projects and contracts			

Do you conduct research and market appraisals for the business for program, project and contract selection?			
Is there an organisational list (pipeline) of priority programs, projects and contracts?			
How is this list managed? By whom?			
When and how often is it reviewed?			
How is progress acknowledged and published?			
Program or Project Management Office (PMO)			
Do you have a PMO?			
Does it have a charter/mandate? Is the role of the PMO clarified?			
Does it have a dedicated team?			
Is it integrated and recognised in the business? Is the PMO business driven?			
Are the PMO P3M methodologies, procedures and toolsets customised for your business context?			
Are the PMO P3M methodologies, procedures and toolsets accepted and employed in the business?			
Are the P3M methodologies, procedures and toolsets integrated with operations management?			
Change Management			
Do you have a change management strategy that aligns with significant programs and projects?			
Do you have a dedicated change management manager or team?			
What measures are used to gauge impact and effectiveness?			
Is change management included in program or project plans?			
Do you give team members specific training in change management?			
Business Benefits Management			
Are business benefits of priority programs, projects and contracts linked to the annual business plan?			
Are business benefits management included in program and project plans?			
How are business benefits from programs, projects and contracts managed and recorded?			
P3M Competency-Based Job Descriptions			

Do you have competency-based job descriptions for business, program and project/contract managers?			
Are they aligned to national or international standards for P3M?			
Are they aligned to your industry technical standards?			
Do they include Key Performance Indicators for performance management?			
Professional development, education and training in P3M			
Do you have a strategy for professional development for your business, program and project/contract managers?			
Are there individual pathways for professional development for your managers?			
Is professional development for P3M included in the business budget?			
Is professional development a mixture of academic and on-the-job learning?			
Do you have a professional development pathways database? How is this managed?			
Does professional development include a language, literacy and numeracy component?			
Does professional development include a cultural competence component?			
Does professional development result in certifications and qualifications? What kind?			
Is there a mentoring program by senior managers for program, project and contract managers and teams?			
Executive Management Coaching in P3M			
Do you have a strategy for executive management coaching in P3M (for sponsors/business managers)?			
Do you have program/project executive committee coaching? When? By whom?			
Health Checks: programs, projects and contracts			
Do you have a program, projects/contracts health check system?			
By whom and when our health checks conducted?			
Our health checks only audit-related?			
Our health checks performance and results-oriented?			
Our health checks related to end of program, project or contract evaluations. How?			

Are the actions tracked and closed out on time?			
Is appropriate feedback given to Program and Project Managers?			
KPIs For Business and program/project/contract Reviews			
Do you have a system for reviewing your capability in P3M?			
Is your system business, program, project and contract integrated?			
Is your system linked to recognised levels of organisational maturity in P3M?			
Is your system linked to expected results, benefits, return on investment, et cetera demanded by your strategic plan?			
Stakeholder Involvement and Management for P3M			
Do you have a stakeholder involvement and management strategy for the business?			
Do you have stakeholder involvement and management included in program and project plans?			
Does your stakeholder management involve internal and external control?			
Do you have a strategy for clients, external suppliers and contractors in support of P3M?			

APPENDIX F: INTERVIEWEE SHORT BIOGRAPHIES

The name and short profile of each interviewee appear below. Each has completed a Consent Form for the release of the interview data and their identification. The letters following indicate the identification acronym for selected respondents.

Brian Franklin - BF

Brian completed 38 years as a Commonwealth public servant. His work focused on land and facility management in Australia and the Australian Government overseas assets agency (Embassy & High Commission design and construction management). Brian subsequently undertook 22 years of project management consultancy (private sector) in Australia and overseas, specialising in P3M, specifically project delivery improvement. He spent three years with the Malaysian Department of Public Works as team leader for 20 professionals and 10 consultants to develop 12 specific project-based techniques to enhance human capital efficiencies for P3M in that department.

David Hudson - DHud

Following a professional career as an Australian Army Officer, David has a 25-year tenure as a project professional ranging from project manager to portfolio manager and as a mentor/coach at an individual practitioner and organisational level. He is certified as a Project Director and Executive Director and has held significant leadership positions nationally (AIPM) and internationally (IPMA) in the project management community of practice. He has led more than twenty project management organisational improvement initiatives in private and public sector organisations.

Warren Davison – WD

Warren is an experienced management adviser with extensive operational and board experience. The leverage of his solid people skills has generated an impressive record of business turnarounds. This has been in low barrier to entry businesses where business agility with lean overhead

structures is critical. His straightforward strategy, powerful performance focus and employee engagement have yielded outstanding results. His experience includes Argyle Advisory Pty Ltd, Managing Director December 2017 – Present.

He has advised selectively on strategic and operational matters. He has developed and tailored business reviews as a basis for specific business improvement plans and business sales and purchases, risk management and governance, project management and organisation development.

He was a Divisional Managing Director, Boral Limited from August 1998 to November 2013, and then headed the Construction Related Businesses Division (CRB) following a strategic review moved into a divestment mode. At its peak, the Division employed almost 3000 staff and had leading market positions across Australia. In addition to CRB leadership, he had executive responsibility for global contracting, procurement and risk management functions, providing advice and support to others for Boral Businesses.

From 1977 to 1998 (21 years) as Alcan / Capral Aluminium Divisional General Manager, his roles included an Industrial Engineer and Supply Chain Manager with Alcan New
Zealand before transferring to the Australian aluminium extrusion business.

Robert McGuire - RM

Commencing as an engineer in materials testing, transitioning into road engineering and construction, and then into operations and senior management, Robert now has 30+ years of experience across various functional areas. This experience includes health and safety, technical, project estimating, business development, operations management and general management, leading to a multi-million-dollar turnover business unit. Central to his focus and interest has been client relationships and leading successful teams.

Robert was General Manager of Boral Asphalt Queensland, one of the case studies in this research, and as such, the interview is also a peer review. Robert is now Executive General Manager of Boral Asphalt nationally. The difference with this interview is that it comments on employing an improvement model in his business. A similar strategy has been used for the other Boral case study.

Dr David Bryant - DBry

David has over 35 years of experience in ICT and 25 years in project and program management. He is a Certified Practising Project Director with the AIPM and has held various positions with private sector professional services companies providing services to the public sector. These include Partner, General Manager, Branch Manager and Delivery Manager. He currently teaches at the ANU and is a member of several Federal Government ICT Governance and Audit boards. In late 2016, David completed a PhD investigating key project team members' behaviours in successful ICT projects.

Dr Phillip Rutherford – PR

Phillip has extensive experience managing projects and leading project teams in business and education environments, including operations management at one of the world's largest technical training institutes. He helped develop the accreditation and assessment processes for the AIPM and managed numerous Defence capability development projects. His PhD thesis examined the application of complexity and chaos theories to decision making in asymmetric and ambiguous environments.

John Howarth - JH

John is an advisor to senior executives, and widely recognised as a leading expert in program and project management, specialising in the Australian public sector. He founded Tanner James in 1994 and introduced PRINCE2®, MSP® and P3M3® into Australia. He has led Tanner James to support hundreds of Australian public sector and private sector clients to improve how they deliver programs and projects. He has conducted many formal P3M3 assessments as an accredited assessor and has established and led many P3M capability improvement initiatives, including one of the largest project management implementations executed within the Australian Department of Defence.

Steve Hayden - SH

Steve has a military engineering background. His experience includes holding positions across a range of international worksites and public sector agencies. With a natural tendency to often ask "why, what, and by when", Steve is seldom a perfect fit for attendance-based operations. He has a range of experience across several project delivery organisations and is highly skilled in stakeholder management and dealing with complex organisational challenges. His crucial conclusion to a successful project is managing the continuous power, politics and personality play that dominate the stage and critical actors, many of whom fail to meet t titles' needs and expectations.

John Jacobi - JJ

John served 34 years as an officer in the Royal Australian Navy, specialising as a Principal Warfare Officer. Since 1989, he has been engaged in managing all sizes of projects in the public sector. In April 2001, he founded AxSys Pty Ltd, a project management services company, and has provided the full range of project management services to public and private sector organisations. He has extensive management experience, including project and general management of large and complex capital equipment projects, requirements analysis, liaison, contract development and management. He has been an active member of the AIPM since 1993, and for the past five years, he has served in several roles in a uniform capacity within the Department of Defence.

Dr David Baccarini – Dbac

David commenced his career as a quantity surveyor before entering academia. He gained his master's degree in project management in 1986 from South Bank University (London) and then began his long involvement in the project management discipline. David has been Associate Professor in Project Management at Curtin University. In 1993, he formulated the Master of Project Management at Curtin, the first postgraduate university program in Western Australia. This program was innovative because it was one of the first project management university degrees to be generic rather than specific to one project industry. David has over 70 publications focusing on project management and risk management and is a

Past-President of the AIPM (WA). His work has been cited in scholarly journals such as the Journal of the Operational Research Society, Journal of Management in Engineering, Engineering Management Journal, Long Range Planning, and International Journal of Project Management.

David's research has been enhanced through his consultancy work, primarily in terms of project management training. He has worked with organisations such as WA Department of Justice, City of Swan, City of Gosnells, WA Department of Agriculture, East Perth Redevelopment Authority, Canning Branch of General Practice, Peet & Co, CSR, LandCorp, Water Corporation, Western Power, WA Dept of Education, Institute for Child Health Research, and AUSAID.

Andrew Rosengren – AR

Andrew has spent 30 years working in a range of operational, business management, business improvement and business development roles across several asset-intensive industries, including mining, construction, manufacturing, and logistics. In the most recent 15 years, Andrew has worked at an executive level (including CEO), and has worked extensively in offshore markets, including North and South America, Africa, Europe and Asia. More recently, Andrew has formed his advisory firm Guberno, whose objective is to support firms' thinking about growth strategies in the face of disruption.

Sylvia Boyle - SB

Sylvia is an experienced professional manager and has established and assisted to maturity level several Portfolio Program Offices. She has worked across a broad range of management fields including training, mentoring, coaching, executive management, portfolio/program/project management, risk, issues, assurance, benefits, strategic planning and information management, business establishment, information technology, service delivery management, business and client relationship roles and secretariat support.

She has managed and directed complex and challenging multi-million-dollar programs and projects to successful completion. She is currently President of AIPM Chapter Canberra.

Tony Simmonds - TS

Tony has 42 years in the P3M business as a consultant and trainer. He has national (AIPM CPPD) and international qualifications (IPMA) and certifications in business, consultancy, project and program management, consultancy, risk management and sustainability. He operates several companies across two countries and is also the Finance Director of an international NGO and is a board member of GAPPS.

Marguerite Hudson - MH

Marguerite is a professional Program and Project Manager with twenty years of experience working with organisations to plan and deliver strategic large-scale change initiatives. Having commenced her project management career with IBM Australia, she moved into project management consultancy with Best Practice Project Management and RNC spanning commercial (IT, communications and media, finance, retail), government and non-profit sectors in the following roles: Head of Change, Project Management Office - TAL Australia; Communications Manager - Charles Perkins Centre, University of Sydney; Assessor, Coach and Trainer, Enerserve (now Ausgrid) and Breville; Project Manager, EPMO, Sydney Trains; Marketing Communications Project Manager – Resmed; Program Manager - FSW Pty Ltd; Communications Project Manager – UK; IT Project Manager - IBM Australia. She has an Advanced Diploma in project management skills (2003), AIPM certification as a Certified Practising Project Director (2019) and was a Registered Assessor with the AIPM from 2004 to 18.

Andrew Bondini - AB

Andrew is the National Void Rehabilitation Manager for the Boral Property Group Delivery, Earth Exchange, Landfill Team, and he is also the Regional Manager, Southern Region that forms part of the Boral Recycling Pty Ltd (Boral). He started his employment with Boral in 2005 in the Development Business Unit (Quarry End Use) as a Construction Manager and Prospect Quarry Statutory General Manager. In 2009 the Development Business Unit (Quarry End Use) became known as the Boral Property Group. He was then employed as a Design and Construction

Manager and continued as the Prospect Quarry Statutory General Manager. He has been the National Project Director/National Void Rehabilitation Manager since 2010.

In his current role, he is responsible for managing the Boral Property Group Delivery Team, overseeing and delivering existing and future building / civil infrastructure and remediation projects nationally.

David Williams - DW

David's early background is in project management in the construction industry on large projects such as the Loy Yang power station in Victoria, the submarine construction facility in SA, Bruce Stadium & New Parliament House in the ACT. He spent 15 years on major capital projects in Defence and is now the Program Manager for Technology Coordination & Collaboration at an Australian Government agency. David has a Diploma in Engineering and a master's degree in project management. He is a Certified Practising Project Director, a Chartered Project Professional, and a Councillor for the ACT Chapter of the AIPM. David lectures at the Australian National University in Project Management. David is the 2019 ACT Australian of Year - Local Hero.

David Hodes - DHod

David is CEO of the Ensemble Group that specialises in bringing innovations in productivity to the planning and performance of work. Through consulting, technology and capability transfer, David helps ambitious executives achieve business results and deliver lasting solutions on large, complex initiatives to turn intentions into reality; turning great ideas into actual value. Clients consistently generate 25% or more added value from their work by adopting the Ensemble approach. As a consulting, technology and capability transfer company, Ensemble has developed a multinational presence and worked with clients across a wide range of industries for more than 15 years.

David Roulston - DR

David Roulston FAIPM CPPE is the Chief Information Officer and the Portfolio Management Office Executive Branch Manager for Transport Canberra and City Services within the ACT Government. He has experience in project management linked to the development and delivery of IT/digital systems. He completed 21 years in the Royal Australian Navy, a career he undertook from 16 years of age. David transitioned to the Defence Materiel Organisation (DMO), now known as Capability Acquisition and Sustainment Group (CASG). He engaged in IT and Communications project management and grew a project management culture within the organisation. David participated in major joint projects such as the High-Frequency Modernisation project, the Military Satellite Capability project, and the Satellite Systems Program Office. In 2009 he transferred to the ACT Government, implementing a directorate project management framework and developing a project management culture. David also provides support and mentoring for Project Managers and Mentoring for Veterans transitioning from the Defence environment to other public service areas and careers. He has been part of the AIPM for over 17 years and has undertaken roles such as Chapter committee member and President of the ACT Chapter for five years. He has been recognised as a Fellow of the Australian Institute of Project Management.