Business Process Management:

Theory on Progression and Maturity

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Dedication

I would like to dedicate this thesis to my two beautiful children.

Hannah and Zach

You give me hope and perspective, direction and light. I hope that throughout your lives you are as fortunate as I am in the family, friends and opportunities I have. I hope that you combine a sense of loyalty, compassion and morality with an innate curiosity and courage that will see your lives filled with much love, laughter, adventure and new experiences. Most of all, I hope that I am as inspirational to you as you are to me. Always remember…

Mummy loves you big ones!

Abstract

Business Process Management (BPM) is a topic that continues to grow in significance as organisations seek to gain and sustain competitive advantage in an increasingly global environment. Despite anecdotal evidence of organisations improving performance by pursuing a BPM approach, there is little theory that explains and substantiates this relationship. This study provides the first theory on the progression and maturity of *BPM Initiatives* within organisations and provides a vital starting block upon which future research in this area can build.

The Researcher starts by clearly defining three key terms (*BPM Initiative*, *BPM Progression* and *BPM Maturity*), showing the relationship between these three concepts and proposing their relationship with *Organisational Performance*. The Researcher then combines extant literature and use of the Delphi Technique and the case study method to explore the progression and measurement of the *BPM Initiatives* within organisations. The study builds upon the principles of general theories including the Punctuated Equilibrium Model and Dynamic Capabilities to present theory on *BPM Progression* and *BPM Maturity*.

Using the *BPM Capability Framework* developed through an international Delphi study series, the Researcher shows how the specific organisational context influences which capability areas an organisation chooses to progress. By comparing five separate organisations over an extended time the Researcher is able to show that, despite this disparity, there is some evidence of consistency with regard to the capability areas progressed. This suggests that subsequent identification of progression paths may be possible. The study also shows that the approach and scope taken to BPM within each organisation is a likely predictor of such paths. These outcomes result in the proposal of a formative model for measuring *BPM Maturity*.

Key Words

Business process management, progression, maturity, progression theory, punctuated equilibrium, dynamic capabilities

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Statement of Original Authorship

I have not previously submitted the work contained in this thesis, **Business Process Management:** ***Theory on Progression and Maturity*** to meet the requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

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Tonia de Bruin

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1 Introduction

Business Process Management (BPM) first began emerging as a discipline during the mid 1990's, following the introduction of Hammer's (1993) business process reengineering and Davenport's (1993) process innovation. A study undertaken by Pritchard and Armistead (1999) found that 97% of European organisations surveyed considered BPM important to the organisation and only 3% had not commenced BPM practices. Similarly, Elzinga et al. (1995) found that 96% of respondents were engaged in *"some form of process management"* with formal programs adopted by 68% of these respondents. At the time, the interest in BPM arose from the:

- Need to improve responsiveness and quality and, to manage competitive threats (Pritchard & Armistead, 1999)
- Globalization, changing technology, regulation, the action of stakeholders and the eroding of business boundaries (Armistead, 1996)
- Competitiveness of industry within the international marketplace (Elzinga et al., 1995).

Since that time, investment and interest in improving and managing an organisation's processes has continued. Harmon & Wolf (2008) found that 88% of the organisations surveyed invested up to $5 million in their *BPM Initiatives* in 2006. Meanwhile, for the fifth year, Gartner (2009) identified process improvement as the number one business priority of CIO's.

According to Harmon & Wolf (2008, 15) the key drivers in BPM remain similar to those identified by earlier researchers (e.g. Armistead, 1996; Elzinga et al., 1995; Pritchard & Armistead, 1999) being to:

- Remain competitive by improving products and/or customer satisfaction
- Save money by improving productivity and/or reducing costs
- Improve organisational responsiveness, management coordination and management of IT resources.

Extant literature provides extensive support for the link between BPM and competitiveness, customer satisfaction and change management.

Gulledge and Sommer (2002, 365) and Zairi (1997, 68) suggest that a process approach to business increases competitive advantage by reducing cycle times, utilising new information technologies and obtaining managerial control. More generally, Hammer (2001, 4) suggests that a process focus helps to achieve higher (sustainable) performance with strategies including reducing costs, resources and/or overheads (Hammer, 2001; Zairi, 1997).

Adopting a process approach leads to increases in customer satisfaction and an improved ability to respond to customer needs (Hammer, 2001; Pritchard and Armistead, 1999; Zairi, 1997). It does this by improving an organisation's focus on the customer (DeToro & McCabe, 1997; Zairi 1997) and introducing greater flexibility (Hammer, 2001). Other customer benefits include a reduction in the time to market and an improvement in service delivery (Gulledge & Sommer, 2002; Zairi 1997) and quality (Elzinga et al., 1995; Hammer, 2001; Zairi, 1997).

Furthermore, a process approach has a positive impact on change management and cultural issues (DeToro & McCabe, 1997 Llewellyn & Armistead, 2000; Pritchard & Armistead, 1999). Similarly, Lee and Dale (1998) indicate that BPM practices can lead to a reduction in turf mentality and Zairi (1997) suggests that improved teamwork is possible. There are also indications that increasing the level of employee empowerment leads to a reduction in cross-functional barriers (DeToro & McCabe, 1997).

1.1 Problem Statement

Despite high interest, strong drivers and the recognised benefits associated with adopting a process management approach, there is evidence that progressing BPM is difficult for organisations. Pritchard and Armistead (1999) indicate that, despite 97% of organisations expressing a high interest in BPM, as few as 27% of those surveyed were at more than a basic level of adoption. Hatten and Rosenthal (1999) suggest that continuing evidence of organisations failing to reap the benefits of their efforts will lead to the latest round of process thinking becoming yet another management fad. More recently, Harmon & Wolf (2008) found that 50% of those surveyed in 2007 considered themselves to be merely exploring opportunities or as having only a limited initial investment in BPM, the same percentage as in 2006.

In their study, Pritchard and Armistead (1999) identify a number of inhibitors to the progression of BPM within organisations including:

- Poor understanding of BPM concepts
- Lack of consistency in BPM approaches within organisations
- Long-term nature of developing a process perspective.

The inhibitors identified by Pritchard and Armistead (1999) indicate disconnect between theory and practice, providing support for the notion that a theoretical core is missing from the BPM domain, with respect to the adoption of organisational level *BPM Initiatives*.

1.1.1 Lack of a Theoretical Base

Since the late 1980's and 1990's, there has been growing research into the managerial, improvement and organisational aspects of process (Davenport, 1993; Hammer & Champy, 1993; Lee & Dale, 1998; Melan, 1989; Pritchard & Armistead, 1999). In line with the views of managerial researchers (Adler, 1983; Parkhe, 1993), this positions process management as an emerging domain that is at a pre-paradigmatic stage of development. According to Parkher (1993, 227) domains at this stage:

> *"…lack a strong theoretical core or an encompassing framework that effectively integrates past research and serves as a springboard for launching future research…"*

With regard to this, a number of researchers have articulated principles, key steps or lessons learned when implementing BPM practices.

In expanding his approach, Zairi (1997, 79) developed a number of governing rules including:

- Proper mapping and documentation of major process activities
- A focus on customers
- A reliance on systems and documentation to ensure consistency
- Discipline and repeatability of quality performance
- Measurement and assessment of performance of processes to meet targets set for delivery of output levels in line with corporate objectives
- Achievement of extra benefits through a base of continual improvement achieved and problem solving
- Achievement of superior competitiveness by aspiring to best practice and not relying on just having good systems and the right structure but also the adoption of a change culture.

Similarly, Pritchard and Armistead (1999, 19-21) identified a number of lessons learned including:

- Link BPM into strategic programs
- Ensure clarity of BPM approach
- Address style and context within BPM
- Allow time to acquire a process perspective
- Achieve focus
- Integrate top level BPM strategy with team level activity
- Acquire new process competencies

- Consider the impact of BPM strategy at team and task level
- Train around business processes
- Build a knowledge base around processes.

In addition, Armistead (1996, 49-50) identified 10 principles for managing processes including:

- Designate a process champion
- Know the process
- Understand the linkages
- Work on the trade-offs
- Teach others about the process
- Train within the process
- Measure the process
- Manage careers
- Build specialist expertise
- Improve the process.

According to Anderson et al. (1994), such lists, whilst potentially useful and comprehensive, do not represent theory. In their review of the Deming Management method, Anderson et al. (1994) argue that a similar listing of Deming's 14 principles of TQM represented:

> *"…principles of transformation for improving the practice of management (…) a complex, prescriptive set of interrelated rules of inter- and intraorganizational behaviour, codified and communicated in the linguistic form of commands. Although they certainly do suggest and advocate a number of concepts, they, themselves, are not concepts, the building blocks of theory (Chafetz, 1978: 45)…"*

The Researcher agrees with Anderson et al. (1994) and contends that lists such as those proposed by Armistead (1996), Pritchard and Armistead (1999) and

Zairi (1997) are not theory but rather provide guidance for the development of theory. Whilst Chapter 2 provides a deeper discussion on theory and theory building, a principal reason for this argument is the lack of clearly defined constructs and their relationships. According to Gregor (2006, 613), the significance of theory to research and practice is that:

> *"...Theories are practical because they allow knowledge to be accumulated in a systematic manner and this accumulated knowledge enlightens professional practice..."*

Hung (2006) presents one of the first attempts of organisational level, BPM theory, defining constructs of People Involvement and Process Alignment and testing their relationship with *Organisational Performance*. This study is significant as it provides validation of the link between BPM and *Organisational Performance*. The study does not assist organisations in knowing how to progress BPM endeavours or how to measure such progression however.

1.1.2 Aims of this Study

Consequently, this study aims to make both a *theoretical* and a *practical* contribution to the BPM body of knowledge and the sustainability of BPM practice. Specifically the study will focus on organisations adopting BPM with a view to building theory on the progression of *BPM Initiatives*. Furthermore, the study will investigate how organisations might measure such progress to enable greater understanding of the link between the *BPM Progression* and organisational performance.

1.1.3 Chapter Overview

The structure of this Chapter is as follows. Section 2 positions the research, providing clarification and definition of important terms within this study. Section 3 presents the research questions that aim to address the development of BPM theory. Section 4 discusses the high-level research plan including the use of a multi-paradigmatic approach. Section 5 summarises the research contributions including the publications and the practical application of a number of the research outcomes. Section 6 provides a summary of the chapter.

1.2 Key Definitions

The inhibitors identified by Pritchard and Armistead (1999) highlight an aspect of emerging domains – this being the lack of common language and inconsistent use of terminology. Within the BPM domain, there is further evidence of this shortcoming.

On the one hand, there are multiple terms used to denote variations of practice such as business process (re)engineering (BPR and BPE), business process innovation (BPI) and business process management (BPM). These terms each present slightly differing views. Hammer and Champy (1993) present BPR as a means of achieving significant process change, often making use of technology to automate processes. Davenport (1993) indicates that BPI looks to integrate BPR and total quality management (TQM) to avoid potential confusion within organisations. At an organisational level, Pritchard and Armistead (1999) present BPM as an approach to organisational management that, if done well, has the potential to provide organisations with significant competitive advantage. Arguably, the distinction between the terms is not always clear and consequently, the use of these terms is not always consistent with the original intent.

On the other hand, a single term can have more than one meaning. Business Process Management (BPM) is an example of this. As indicated above, to Pritchard and Armistead (1999), BPM represents an organisational management approach, whereas, for McDaniel (2001) BPM takes a more restrictive interpretation denoting a piece of technology. In their work looking at process management maturity, Curtis and Alden (2006) use the term BPM to refer to the management or improvement of discrete processes whilst McCormack (2001) uses the term to refer to the level of process orientation within a business[1].

Inconsistent use of terminology or a lack of a common language presents a number of issues for research in an emerging domain. First, it makes comparing and contrasting extant literature more complex as the exact meaning of a term, as used within an article, may be open to interpretation. Second, it makes using

[1] The literature review in Chapter 3 provides further insights into variation in BPM terminology.

some methods (e.g. surveys) potentially less suitable. This is because it becomes increasingly difficult to ensure that the interpretation of questions is consistent with the researcher's intent as opposed to the participants own personal interpretation. Consequently, there is the possibility of a reduction in the reliability and validity of data and subsequently spurious findings from the research are possible. Third, there is likely to be a lack of common constructs upon which to build theory.

Furthermore, anecdotal evidence suggests that ambiguity in terms may reduce the acceptability of a term to practitioners. For example, anecdotal evidence indicates that past endeavours (such as BPR) have been so closely tied to staff reductions, or have failed so significantly in some organisations, that there is now a reluctance to use a related term such as BPM, even when what the organisation is doing has all the hallmarks of BPM. Instead, organisations use terms such as *organisational transformation*, *business transformation*, *work productivity improvement* and other similar names to denote their process-based approaches. This potentially compromises the ability of researchers to gather comparable data.

To provide clarity for this study and its outcomes, the next section defines key terms that the Researcher developed and applied during this study.

1.2.1 Defining Organisational Level BPM

First, it is necessary to define the level of this study. In doing so, the Researcher positions the study with regard to the unit of analysis and clearly distinguishes the study from existing research.

The aims of achieving competitive advantage, increasing globalisation and competitiveness suggest that an organisational level study of BPM is appropriate. Strategic management proponents such as Teece et al. (1997, 518) support such a notion, indicating the:

> *"…competitive advantage of firms lies with its managerial and organizational processes, shaped by its (specific) asset position, and the paths available to it…"*

To this end, the study will investigate organisations that have implemented (or are implementing) BPM principles within an organisational approach to process management. As such, this study distinguishes from those that focus on:

- Process improvement projects or programs (Box & Platts, 2005; Maull et al. 2003)
- Implementation of process aware technologies or solutions (Dumas et al., 2005)
- Discrete aspects of BPM such as process modelling (Bandara et al., 2005) or the use of process methods (Ittner & Larcker, 1997).

1.2.2 Defining BPM and BPM Initiative

The inconsistency in terminology requires further clarification due to the possible multiple interpretations and use of the term BPM[2]. In earlier discussion, there were two interpretations of BPM as a management approach. Pritchard and Armistead (1999) indicate that BPM represents an approach to managing the organisation, challenging the traditional functional approach, whereas in their work looking at process maturity, Curtis and Alden (2006) use the term BPM to refer to the management of discrete processes.

Positioning the study at the level of an organisational management approach recognises that either of these managerial approaches or some variant of the two might exist within organisations. It is important that the Researcher considers the impact of this difference as it can influence the unit of analysis within the study, and affect the study outcomes.

One way of dealing with the varying interpretations is to refine the scope of the study and limit it to include only one of the approaches. The exploratory nature of the study however, makes it suitable for investigating the impact of this distinction and contributing to the body of knowledge regarding the different interpretations of BPM. Consequently, the Researcher does not intend to limit

[2] The Researcher discusses the different interpretations of BPM in detail when reviewing extant literature in Chapter 3.

the study based on the managerial approach taken, but rather aims to explore the consequences of the different approaches within the study.

To address this, the Researcher distinguishes between two key terms: (1) *BPM* – what BPM means to the Researcher in terms of its use within the study and (2) *BPM Initiative (BPMI)* – what BPM means to the organisations participating in the study[3]. Defining what BPM means in the context of the study provides a clear frame of reference for future interpretation of the study and its findings. Defining what BPM means to the participants of the study ensures that any differences in their approaches and applications of BPM are clear and that the Researcher can consider distinctions in the analysis of data. Furthermore, recognising a distinction between these two terms is important for providing clarity when selecting the *unit of analysis* during the study and when communicating with companies participating in the study[4].

Definition of BPM

The Researcher developed a definition of BPM for use in the study by analysing common aspects of definitions from extant literature. In determining this definition, the Researcher recognised that the scope (i.e. the area of the organisation to which BPM is applied) and the approach taken to implementation (i.e. use of projects, or a program of work, or use of a Centre of Excellence) could apply to either managerial interpretation of BPM discussed earlier. Consequently, in defining BPM for the study, it was important to avoid reference to either the scope or the implementation approach and focus only the principles of BPM. The definition of BPM as it applied to this study was:

[3] These definitions have not been subject to any form of testing or validation as their purpose was for consistent interpretation of the terms as used in the study.

[4] Distinguishing between these two terms does not mean that the two terms cannot be the same in some instances. Rather, it acknowledges that, due to the inconsistency in terminology usage, there are times when they may not be consistent and therefore this approach provides clarity at these times.

> ***"…'BPM'*** *refers to a management practice aimed at adopting a process-orientation as a way of doing business. There is recognition that an organisation* ***may not*** *refer directly to BPM however, in the context of this research this term encompasses a management approach that includes a focus on:*
>
> - *Having a strategic focus on process management*
> - *Defining the end-to-end processes of the organisation*
> - *Standardising and streamlining processes*
> - *Creating a customer perspective and generating value-add*
> - *Collaborating on processes*
> - *Connecting with customer and supplier processes*
> - *Eroding cross-functional boundaries*
> - *Simplifying process work…"*

Definition of *BPM Initiative* (BPMI)

The purpose of the term *BPM Initiative* was to recognise that the extent to which an organisation applied these BPM principles could potentially vary from organisation to organisation. Within one organisation for example, the *BPM Initiative* might equate to a focus on undertaking ad hoc process improvement projects. Within another organisation, the *BPM Initiative* might entail the development of a centralised team that provided BPM services to the entire organisation or alternatively a more narrowly defined area within the organisation. The Researcher was interested in whether different variants of BPM made a difference to the progression of the *BPM Initiative* so it was important to be able to distinguish between them. Consequently, the Researcher proposed descriptions of the type of structure a *BPM Initiative* might have, based on existing literature. The definition of *BPM Initiative* as it applied to this study was:

> ***"…'BPM Initiative'*** *or* ***'BPMI'*** *is a proxy for your organisation's process-based initiative. Such an initiative might be in the form of:*
>
> - *An ad hoc approach to process improvement and management*

- *A project-based approach to process improvement and management*
- *Pockets of BPM excellence e.g. a centre of excellence, contained within discrete business units or perhaps a specialist team*
- *An enterprise wide BPM Initiative.*

It is recognised that the initiative may not be called 'BPM' within each organisation but may be called something like Business Transformation, Business Improvement or Change Project. In essence, such an initiative would display (to a greater or lesser extent) similar attributes as those detailed in the definition of BPM…"

1.2.3 Defining BPM Progression and BPM Maturity

In early investigations, the Researcher identified that organisations face difficulties in measuring the progression of BPM and related fields. In studying BPR programmes, for example, Maull et al. (2003) recognise temporal and contextual difficulties in measuring a dynamic concept within an organisational context[5]. Recognising that this conflict between static and dynamic states is likely to be present within this study, the Researcher distinguished between the terms *BPM Progression* and *BPM Maturity*.

BPM Progression refers to the journey of BPM that occurs within an organisation over time. *BPM Progression* reflects, but does not measure, events, sequencing and influences that occur during this journey. *BPM Progression* is a dynamic concept reflecting the temporal aspects of adopting a BPM approach.

BPM Maturity refers to an artificial construct developed to measure *BPM Progression* at a given point in time[6]. Consequently, *BPM Maturity* is a static concept, crystallising progression at a given point. This construct incorporates dimensions critical to *BPM Progression* including relationships between the

[5] The Researcher discusses issues in measuring BPM in more detail in Chapter 3.

[6] Aside from its use in the examples of Maull et al. (2003) and Pritchard and Armistead (1999) in common language, *maturity* refers to the state or quality of being fully-grown or developed, with words synonymous with maturity including ability, advancement, capability, completion, development, experience, fitness, perfection, readiness, sophistication and wisdom (http://dictionary.reference.com, 2006). The Researcher contends that this makes use of the term 'maturity' suitable for the notion of measuring progress.

dimensions that derive from insights gained by exploring *BPM Progression*.

The Researcher does not intend that these terms are interchangeable, but they are interrelated. Insights and a deeper understanding of *BPM Progression* will assist in the development of a measurement model for *BPM Maturity* by contributing to the understanding of the relationships between the components of the model. Furthermore, understanding the dynamic concept of progression separately to the static notion of measurement will enable greater insights as a dynamic theory will not lose the richness of understanding and insight that inevitably occur when simplifying complex phenomenon in a model.

In addition to these definitions, it is beneficial to clarify the Researcher's view on how *BPM Progression* and *BPM Maturity* potentially relate to the notion of *BPM Success*. In doing so, the Researcher sets the boundaries of this study and shows areas of potential future research. To this end, the highlighted section on the left hand side of Figure 1 shows the coverage of this study[7]. The right hand side of the diagram shows the possible relationship of this study to future research into *BPM Success* and *Process Success*.

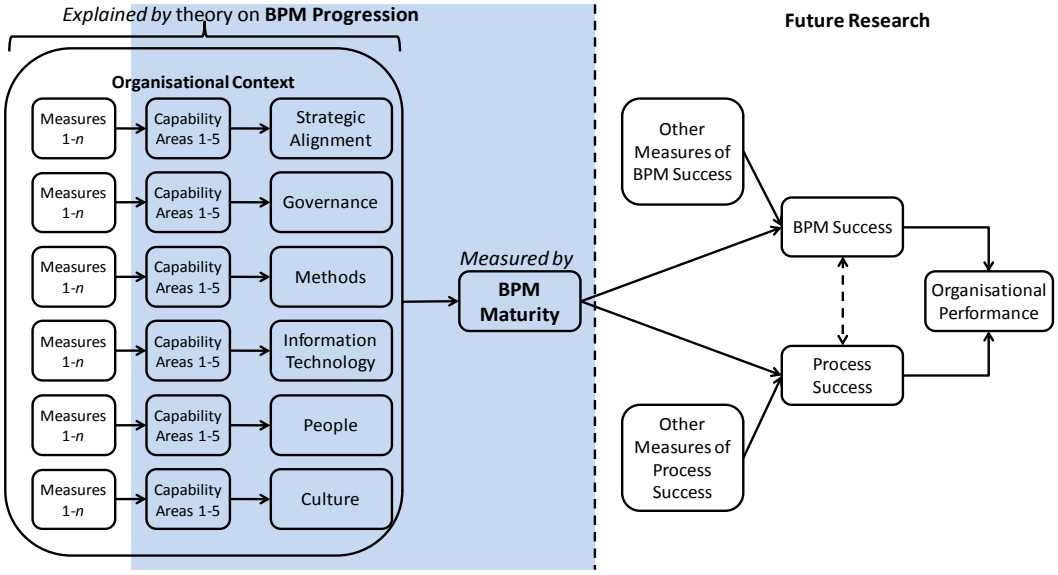


Figure 1: Positioning BPM Progression, Maturity and Success

[7] The Researcher discusses the exclusion of the measures for the capability areas when detailing the research questions for this study.

1.3 Research Questions

In developing the research questions for this study, the Researcher used Gable's (1991) approach[8]. Gable identifies four cascading levels of questions starting at: Level 1 – Managerial Questions, Level 2 – Research Questions, Level 3 – Investigative Questions and finally Level 4 – Measurement Questions. This theory building study focuses on the first three levels as Figure 2 shows.

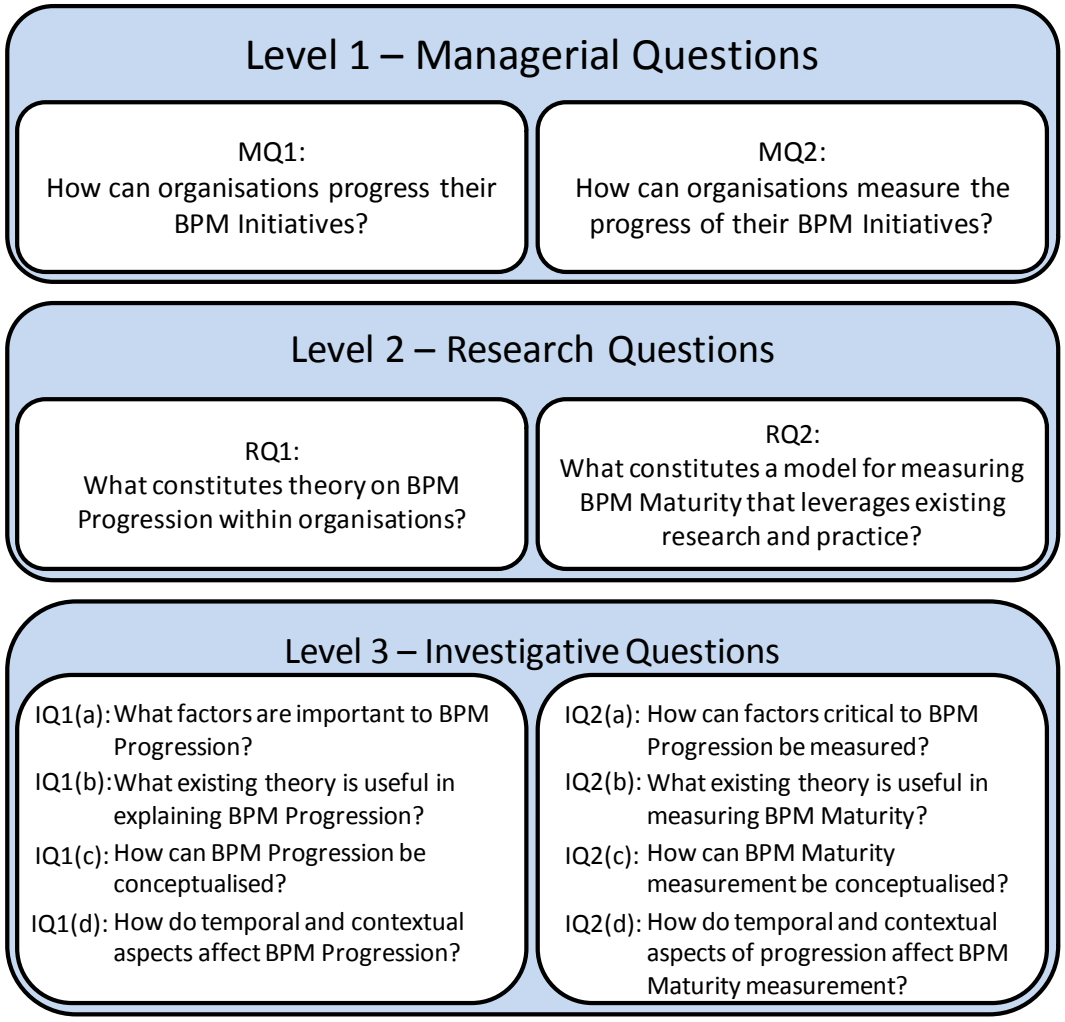


Figure 2: Study Questions: Managerial, Research and Investigative

[8] This approach to research questions builds upon the earlier work of Emory, 1985.

The pre-paradigmatic state of the BPM domain makes it premature to develop measurement questions prior to first developing a more comprehensive understanding of this complex phenomenon. Furthermore, the operationalisation of the measurement model using Level 4 – Measurement Questions is appropriate to theory testing and extension stages of research. Consequently, Level 4 is outside of the scope of this study and provides an opportunity for future research[9].

1.4 Research Plan

As discussed in previous sections, this study aims to build organisational level theory in the emerging BPM domain. In doing so, the study adopts a ***multi-paradigmatic*** perspective and utilises a ***multi-method*** strategy to address its unique needs. Furthermore, the use of ***multiple data collection instruments*** within the research methods assists with triangulation of data thereby strengthening the outcomes of the research.

Gioia and Pitre (1990) indicate that a multi-paradigmatic approach is suited to organisational level theory building in complex and emerging phenomenon. In taking this approach, the Researcher seeks to focus on the circumstances and purpose of the research by combining opposing aspects of research in a manner that suits the research at hand (Hammersley, 1999). The study combines elements of positivism and critical thinking in an integrated approach to exploring the progression of BPM within organisations. The development of the a priori conceptual model and subsequent proposal of a measurement model are consistent with Orlikowski and Baroudi's (1991) view of positivism, whilst the recognition and integration of the contextual and temporal aspects of *BPM Progression* align with their view on critical thinking.

[9] As this study involves the conceptualisation of BPM Maturity however, the Researcher needs to be mindful of the manner in which subsequent operationalisation of the measurement model might eventuate. To this end, the study provides an opportunity to pilot early ideas on future operationalisation in the design of data collection instruments. However, in doing this the focus of the study is on exploration of potential issues with operationalisation and not on the development and validation of measurement questions.

The research design incorporates the use of multiple research methods including:

- A number of **targeted literature reviews**. The first review contributes to the understanding of the discipline and the development of an initial a priori conceptual model. The second review contributes to the selection and application of appropriate methods in the study. Finally, a further review contributes to the theory building process including the development of a formative measurement model.
- **A series of Delphi studies (6)** to explore and expand the critical factors of the conceptual model. In total six Delphi studies occurred – one for each of the factors included in the conceptual model.
- Extensive use of **case studies, both singular and multiple**. In the first instance, multiple case studies (2) contribute to the refinement of the conceptual model. Following the Delphi studies, a single exemplary case study (as defined by Yin, 1994) provides the impetus for an emergent BPM theory. A further set of multiple, longitudinal case studies (5) refine the emergent theory and measurement model.
- Finally, the Researcher applies **qualitative data techniques** and principles to collect, understand, analyse and present the data and outcomes of the study.

1.4.1 Thesis Structure

The Researcher takes a **staged approach** to this study, recognising the need to undertake exploratory fact-finding research (Wacker, 1998) in an emerging field prior to undertaking structured theory building research (Eisenhardt, 1989). There is further discussion on these two stages in Chapter 2 – Research Design.

Consequently, following the early chapters that focus on the introduction and justification (Chapter 1) and design (Chapter 2), the next four chapters, Chapters 3 to 6, represent Stage 1 – Exploring the BPM Domain.

Stage	Chapter	Description	Pages	Appendix
1. Exploratory Research	3	Development of an a priori conceptual model from literature review.	3:65 – 3:104	N/A
	4	Refinement the conceptual model through the conduct of two case studies.	4:105 – 4:151	13.1
	5	Extension the refined conceptual model through the application of the Delphi technique.	5:153 – 5:175	13.2
	6	Application of the extended conceptual model in an exploratory case study.	6:177 – 6:208	13.3

Table 1: Thesis Structure: Stage 1 Chapters

Chapters 7 to 10 represent Stage 2 – Building BPM Theory as shown in Table 2. Examples of the documentation and data collection instruments the Researcher used throughout the study are included in the Appendix, together with examples of data and data analysis where relevant. Table 1 and Table 2 provide details of the location of the relevant Appendix for each chapter.

Stage	Chapter	Description	Pages	Appendix
2. Theory Building Research	7	Design of a series of multiple, longitudinal case studies for the subsequent exploration of *BPM Initiatives* from the frame of the extended conceptual model.	7:213 – 7:230	13.4
	8	Within-case analysis undertaken on the data from the multiple, longitudinal case studies.	8:233 – 8:298	N/A
	9	Cross-case analysis undertaken on the data from the multiple, longitudinal case studies.	9:301 – 9:350	N/A
	10	Proposal of a theory on *BPM Progression.* Proposal of a formative model for measuring *BPM Maturity.*	10:351 – 10:387	N/A

Table 2: Thesis Structure: Stage 2 Chapters

Chapter 11 concludes the thesis, providing a summary of the study outcomes, limitations and outlook for future research.

1.5 Research Contributions

A desire to conduct both rigorous and relevant research underpins this study. As such, there are both theoretical and practical contributions arising from its conduct. On a theoretical level, contributions include:

- A so called *BPM Capability Framework*, developed from an extensive literature review identifying factors critical to *BPM Initiatives* and refined using the Delphi technique to identify areas of measurement
- Definition of a construct for measuring *BPM Maturity* including the proposal of a formative measurement model
- Explanatory Theory for *BPM Progression* developed through the conduct of exploratory case studies, and refined through a series of longitudinal case studies
- Development of a typology for classifying *BPM Initiatives* based on the scope of the initiatives and the approach taken to their implementation
- An understanding of the potential role of context and contextual variables on the relationships in the *BPM Maturity* measurement model.

1.5.1 Publications

The publications accepted during the course of this study support the theoretical contributions of the study. These publications include:

Conference Publications:

de Bruin, T., & Doebeli, G. (2009). Progressing an organizational approach to BPM: Integrating experience from industry and research. *Proceedings of the 21st International Conference on Advanced Information Systems (Industrial Track)*, *Amsterdam*.

de Bruin, T. (2008). Strategies for increasing executive commitment to BPM. *Proceedings of the 16th European Conference on Information Systems, Galway, 1620-1631.*

de Bruin, T. (2007). Insights into the evolution of BPM in organisations. *Proceedings of the 18th Australasian Conference on Information Systems, Toowoomba, 632-642*.

de Bruin, T., & Rosemann, M. (2007). Identifying BPM capability areas using the Delphi Technique. *Proceedings of the 18th Australasian Conference on Information Systems, Toowoomba, 643-653*.

de Bruin, T., & Rosemann, M. (2006). Towards understanding strategic alignment of BPM. *Proceedings of the 17th Australasian Conference on Information Systems, Adelaide*.

de Bruin, T., Rosemann, M., Freeze, R., & Kulkarni, U (2005). Understanding the main phases of developing a maturity model. *Proceedings of the 16th Australasian Conference on Information Systems, Sydney*.

Rosemann, M., & de Bruin, T. (2005). Towards a business process management maturity model. *Proceedings of the 13th European Conference on Information Systems, Regensburg, 521-532.*

Rosemann, M., & de Bruin, T. (2004). Application of a holistic model for determining BPM. *Proceedings of the AIM Pre-ICIS Workshop on Process Management and Information Systems, Washington D.C.*

Rosemann, M., de Bruin, T., & Hueffner, T. (2004). A model for business process management maturity. *Proceedings of the 15th Australasian Conference on Information Systems, Hobart*.

Doctoral Consortiums:

de Bruin, T. (2005, November). BPM maturity. In K. Fielden & B. Rowlands (Co-Chairs), *Doctoral Consortium for the 16th Australasian Conference of Information Systems, Sydney*[10].

[10] This paper was selected as 1 of the 3 best papers from the Doctoral Consortium and the Researcher was invited to present at the ACIS 2005 conference.

de Bruin, T. (2005, November). BPM maturity. In I. Hawryszkiewycz (Chair), *Doctoral Consortium for the 2nd International Conference on Qualitative Research in IT & IT in Qualitative Research*, *Brisbane.*

Book Chapters

de Bruin, T., & Doebeli, G. (in press). BPM as an organizational approach: The experience of an Australian transport provider. In M. Rosemann & J. vom Brocke (Eds.), *Handbook on Business Process Management: (Vol 1).* Berlin: Springer Publishing Company.

Rosemann, M., de Bruin, T., & Power, B. (2006). A model to Measure *BPM Maturity* and Improve Performance. In J. Jeston & J. Nelis (Eds.), *Business Process Management: Practical guidelines to successful implementations,* (pp. 299-315). Burlington, Massachusesetts: Butterworth-Heinemann.

Education Modules:

de Bruin, T (2005). Embedding BPM. In: *Self study course in Business Process Management, Module 9.* Informa Australia Pty, Sydney.

1.5.2 Practical Applications and Contributions

On a practical level, contributions arise from the application of the theoretical outcomes within organisations, by the individuals that work there. Figure 3 shows how an Australian bank has used the factors to underpin their five-year plan for BPM within the IT Division. Figure 4 shows how an Australian transport provider has used the *BPM Capability Framework* in their intranet portal. Furthermore, during the study, the Researcher made presentations and conducted education seminars on the research outcomes as reflected in Table 3.

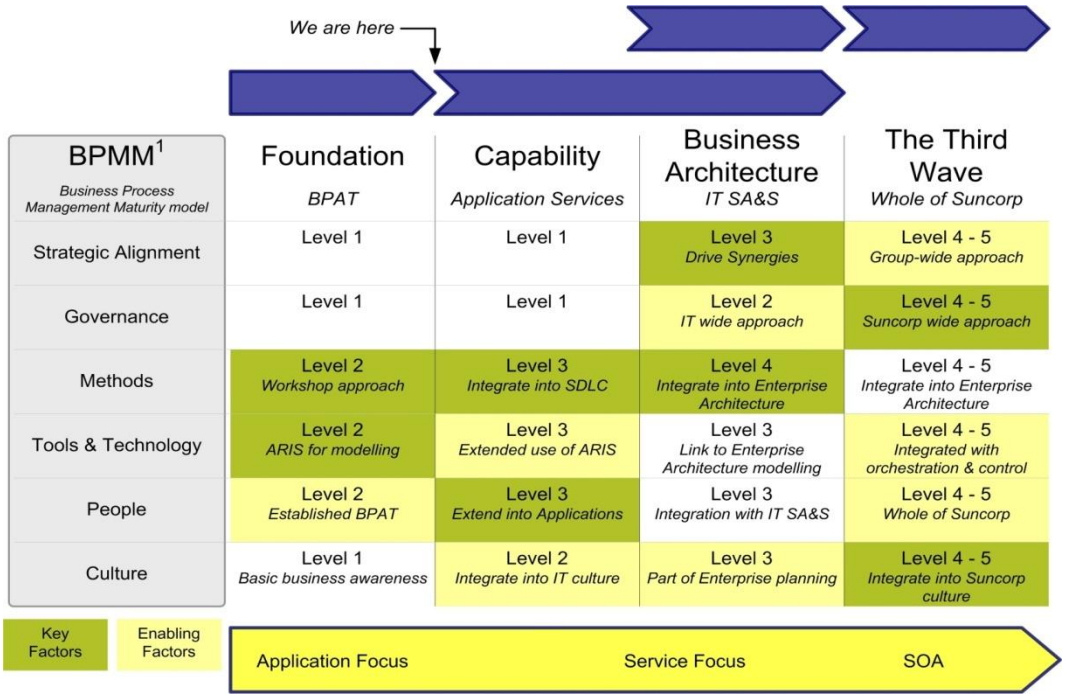


Figure 3: Application within Australian Bank

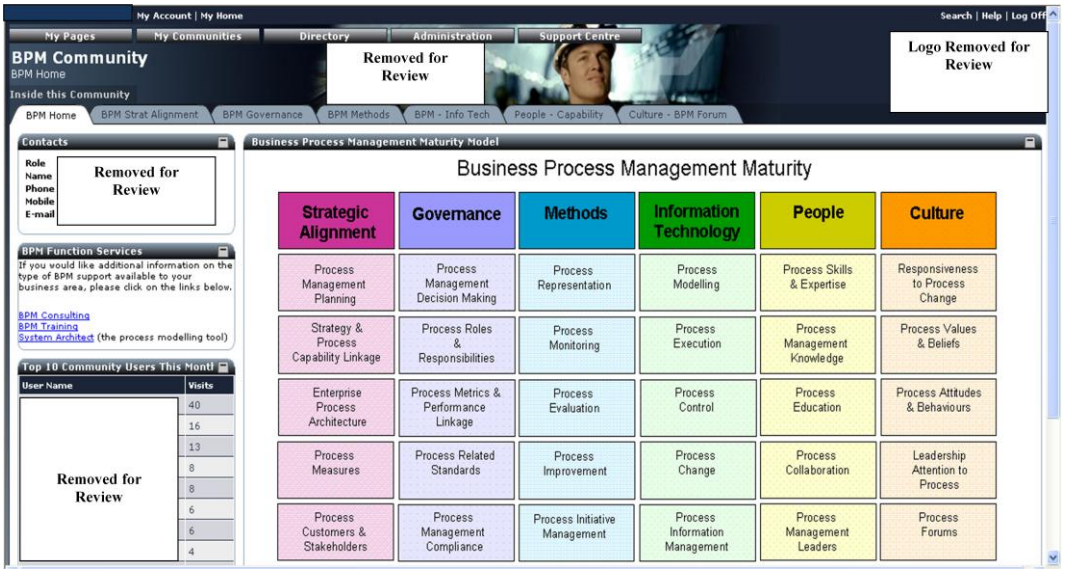


Figure 4: Application within Australian Transport Company

1.5.3 Practical Contributions

In addition to the theoretical contributions, the Researcher contributed to industry and practice during the course of the study including:

Organisation / Event	Title / Description	Time
Presentations		
Fosters Brewery – Melbourne	Progressing BPM	March 2008
Water Corporation – Perth	Measuring BPM Maturity	November 2007
5th Australasian Process Days 2007	Measuring and Managing BPM Maturity	August 2007
Commonwealth Bank – Sydney	Evolving BPM Maturity	August 2007
Rio Tinto Process Business Leaders Annual Meeting – Brisbane	Progressing BPM	August 2007
Bentley College – Boston	BPM Maturity	July 2007
Bank of America – Charlotte	BPM Maturity	July 2007
BPM Chapter – Canberra	BPM Contextual Factors	May 2007
Commonwealth Bank – Sydney	Measuring BPM Maturity	May 2007
4th Australasian ProcessDays 2006	Contextual Factors that Affect BPM	August 2006
BPM Roundtable	Culture and BPM	August 2006

Organisation / Event	Title / Description	Time
IQPC BPM Conference 2006	Evaluating and Advancing BPM Using a BPM Maturity Model	May 2006
BPM Chapter – Brisbane	A Model to Assess BPM Maturity	September 2005
Education		
IP Australia – Canberra	1 day of training on BPM Maturity	May 2009
Queensland Courts	1 day of training on BPM Maturity	February 2008
Queensland Motorways	1 day of training on BPM Maturity	November 2007
Queensland Treasury	1 day of training on BPM Maturity	October 2007
Queensland Department of Education	1 day of training on BPM Maturity	June 2007
Queensland Department of Education	1 day of training on BPM Maturity	October 2006
Queensland Courts	1 day of training on BPM Maturity	September 2006
Queensland Department of Main Roads – Roadtek	1.5 hr session on BPM Maturity	June 2006
Other		
Queensland Health	Consulting Engagement: Assessing BPM Capability	May 2008
OMG Think Tank – San Francisco	Chair of Roundtable	July 2007

Table 3: Practical Contributions

1.6 Chapter Summary

In this chapter, the Researcher presented arguments supporting the study of BPM at an organisational level. The Researcher recognised the potential influences on the design and conduct of the study resulting from BPM being an emerging discipline and consequently lacking a common language, shared terminology and a core body of theory (with respect to BPM as a management practice).

Next, there was definition of key terms as they apply to the study including organisational level research, *BPM*, *BPM Initiative*, *BPM Progression* and *BPM Maturity*. Furthermore, the Researcher positioned the study with respect to the concepts of *BPM Success* and *Process Success*. In doing so, the Researcher set the boundaries of the study and clarified the contribution of the study to future research.

The study aims to contribute to the BPM body of knowledge by developing theory for *BPM Progression* and a measurement model for *BPM Maturity*. This reflected in the three levels of study questions including managerial, research and investigative questions. Level 4 – Measurement Questions were excluded from the scope of this study.

The Researcher provided an overview of the research design plan and a review of the thesis structure, before presenting the theoretical and practical contributions that have arisen from the study.

The next Chapter provides details of the research design that supports the conduct of the study.

2 Research Design

There has been a resurgence in the appeal of BPM as a means by which organisations can meet the increasing demands of globalisation and competitive advantage. This study aims to make a theoretical contribution to the BPM domain by exploring the progression of *BPM Initiatives* within organisations, including the investigation of how to measure such progression. This chapter presents the research design for achieving the aims of the study: (1) develop theory about *BPM Progression* and (2) propose a model to measure *BPM Maturity*[11].

2.1 Chapter Overview

The structure of this chapter is as follows. Section 2 discusses the positioning of the study from a domain, a theoretical and a philosophical perspective. Section 3 details the research strategy including the two stages of the study whereby Stage 1 aims at exploring BPM and Stage 2 aims at building theory. Section 4 provides justification for the selection of a multi-method approach to the study, detailing the integrated use of exploratory case study and survey research. Section 5 discusses data collection including the use of Lincoln and Guba's (1985) criteria for collecting qualitative data. Section 6 provides a summary of the chapter.

[11] Separating the theory from the measurement model in this manner is consistent with views on the logical structure of theory being *variance* or *process* theory (Markus and Robey, 1988). Other proponents of such separation are Huber and Van de Ven (1995), Mohr (1982) and Seddon (1997).

2.2 Positioning the Study

A requirement of this study is that it makes a unique, theoretical contribution to a body of knowledge. It is therefore necessary to position the study from three perspectives: (1) the domain, (2) its theoretical basis (i.e. theory building, theory testing, theory extension or some combination) and (3) the philosophical positioning of the research.

2.2.1 Domain Positioning

This study positions BPM as a complex, organisational level phenomenon emerging from earlier practices such as Total Quality Management, Business Process Reengineering and Business Process Innovation. The newness of BPM as an approach to managing organisations and processes equates to a young domain, presenting a number of unique challenges that the Researcher needs to consider in the research design[12].

Lack of Theory

In Chapter 1, the Researcher argued that there was little theory to assist organisations progress BPM. Whilst there was evidence of guidance on progression (Pritchard & Armistead, 1999; Zairi, 1997), the Researcher argued that this was not theory due to the lack of constructs and relationships (Anderson et al., 1994).

An approach to overcoming a lack of constructs is to transfer constructs from other areas and integrate them into a BPM theory. In developing a priori constructs in this way however, there is an inherent danger that this transference will inhibit insights during future theory building exercises (Eisenhardt, 1989; Glaser & Strauss, 1967; Walsham, 1995). Furthermore, within BPM many existing studies take a process or a project perspective not an organisational perspective. Eisenhardt (1989) indicates that when the unit of analysis is at an

[12] Pritchard and Armistead (1999) were one of the first researchers to recognise BPM as an approach to managing an organisation – one that challenges the traditional functional approach to organisational management. Earlier researchers (e.g. Davenport, 1993; Hammer & Champy, 1993; Zairi, 1997) focused on BPM as an operational approach to the management and/or improvement of processes within an organisation but not on the management of the organisation itself.

individual or process level, a potential limitation is that findings do not necessarily translate to organisational level research.

Similarly, an approach to overcoming a lack of theory is to transfer or borrow theory from other domains. At an organisational level however, a number of researchers have found a lack of theory in other applied disciplines such as operations management (Anderson et al. 1994) and human resources (Lynham, 2000). Transferring theory in this manner may also introduce the same limitations on future theory building as transferring constructs (Eisenhardt, 1989).

The early stage of the BPM domain, including the lack of theory and construct definition, positions this as a theory building study.

2.2.2 Theoretical Positioning

Typically, research addresses theory building (i.e. discovery, description, mapping and relationship building), theory testing (i.e. validation), theory extension / refinement (Handfield & Melnyk, 1998), or some combination of these. Whilst the stage of the domain and the lack of theory position this as a theory building study, the time constraints of a PhD, limit the study from progressing to the theory testing and refinement stages.

What is Theory?

According to Dubin (1976, 26), theory is an attempt to *"model some theoretical aspect of the real world"* in order to *"make sense of the observable world by ordering the relationship among elements that constitute the theorist's focus of attention in the real world*". Dubin sees theory as producing two outcomes:

1. Process knowledge (i.e. knowledge about how the phenomenon works)
2. Outcome knowledge (i.e. the ability for the theory to explain or predict with regard to the phenomenon).

Senge et al. (1994) agree with Dubin's view on theory producing process knowledge, seeing theory as developing fundamental propositions to explain how the world works. They go further to suggest that a theory needs to be tested repeatedly in order to build confidence.

Torraco (2002) sees theory in line with Dubin's second outcome, expressing theory as something that explains what a phenomenon is and how it works. Bacharach (1989) takes a positivist view stating that theory is about the relationships between observed or approximated units. In supporting a multi-paradigmatic approach, Gioia and Pitre (1990, 587) define theory as being *"any coherent description or explanation of observed or experienced phenomena"*. Lynham (2000, 222) adapts Gioia and Pitre's (1990) definition to express theory as *"a coherent description, explanation, and representation of observed or experienced phenomena".*

In keeping with its exploratory nature, this study adopts a view of theory consistent with Lynham (2000) and Gioia and Pitre (1990). The proposal of a conceptual measurement model for *BPM Maturity*, including insights and conjectures relating to potential relationships between constructs and sub-constructs position the theory for future testing and predictive possibilities.

What is Theory Building?

According to Whetten (1989), answering questions of how, when and why is the primary goal of theory. In applied disciplines such as human resource development, researchers have identified theory building as serving the purpose of: increasing maturity and professionalism (Chalofsky, 1996; Marsick, 1990), interpreting new data, responding to new problems, identifying new research directions and developing common language (Torraco, 2002). Lynham (2000) gives three reasons why theory building is important including to:

1. Advance professionalism in and maturity of the field
2. Help dissolve the tension between research and practice
3. Develop multiple and inclusive methods of research for theory building and practice.

Whilst Lynham (2000) was referring to the development of human resources, these aspects extrapolate well to other applied disciplines such as BPM.

What Makes a 'Good' Theory?

In order to build theory, researchers indicate it is first important to understand the basis for evaluating theory (Bacharach, 1989; Whetten, 1989). A number of theorists provide general principles for theory and theory building that relate to the purpose and outcome of the theory building process. Table 4 highlights the focus of this study, which is on understanding and explanation of the progression of BPM within organisations.

Purpose	Bacharach (1989)	Dubin (1976)	Gregor (2006)	Reynolds (1971)	Whetten (1989)
Understanding		✓		✓	✓
Analysis			✓		
Explanation	✓	✓	✓	✓	✓
Prediction	✓	✓	✓	✓	✓
Explanation & Prediction			✓		
Design & Action			✓		
Classification (typology)				✓	
Control				✓	

Table 4: Purposes of Theory

Such principles are useful for providing direction and clarity for setting the purpose of the theory building exercise. They do not however assist in determining whether the resultant theory itself is a good, quality theory. To this end, a number of researchers have proposed criteria and virtues for use in evaluating theory (Bacharach, 1989; Handfield & Melnyk, 1998; Stuart et al., 2002; Wacker, 1998; Whetten, 1989). The major aspects of these are summarised in Table 5.

Virtue	Description	Bacharach (1989)	Handfield & Melnyk (1998)	Stuart et al. (2002)	Wacker (1998)	Whetten (1989)
Uniqueness	One theory must be differentiated from another (Wacker, 1998)				✓	
Conservatism	Can replace a theory only if the new theory is superior in its virtues (Wacker, 1998)				✓	
Generalizability	The more areas that a theory can be applied to makes the theory a better theory (Wacker, 1998)				✓	
Fecundity	A theory that is more fertile in generating new models and hypotheses is better than a theory that has fewer hypotheses (Wacker, 1998)				✓	
Parsimony	Other things being equal the fewer the assumptions the better (Wacker, 1998) Delete factors that add little additional value to our understanding (Whetten, 1989)		✓	✓	✓	✓
Comprehensiveness	All relevant factors included (Whetten, 1989)					✓
Internal consistency	The theory identifies all relationships and gives adequate explanation (Wacker, 1998)	✓		✓	✓	✓
Falsification	Theories can never be proven only disproven (Bacharach, 1989) Empirical riskiness – refutation must be very possible (Wacker, 1998)	✓	✓	✓	✓	
Abstraction	Abstraction level of theory means it is independent of time and space (Wacker, 1998)	✓			✓	✓
Not Wrong	Refers to the overall approach used by the researchers including its suitability and the correctness with which it is applied (Handfield & Melnyk, 1998; Whetten, 1989)	✓	✓			✓
Useful	Must deal with a problem of 'real-importance, add to prior studies, direct the researcher to issues and problems not previously examined (but which are still of interest) and explain or predict (Handfield & Melnyk, 1998)	✓	✓	✓		

Table 5: Virtues Against Which to Judge Theory

Although this study does not look to evaluate theory, the virtues in Table 5 act to guide the theory building process. The lack of theory in the BPM domain and the lack of suitable theory to transfer make the first two requirements of *uniqueness* and *conservatism* relatively straightforward, for example. The aim of high relevance results in particular attention to the *useful* criteria. Similarly, an awareness of the difficulties in doing good qualitative, multi-paradigmatic research increases the emphasis on the *not wrong* virtue. The study aims for medium levels of *generalisability* to increase the relevance and applicability of the study outcomes but recognises the potential constraint of organisational context on the theory building process. Recognising high-level constructs and sub-constructs is consistent with the criteria for *comprehensiveness*. Constraints such as the early stage of BPM research and PhD timeframes however, make it difficult to apply some criteria. Criteria such as falsifiability are more relevant to theory testing, for example. Recognising the need to achieve these virtues at latter stages nevertheless provides useful guidance for the study.

2.2.3 Philosophical Positioning

Information Systems research presents, among others, three philosophical positions including the positivist, the interpretive and the critical research philosophies. According to Orlikowski and Baroudi (1991):

Positivism Has the assumption that an aspect of a given phenomenon has a unique, ideal description whereby *"…the existence of a priori fixed relationships (…) is typically investigated with structured instrumentation…"* A limitation of this view is that it ignores the role of contextual variables (Orlikowski & Baroudi, 1991, 13-14).

Interpretivism Avoids applying external categorisation, instead seeing importance in the subjective meaning and the way in which people construct reality. This view avoids external conditions, structural conflicts in organisations and society, unintended consequences of action and historic changes. Whilst providing rich contextual insights, this view makes

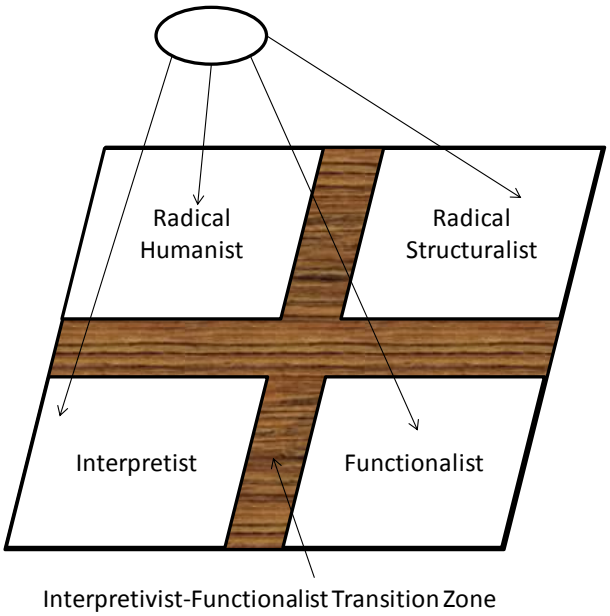
generalisability and replicability difficult (Orlikowski & Baroudi, 1991, 13-14).

Critical Focuses on revealing conflicts and contradictions in the structures of existing social systems and has a view that *"…things can never by treated as isolated elements…".* Like interpretivism, this view provides rich contextual insights although often takes a longitudinal view due to the notion of 'totality'. A major difference between these two views is in the approach to evaluation (Orlikowski & Baroudi, 1991, 19).

Despite the distinct philosophical views, a number of researchers argue that organisational research and theory building can benefit from taking a multi-paradigmatic approach to studies (Bacharach, 1989; Gioia & Pitre, 1990; Lee, 1991; Mingers, 2001; Van de Ven, 1989).

According to Gioia and Pitre (1990), a multi-paradigmatic approach is one that looks to cross the boundaries of existing paradigms in order to generate multiple perspectives on topics under investigation[13]. Similarly, Lee (1991) acknowledges that when adopting such an approach the philosophical beliefs of the researcher will still dominate, but that there is acceptance of alternate views and a belief that the multiple views can be mutually supportive and not mutually exclusive. Furthermore, Gioia and Pitre (1990) argue that the blurred transition zones between two paradigms allow bridges between the paradigms (such as the *Interpretivist-Functionalist Transition Zone* that includes theories of structurationism) as seen in Figure 5 from Gioia and Pitre (1990, 597).

[13] Similarly, Mingers (2001) uses the term strong pluralism as being "where all research situations are seen as inherently complex and multidimensional, and would thus benefit from a range of methods."



1. The shaded areas between the paradigms represent the blurred transition zones.
2. The meta-level vantage position, represented by the ellipse, is arbitrarily placed above the plane of paradigms to denote that the viewer typically is rooted in the assumptions of some paradigm. Yet the circle also represents the possibility of multiple viewers, ideally from multiple paradigms.
3. The directional arrows toward the plane of the paradigms represent the diverse paradigmatic views available from the meta-level vantage position. (The perspective lines are not intended to depict convergence toward some viewpoint that would represent integration of differing, multiple views.

Figure 5: The Metaparadigm Perspective

According to Gioia and Pitre (1990), theory building within each of these paradigms includes different goals, theoretical concerns and different theory building approaches.

This study positions as (1) organisational level, (2) theory building, (3) being in a complex and emerging phenomenon. Gioia and Pitre (1990, 595-596) indicate that a multi-paradigmatic approach to theory building is conducive to the complex nature of human and organisational realities and their dynamic contexts, stating:

> *"…given the multiplicity of organizational realities, a pluralistic, multiple-perspectives view becomes a necessity for achieving any sort of comprehensive view. Such a multiple-perspectives view requires that organizational theorists consider the set of theories relevant to a given topic from some view-point beyond that of an individual paradigm (…) it is an attempt to account for many representations related to an area of study (e.g. organizational structure, culture, socialization) by linking theories through their transition zones. The various knowledge claims thus assembled can constitute a multidimensional representation of the topic area…"*

Gioia and Pitre (1990) argue that theory building should not be a viewed as a search for the truth but rather that different approaches be used to create more comprehensive views when studying complex organisational phenomena. Furthermore, Gioia and Pitre (1990, 599) state:

> *"…Multi-paradigm approaches to theory building can generate more complete knowledge than can any single paradigmatic perspective…"*

Finally, as indicated earlier, the aim of the study is twofold. On the one hand, it seeks to gain a deeper understanding of the progression of BPM within organisations, enabling the development of a theory on *BPM Progression*. On the other hand, it seeks to contribute to the measurement of *BPM Progression* using the construct of *BPM Maturity*. The notion of measurement implies some level of acceptance of the existence of a priori relationships and the possibility of subsequent testing and prediction of theory, consistent with positivist thinking. The study of progression within natural settings, using a longitudinal approach to assist understanding and overcome impediments, also implies acceptance of the role of context and the notion of totality, consistent with a critical viewpoint.

Consequently, the Researcher has adopted a multi-paradigmatic approach as described by Gioia and Pitre (1990), choosing to focus on the circumstances and purpose of the research and combining opposing aspects of research in a manner that suits the research at hand (Hammersley, 1999). The philosophical approach transitions the critical and positivist paradigms, consistent with the definitions of these paradigms provided by Orlikowski and Baroudi (1991).

2.3 Research Strategy

A number of researchers support a staged approach to exploring emerging domains. For example, Wacker (1998, 371) distinguishes between *"good fact finding research"* and *"good theory building research"*. Similarly, van der Zwaan, in Kerssens-van Drongelen (2001, 503), suggests conducting *"pilot research"* where there is no existing or well-developed theory. According to Wacker (1998), good fact finding research looks at existing relationships, explores new relationships and offers explanations about why things may have occurred. Wacker (1998, 371) goes further to indicate that because this stage of research

is not constrained by existing theory it can provide:

> *"…fertile ground for subsequent new theory building…"*

Alternatively, Kerssens-van Drongelen (2001) argues that this pre-fix to building theory is not required but rather, is a part of an iterative theory building process. An iterative view of theory building is consistent with approaches suggested by researchers including Eisenhardt (1989) and Lynham (2000). In these approaches however, the iteration occurs at the data analysis stage and refers to relating the emergent theory back to the various cases.

The Researcher contends that the separation of the research into two distinct stages as suggested by Wacker (1998) and van der Zwaan (2001) is beneficial to this study and fits well with the multi-paradigmatic approach to the study. The value the Researcher sees in this approach stems from the problems of inconsistent terminology usage, the lack of a shared language and the low level of theory within the domain. In an emerging domain, these issues potentially lead to a research problem that is not defined well or relevant. Undertaking an exploratory stage of research, prior to a structured theory-building phase, gives the Researcher the opportunity to clarify and refine the research problem prior to progressing to an iterative theory building approach. Consequently, this study used a staged approach consistent with Wacker (1998) whereby:

Stage 1 focuses on exploring BPM. In this stage, by studying extant literature and organisational practice the Researcher gains a deeper understanding of the phenomenon. What is seemingly important from existing literature or from practice? What does industry want researched? What new relationships might exist? What do organisations do when implementing BPM? What issues do BPM practitioners encounter?

Stage 2 focuses on building BPM theory. In this stage, the interest is in the manner of progression and the potential relationships between different aspects. How do these aspects relate to each other? How do changes in the environment affect relationships? How does the passing of time affect relationships? How generalisable is the emerging theory?

2.4 Methods: Selection and Application

The successful completion of the study is dependent on two primary assumptions: 1) being able to gather quality, relevant and representative data; and 2) being able to meaningfully interpret such data and communicate findings to interested parties. Leedy and Ormrod (2001, 103) indicate that selecting the correct approach to collecting data provides validity to the study itself. Table 6 shows how Handfield and Melnyk (1998) relate the research structure (i.e. the methods used) to the purpose of the study and the research questions. This representation is useful as it assists in selecting methods that are appropriate to the purpose of the study.

Purpose	Research Question	Suggested Research Structure
1a. Discovery • Uncover areas for research and theory development	• What is going on here? • Is there something interesting enough to justify research?	• In-depth case studies • Unfocused, longitudinal field study
1b. Description • Explore Territory	• What is there? • What are the key issues? • What is happening?	• In-depth case studies • Unfocused, longitudinal field study
2. Mapping • Identify/describe key variables • Draw maps of the territory	• What are the key variables? • What are the salient/critical themes, patterns, categories?	• Few focused case studies • In-depth field studies • Multi-site case studies • Best-in-class case studies
3. Relationship building • Improve maps by identifying the linkages between variables • Identify the 'why' underlying these relationships	• What are patterns or linkages between variables? • Can an order in the relationships be identified? • Why should these relationships exist?	• Few focused case studies • In-depth field studies • Multi-site case studies • Best-in-class case studies

Purpose	Research Question	Suggested Research Structure
4. Theory Validation • Test the theories developed in the previous stages • Predict future outcomes	• Are the theories we have generated able to survive the test of empirical data? • Did we get the behaviours predicted by the theory or did we observe another unanticipated behaviour?	• Experiment • Quasi-experiment • Large scale sample population
5. Theory Extension / Refinement • To expand the map of the theory • To better structure the theories in light of the observed results	• How widely applicable / generalizable are the theories that we have developed? • Where do these theories apply? • Where don't these theories apply?	• Experiment • Quasi-experiment • Large scale sample of population

Table 6: Matching Research Design with Theory Building Activities

As highlighted in Table 6, this study focuses on Handfield and Melnyk's (1998) first three purposes, discovery and description, mapping, and relationship building[14]. The first two purposes (discovery and description, and, mapping), align with Stage 1 of Wacker's (1998) two-stage approach. The third purpose, relationship building, aligns with Wacker's second stage focus on theory building.

In investigating theory building in applied disciplines, Torraco (2002, 361) identifies a number of research methods as shown in Table 7. According to Torraco (2002), Dubin (1978) uses a deductive, quantitative approach to explain, predict, and control the phenomenon and create theory. Glaser and Strauss' (1967) grounded theory takes an inductive approach relying on interaction between data collection and analysis. Meta analytic theory building summarises similar existing empirical studies into coherent patterns. Social constructionist theory building looks at using narratives to model how people make sense of the social world and case study research looks to understand complex phenomena by exploring it in its natural setting and using the rich context to generate theory.

[14] Purposes 4 and 5 of Handfield and Melnyck's (1998) approach are outside of the scope of this thesis.

	Type of Research		Driving Rational		General Theory-Building Research Phase				
Methods	**Quantitative**	**Qualitative**	**Deductive Driven**	**Inductive Driven**	**Conceptual Development**	**Operationalization**	**Confirmation or Disconfirmation**	**Application**	**Continuous Refinement & Development**
Quantitative (Dubin)	✓		✓		✓	✓	✓	✓	✓
Grounded (Glaser & Strauss)		✓		✓	✓			✓	
Meta Analysis	✓		✓		✓	✓	✓		✓
Social Constructionist		✓		✓	✓	○		✓	
Case Study	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 7: Contributions of Research Methods to Theory Building Research

Note: ○ Denotes a limited role only

This study seeks to address questions that are exploratory and qualitative in nature (i.e. How can organisations progress BPM? How can organisations measure BPM progress? What does theory on *BPM Progression* encompass? What constitutes a *BPM Maturity* measurement model that leverages research and practice?) In doing so, the study utilises a multi-paradigmatic approach (transitioning positivist and critical paradigms) to undertake organisational level research. Consequently, the use of case study research as described by Torraco (2002) appears most suitable for this study, as shown by the highlighted sections of Table 7.

In a similar way to researchers who argue the value of multi-paradigmatic research, there are researchers who argue the value of a multi-method approach to research (Gable, 1994; Kaplan & Duchon, 1988; Lee, 1991; Mingers, 2001; Tashakkori & Teddlie, 1998). Gable (1994) discusses the benefits of utilising a multi-method, depending on the attributes the study is seeking to achieve. To this end, Table 8 shows how the relative strengths of case studies and surveys can be complementary with the highlighted sections indicating the alignment of these attributes with the aims of this study[15].

Attribute	Case Studies	Survey	Aim of This Study
Controllability	Low	Medium	Low
Deductibility	Low	Medium	Low
Repeatability	Low	Medium	Low
Generalisability	Low	High	Med
Discoverability	High	Medium	High
Representability (potential model complexity)	High	Medium	High

Table 8: Relative Strengths of Case Study and Survey Methods

[15] In discussion with Gable during a methodology subject at QUT the Delphi technique was identified as a form of survey.

The emergent nature of BPM at an organisational level point to attributes of *discoverability* and *representability*. The desire to produce a theory on progression suggests *generalisability* is also an important attribute for this study. The organisational level of the study however, introduces a potential constraint upon the *generalisability* of the theory due to the complex environments that exist within organisations.

The Organisation-Environment Relationship model developed by Barton et al. (2001, 66) and represented in Figure 6 is useful for understanding the potential impact of complex environments.

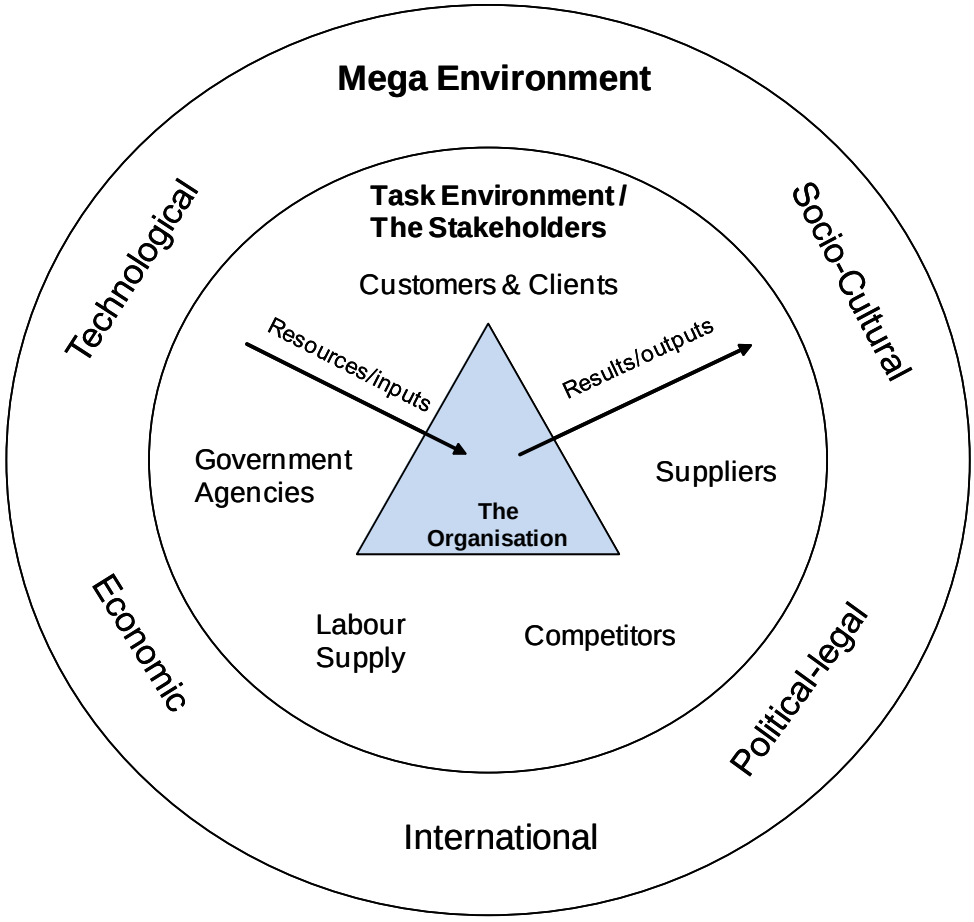


Figure 6: The Organisation-Environment Relationship

This model depicts the organisation in the context of the mega environment and the task environment whereby the view of the mega environment is often remote and not well understood. Essentially, the mega environment represents the

ideologies that exist and interrelate to shape organisations. The task environment is closer to the organisation consisting of stakeholders that are important to it. The task environment is critical to the survival of an organisation as it represents both the needs and expectations an organisation seeks to fill, together with the resources required in order to fulfil these (Kiraka & Manning, 2005).

Understanding the Organisation-Environment Relationship is important to this study as it highlights the need to consider the context of the organisation in undertaking organisational research. In doing so, it emphasises the important point that the contextual environment is likely to vary between organisations. This has the potential then, to affect the generalisability of any theory developed in this study.

Despite the potential constraint raised by the consideration of context, the study aims for medium levels of generalisability, suggesting that a multi-method approach, combining case study research and survey research, is suitable for the study. The next sections discuss this selection in more detail.

2.4.1 Case Studies

In his seminal work on case studies, Yin explores the suitability of a number of methods for undertaking research based on three criteria. Yin (2003, 4) argues that, in itself, exploratory research does not necessitate the use of case studies but rather the existence of three conditions does. The conditions are the:

1. Extent of control an investigator has over actual behavioural events
2. Degree of focus on contemporary as opposed to historical events
3. Type of research question posed.

Table 9 from Yin (2003, 5) summarises the relationship of these questions to various research methods and highlights those applicable to this study.

Strategy					
	Experiment	**Survey**	**Archival analysis**	**History**	**Case Study**
Requires control over behavioural events	Yes	No	No	No	No
Focuses on contemporary events	Yes	Yes	Yes/No	No	Yes
Form of research question	How, why	Who, what, where, how many, how much	Who, what, where, how many, how much	How, why	How, why

Table 9: Research Methodologies

As shown by the highlighted areas in Table 9, the use of case study within this research is consistent with Yin's application of case study. The following sections provide further support for the selection and use of case studies within this research.

At an organisational level, BPM is an applied discipline. The Researcher therefore does not have, or require, control over behavioural events as the learning is from practice satisfying the first of Yin's criteria. In itself, this is not sufficient to justify selection of the case study method as Yin (2003) indicates that methods including survey, archival analysis and history are also suitable methods to adopt in this instance.

Benbasat et al. (1987) argue that research in the IS field has moved from technological to managerial to organisational questions. In doing so, Benbasat et al. (1987, 369) suggest that, as this transition occurs, there is more interest in the interaction between context and innovations and that case research is:

> *"…particularly appropriate for certain types of problems: those in which research and theory are at their early, formative stages, and sticky, practice-based problems where the experiences of the actors are important and the context of action is critical…"*

This study positions BPM as an emerging domain, whereby understanding of the term BPM is evolving from a narrow technological driven view, to a view encompassing a managerial approach to processes and ultimately with a focus managing the organisation itself. Consequently, the emergent state of BPM and the organisational level of this study results in a focus on contemporary events in accordance with Yin's (2003) criteria.

The combination of having a focus on contemporary events and control over behavioural events however, is suited to a number of methods including case study, survey and archival analysis. This led the Researcher to consider the form of the research question, being the last of Yin's (2003) criteria.

This study addresses *'how'* questions, looking at how organisations progress BPM and how to measure *BPM Maturity*. The study also incorporates *'what'* questions during the exploratory stage, looking at 'what is going on' and 'what needs to be included'. According to Yin (2003), this would exclude the case study method as it is suited to *'how'* and *'why'* questions, leaving the survey and archival analysis methods as the most appropriate to the study. Considering the 'form of research question' purely on 'how and why' questions as proposed by Yin (2003) is inconsistent with researchers in applied disciplines however. Handfield and Melnyk (1999) indicate that questions such as 'what is going on here?', 'what are the key issues?', 'what is happening?' or 'what are the key variables?' are relevant to early stage research and are also well matched to use of the case study method. Meredith (1998) also indicates case research is suited for 'what', 'how' and 'why' questions. Furthermore, Benbasat et al. (1987) indicate that case study research is useful for capturing practical experiences, for accumulating knowledge from the iterative trial and error process and for building theory.

According to Eisenhardt (1989), case study research provides benefits to theory building including a greater likelihood of translating contradictory or paradoxical evidence into novel theory using creative insight. Similarly, Wacker (1998) indicates that case research can act to increase virtues of good theory (such as empirical riskiness as measurement of the constructs is likely during the theory-building process) and the likelihood that the resultant theory is valid increases

due to the intimate link between data and theory. Consequently, the case study method is an appropriate choice of methods for the conduct of this study.

2.4.1.1 Plan for use of Case Study Method

Case studies can be both exploratory and explanatory. According to Yin (2003), exploratory studies have a goal to develop hypotheses and propositions for further inquiry whereas explanatory case studies are those that seek to address operational linkages over time. As shown in Figure 7, the research design proposes the use of the case study method at three distinct points to suit the varying purposes of the study in both an exploratory and an explanatory manner.

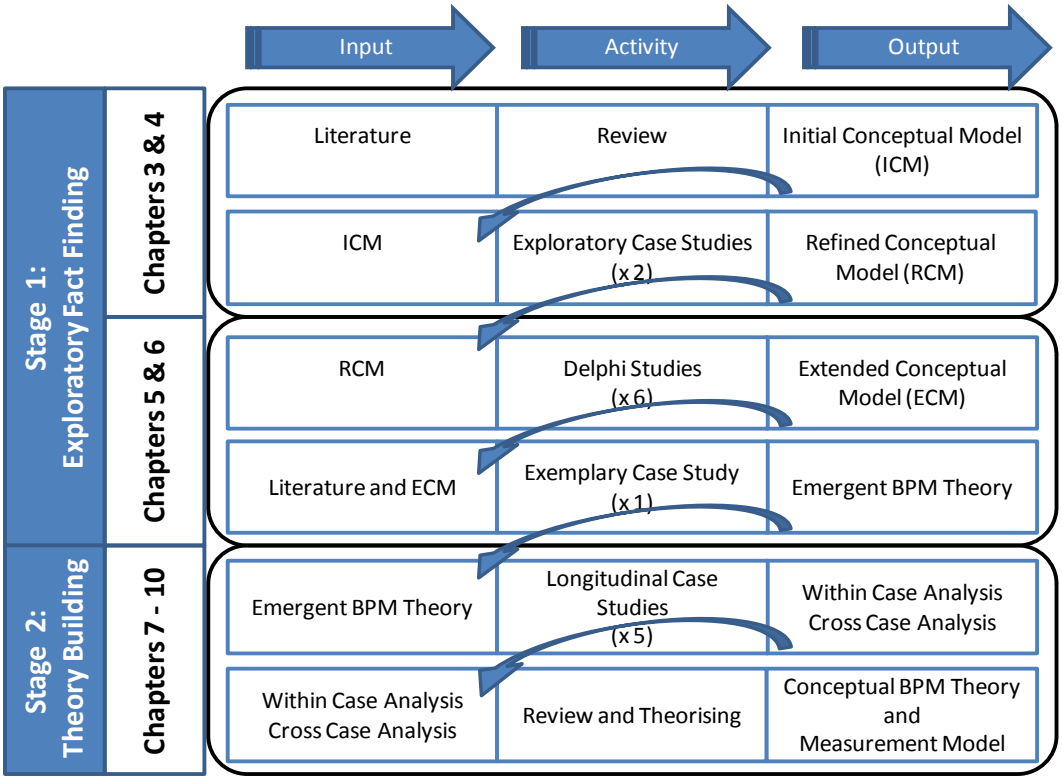


Figure 7: Research Design

As shown in Figure 7 the research design first uses multiple case studies to explore potential issues in the measurement of *BPM Maturity* within organisations and to refine the conceptual model derived from extant literature. Next, the design uses a single case study to explore *BPM Progression* from the frame of the study at that point. The aim of the exploratory case study is to apply the

extended conceptual model, to understand how the components of the model interact in a practical setting, to articulate how these might come together in a theory on *BPM Progression* and to understand how this interaction affects the development of a *BPM Maturity* measurement model. Finally, design aims to undertake multiple, longitudinal case studies to refine the emergent theory and increase its generalisability.

The iterative use of case study research is consistent with recommendations of researchers including Benbasat et al. (1987, 373) who state that:

> *"…single-case study projects are most useful at the outset of theory generation (…) A single case used for exploration may be followed by a multiple-case study. This corresponds to Bonoma's drift stage in which researchers learn first hand the relevant jargon and context in which the phenomenon will be studied (…) Multiple-case designs are desirable when the intent of the research is description, theory building…"*

This integrated use of case study method is also similar to applications by researchers in other applied disciplines such as proposals by Hirschman (1986) and Bonoma (1985) including (1) a priori, theory-based hypotheses; (2) systematic multiple case research; and (3) multiple independent evaluation techniques.

2.4.1.2 Addressing the Limitations of the Case Study Method

Despite the suitability and strengths of case studies for the purpose of the study, there are a number of potential limitations arising from the use of this method. Eisenhardt (1989) suggests that building theory from case studies can result in theory that is *"novel, testable and empirically valid"*, however, she cautions that it can also lead to theory that is overly complex or conversely, narrow and idiosyncratic. Wacker (1998) suggests that the art of theory building includes balancing virtues such as *parsimony* and *internal consistency*. Meredith (1998) identifies a number of other recognised limitations of the case study method including:

- Physical requirements (cost, time, access)
- Need for multiple sources of data collection
- Lack of controls
- Lack of familiarity with the process of conducting case studies.

The following sections discuss plans to address these limitations[16].

Physical Requirements

Issues such as cost, time and access affect the selection of cases and the depth of investigation that can be undertaken. Researchers aim to select cases in accordance with carefully thought-out criteria, however, the reality is that a balance between these criteria and the constraints of cost, time and access is likely. In designing each of the three applications of the case study method, the Researcher first defined the requirements that met the purposes of each application. Due to the physical requirements, cases were then selected from a known pool of organisations (i.e. participating organisations of the Australian BPM Roundtable) using the defined requirements. An Information Sheet was prepared that detailed the aims and background of the proposed case and satisfied the ethical requirements of the study. The Researcher then used the Information Sheet when inviting potential case organisations.

Need for Multiple Sources of Data Collection

Organisational level research (independent of the research discipline) is by its nature complex. Jick (1979) advocates the use of multiple data collection instruments to enable triangulation of data. Similarly, Eisenhardt (1989) suggests that using multiple sources of data increases the reliability of findings arising from case studies. In all applications of the case study method, the Researcher used a combination of interviews, embedded surveys and the review of relevant documentation to support findings. In the single exploratory study and the multiple, longitudinal studies, the Researcher also used workshops.

[16] Chapters 4, 6 and 7, together with their respective Appendices include further details on the instruments mentioned in these sections.

Lack of Controls

To control the conduct of the case studies and the quality of data collected, the design incorporates a number of control mechanisms. This includes the use of Interview and Workshop Guides, recording interviews and workshops where possible, transcription of recordings, scheduling of interviews and workshops to integrate first round data analysis thereby providing a check-point for data interpretation, presentation of findings and interpretations in meetings, and written reports in order to solicit feedback.

Lack of Familiarity with the Process of Conducting Case Studies

A number of researchers provide guidelines for undertaking theory building in applied disciplines (Benbasat et al., 1987; Eisenhardt, 1989; Lee, 1989; Lynham, 2000). This study uses Eisenhardt's guidelines as they are specifically for building theory from case study research, suited to emerging research areas and synthesises research concepts from a range of researchers including Glaser and Strauss (1967), Miles and Huberman (1984) and Yin (1981). Table 10 summaries the key activities and the eight steps in Eisenhardt's approach that the Researcher applies to the case studies in this study[17].

[17] Chapters 4, 6 and 7 provide further details in the application of Eisenhardt's (1989) steps and key activities to each set of case studies in this study.

Step	Key Activities	Confirmatory Case Studies (2)	Exploratory Case Study (1)	Longitudinal Case Studies (5)
1	Initial definition of research questions to gain focus helps avoid being overwhelmed by the data. A priori specification of constructs can help shape initial designs.	Purpose of the two (2) confirmatory case studies was to confirm and refine the a priori conceptual model in a practical setting.	Purpose of the single (1) exploratory case study was to explore the capability areas within a practical setting.	Purpose of the five (5) longitudinal studies was to investigate the *BPM Journey* to assess any change in focus on the capability areas over time.
2	Selection of appropriate cases defines limits for generalisation. Use theoretical sampling including replication, polar types or categorisation to select appropriate cases.	Selection of a small number of companies: - with an active BPM Initiative focused on adopting BPM as a management practice - willing to participate in research - accessible to the Researcher.	A company with: - an active and prima facie mature BPM Initiative - willing to participate in research - accessible to the Researcher.	Use of literal and theoretical sampling including the selection of companies: - of different industries, sizes, company ownership and turnover to show that the progression of *BPM Initiatives* varies between companies - with different BPMI structures to explore the similarities and differences in progression - with different levels of *Executive Buy-In* to *BPM Initiatives* to explore similarities and differences in progression.
3	Combining multiple data collection instruments helps to triangulate and strengthen findings. Combining qualitative and	Use of interviews, embedded survey, a review of relevant documentation. Use of qualitative and quantitative	Use of interviews, embedded survey, workshops, a review of relevant documentation and a measurement survey. Use of qualitative and quantitative	Use of interviews, embedded survey, workshops and a review of relevant documentation. Use of qualitative and quantitative

Step	Key Activities	Confirmatory Case Studies (2)	Exploratory Case Study (1)	Longitudinal Case Studies (5)
	quantitative data provides synergies as does multiple investigators.	questions to cross-check data Use of Interview Guides to gain consistency across companies. Use of two researchers and extensive field notes due to the inability to gain permission for audio recording of interviews.	questions to cross-check data. Use of an Interview Guide to gain consistency across interviews. Use of Workshop Agenda to provide a consistent structure and format to workshops. Audio recording of interviews and workshops (where agreed) to enable subsequent transcription and referral.	questions to cross-check data. Use of Interview and Workshop Guides to gain consistency across companies. Audio recording of interviews and workshops (where agreed) to enable subsequent transcription and referral.
4	Overlapping data collection and analysis helps prevent a chasm between outcomes and data. Undertake within case analysis to cope with voluminous data.	Conduct of interviews prior to completion of surveys Analysis of data between cases.	Conduct of interviews and surveys, including first data analysis prior to conduct of workshops.	Conduct of interviews and surveys, including first data analysis prior to conduct of workshops. Recording data on laptop and projection screen within workshop to enable immediate comment and reflection on data captured. Within case analysis, (see Chapter 8 for further details).
5	Search for cross case patterns to avoid leaping to conclusions. Consider categories suggested by data and, look for within-group similarities & inter-group difference.	Looked for similarities and distinction between the companies.	Emergent categories and themes detailed and used as a basis for subsequent longitudinal case studies.	Cross case analysis, (see Chapter 9 for further details).

Step	Key Activities	Confirmatory Case Studies (2)	Exploratory Case Study (1)	Longitudinal Case Studies (5)
6	Look for tentative themes, concepts and possible relationships. Iteratively compare emergent theory to each case. Refine constructs and measures.	Looked for conceptual issues that were likely to affect the progression and measurement of *BPM Initiatives.* Refined constructs in the a priori model. Identified the need to undertake further research relating to measures.	Emergent categories and themes detailed and used as a basis for subsequent longitudinal case studies.	Emergent themes included throughout Chapters 8 and 9. These themes consolidate in the Theory Building chapter (i.e. Chapter 10).
7	Compare emergent theories with extant literature. Examine conflicting literature for creative insights. Examine similar literature in other contexts to elevate conceptual level of findings and confidence.	Revisited mapping of initial constructs identified from extant literature. Refined constructs on this basis.	Targeted literature review to explore and identify extant theories that were potentially useful for explaining emergent themes. Use of these theories in the design of subsequent longitudinal studies.	Use of punctuated equilibrium to explain theory on *BPM Progression.* Development of BPM Typology to position *BPM Initiatives* using Porters Productivity Frontiers. (see Chapter 10 for further details).
8	Stop adding cases upon theoretical saturation. i.e. where incremental learning is minimal. Stop iterating between data and theory at the point where incremental improvement is minimal.	Two cases showed the need for identification of additional measures, resulting in a subsequent series of Delphi studies.	Only one case as emergent themes formed the basis for subsequent .	Includes 5 cases to extend and confirm findings from earlier case studies and enable the proposal of a theory on *BPM Progression* and a measurement model for *BPM Maturity.* Provides direction for future research to continue refinement of the theory and measurement model.

Table 10: Building Theory from Case Study

2.4.2 Survey

In addition to building theory, an aim of this study is to propose a conceptual measurement model for *BPM Maturity*. This introduces a positivistic aspect to the study, reflecting a focus on the identification and definition of constructs for use within a measurement model. This aspect, combined with the desire to develop a theory that was somewhat generalisable, indicates that the use of survey to complement the case study method would be beneficial to the study.

According to Pinsonneault and Kraemer (1993), surveys are a means of collecting data from individuals using a predefined questionnaire. Fink and Kosecoff (1985) suggest that surveys can be administered on-line, via face-to-face or telephone interview or in a written document. Although mostly used in quantitative studies, Colorado State University (2004) and Pinsonneault and Kraemer (1993) claim surveys can also apply to qualitative studies. Similarly, Newsted et al. (1998) suggest two purposes to which surveys are well suited: (1) to gather data from large population and (2) where there is little theory.

Pinsonneault and Kraemer (1993, 77) make an important distinction between *surveys* and *survey research* whereby surveys are a means of collecting data from a population (i.e. a data collection instrument) and survey research aims to advance scientific knowledge. In doing so, they distinguish between three types of survey research being exploration, description or explanation whereby:

Exploratory	Used to discover and refine measurement concepts and as a precursor to more detailed descriptive or explanatory surveys (Pinsonneault & Kraemer, 1993, 79).
Descriptive	Used to discover facts about what is happening but not to test theory (Pinsonneault & Kraemer, 1993, 80).
Explanatory[18]	Used to test theory and causal relationships (Pinsonneault & Kraemer, 1993, 80).

[18] Also known as confirmatory or theory testing survey research (Forza, 2002).

Based on Newsted et al.'s (1998) assertion of suitability for situations where there is little theory, and Pinsonneault and Kraemer's (1993) definitions, this study proposes the use of an exploratory survey research to extend the conceptual a priori model derived from extant literature and refined using case studies, as shown earlier in Figure 7.

In particular, the focus of the survey research in this study is to gain a better understanding of the constructs of the a priori model, including the definition and measurement of these. Forza (2002, 155) affirms the suitability of exploratory survey research to studies such as this stating:

> *"…Exploratory survey research takes place during the early stages of research into a phenomenon, when the objective is to gain preliminary insight on a topic, and provides the basis for more in-depth study. Usually there is no model, and concepts of interest need to be better understood and measured. In the preliminary stages, exploratory survey research can help to determine the concepts to be measured in relation to the phenomenon of interest, how best to measure them, and how to discover new facets of the phenomenon under study. Subsequently, it can help to uncover or provide preliminary evidence of association among concepts. Later again, it can help to explore the valid boundary of a theory…"*

This study has a number of elements that the design of the exploratory survey research needs to address. First, there is the inconsistent use of terminology and a lack of common language. This affects the definition of a unit of analysis, the choice of participants and the sample size. In this instance, where even the definition of BPM varies, the survey research needs to provide a mechanism for making group decisions in a structured and objective manner to overcome and agree on fundamental concepts and definitions. Second, there is the desire to balance rigour and relevance, suggesting the inclusion of both academia and practitioner input.

2.4.2.1 Delphi Technique

In an attempt to stop the control of decision-making being through interpersonal interactions such as dominating personalities and an unwillingness to change a publicly held position, the Rand Corporation developed the Delphi Technique in the 1950s. Since that time, the Delphi Technique has become a recognised method of survey research, traditionally used for forecasting and for adding structure to discussion and group opinion (Goodman, 1987; Okoli & Pawlowski, 2004). Furthermore, Okoli and Pawlowski (2004) indicate that the Delphi Technique is well suited to concept/framework development.

Use of the Delphi Technique is beneficial when (1) dealing with complex issues (Ono & Wedemeyer, 1994); and (2) where there is a lack of empirical evidence (Murphy et al., 1998). In particular, the Delphi Technique, and its inherent focus on seeking consensus between experts, can facilitate overcoming the idiosyncratic structure of a model. Other features of the Delphi Technique include:

- Anonymity leads to more creative outcomes and adds richness to data (van de Ven & Delbecq, 1974)
- Issues inherent in face-to-face groups such as dominate personalities, conflict and group pressures are virtually eliminated (Murphy et al., 1998)
- Geographic boundaries and associated travel and co-ordination factors are essentially removed (Okoli & Pawlowski, 2004).

Furthermore, Okoli and Pawlowski (2004) indicate that a carefully designed Delphi study is valuable for theory building. In particular, they state that the Delphi Technique provides a number of benefits to theory building including:

- Assisting in the selection of factors with the strongest effect
- Increasing the generalisability of the theory
- Asking respondents to justify their reasoning
- Contributing to construct validity by validating initial responses and clarifying definitions.

Within Information Systems, the Delphi Technique is a recognised survey method for undertaking exploratory research. Brancheau et al. (1996) for example, discuss the 1994-95 results of a Delphi survey identifying the critical issues in IS management. This study was a part of an ongoing study covering 15 years that began in 1982 using a single round survey. In 1984, the study commenced using the Delphi method, instead of the single round survey, to obtain views from a single IS executive within a defined group. In another example, Couger (1988) uses a Delphi survey when investigating the key human resource issues within IS from the perspective of IS and HR executives. Table 11 provides additional examples of the use of Delphi surveys in IS research.

Author/s	Purpose
Bacon & Fitzgerald (2001)	Developing a framework of the main areas in IS.
Couger et al. (1993)	Investigating creativity in IS Organizations.
Hayne & Pollard (2000)	Identify critical issues in IS.
Mulligan (2002)	Developing a capability based typology for technologies in financial services.
Nambisan et al. (1999)	Developing a conceptual taxonomy for innovation in IT.
Scholl et al. 2004	Global survey on the future of knowledge management.

Table 11: Application of the Delphi Method in Information Systems

Okoli and Pawlowski (2004) provide a comprehensive comparison between the traditional survey method and the Delphi survey method. The evaluation criteria they use include:

- Summary of the procedure
- Representativeness of the sample
- Sample size for statistical power and significant findings
- Individual vs. group response
- Reliability and response revision
- Construct validity
- Anonymity
- Non-response issues

- Attrition effects
- Richness of data.

Consequently, the Delphi Technique is an appropriate method for the exploratory survey for a number of reasons. First, the iterative process of controlled feedback will assist in refining and clarifying terminology issues and exploring complex issues such as the identification of measurement items for BPM. Second, the anonymity of experts will enable exploration of potentially contentious issues such as the definition of factors contained in the conceptual model, without undue influence of dominant personalities. Third, the ability to access different geographic areas using electronic medium and without significant cost will enable the inclusion of experts from a number of regions thus increasing the generalisability of outcomes. Fourth, it enables the relative importance of items to be determined in a group environment.

2.4.2.2 Addressing the Limitations of the Delphi Technique

There are a number of recognised criticisms of the Delphi Technique including:

- Flexible nature of Delphi study design (van de Ven & Delbecq, 1974)
- Discussion course is determined by the researchers (Dalkey & Helmer, 1963)
- Accuracy and validity of outcomes (Ono & Wedemeyer, 1994).

Whilst these disadvantages arguably apply to some degree to many research methods, the study aims to minimise their potential impact in a number of ways. These include: (1) designing a plan for the Delphi Study; (2) using a Coding Team to analyse data; and (3) applying Lincoln and Guba's (1985) criteria for assessing qualitative research.

Delphi Study Plan

In a similar way to how Yin (1994) applies a protocol to conducting case studies, the Researcher developed a detailed plan for conducting the Delphi studies. In doing so, the aim was to introduce rigour to the application of the Delphi Technique without inhibiting the qualitative nature of the data collection.

Chapter 5 presents details of this plan however, Table 12 provides a summary of Forza's (2002, 188) elements of effective exploratory surveys including how the Researcher applied these elements in the design of the Delphi Studies.

Survey Element	Exploratory Survey	Delphi Study Design
Unit(s) of Analysis	Clearly defined.	BPM as a management practice.
Respondents	Representative of the unit of analysis.	Participants invited from academia and industry. Participants active in BPM research or in progressing *BPM Initiatives* within organisations. Participants invited from a number of different regions.
Research Hypotheses	Not necessary.	No research hypotheses. Aims to extend the refined conceptual model by: • Agreeing common definitions of constructs • Identifying potential measurement items.
Representativeness of Sample Frame	Approximation.	Inclusion of academic and industry experts from a number of different geographic areas to reflect the practice of BPM within organisations and contemporary BPM research.
Representativeness of the Sample	Not a criterion.	N/a
Sample Size	Sufficient to include the range of the interest phenomena.	Size of the sample in keeping with recommendations from other Delphi studies.
Pre-test of Questionnaires	With sub-sample of sample.	Questions tested on colleagues practicing BPM in industry and researching BPM in academia.
Response Rate	No minimum.	Endeavour to maintain participation above recommended levels for Delphi studies. Invite and commence the study with more than required number of experts to account for expected attrition. Use pilot study to streamline conduct of study and gain input from Expert Panel into timing and scheduling. Use follow-up email reminders in each round.

Table 12: Requirements of Exploratory Survey

Use of a Coding Team

To limit the potential for bias from the Researcher being the sole coder and co-ordinator of data, a ***Coding Team*** analysed data. In addition to the Researcher, this team included two other individuals, each with an extensive knowledge of BPM and a PhD in Information Systems. The Coding Team were not:

1. Able to participate in the expert panel at any stage
2. Aware of the identity of expert panel members
3. Advised of any demographic details of the expert panel members[19].

In addition, the Coding Team were required to code responses independently prior to consolidating the responses as a team. In this way, the discussion course of the Delphi studies was less controlled by the Researcher and more driven by the outcomes of the Expert Panel and the independent data analysis.

2.5 Data: Validity and Reliability

According to Leedy and Ormrod (2001, 31), *validity* of data considers whether the data collected measures what the researcher set out to measure while *reliability* requires consistency in the data. The focus of this study was exploratory, investigating a complex phenomenon in an organisational setting, likely to result in large volumes of qualitative data. Specific to qualitative data, Lincoln and Guba (1985) propose alternative criteria being credibility, transferability, dependability and confirmability where:

> **Credibility** involves ensuring the results of the research are credible from the perspective of research participants.
>
> **Transferability** is the degree to which an individual can transfer the results to other settings and contexts. Lincoln and Guba see this as the responsibility of the individual doing the transferring but recommend providing detailed descriptions of the context and assumptions to assist in making such as a judgement.

[19] Points 2 and 3 did not apply to the Principal Researcher.

Dependability accounts for the fact that it will not be possible to replicate or repeat the same context in another study by providing detailed descriptions of the changing context and circumstances in which each study was undertaken.

Confirmability is the extent to which the results can be supported and collaborated by others and could include documenting data to enable checking by participants prior to analysis.

This study applied Lincoln and Guba's criteria, due to the predominance of qualitative data. There were instances where the collected data was quantitative in nature (e.g. using surveys within the case studies to triangulate data and findings). At these times, the purpose of the data and data analysis was more descriptive than statistical.

In addition, to strengthen findings from the study the integrity and reliability of the data use of *triangulation* enhanced the data analysis (Eisenhardt, 1989; Handfield & Melnyk, 1998; Jick, 1979). To this end, all case studies used a combination of data collection instruments including interviews, workshops, surveys/questionnaires and documentation review.

2.5.1.1 Case Studies

Although there are three distinctive applications of case study, each with a unique purpose, the approach to ensuring high levels of validity and reliability was similar across the studies.

To ensure credibility of results, the basis for selecting organisations was primarily their interest in, and practice of BPM. In the case of the longitudinal studies, discussion of additional aspects that are important to achieving theoretical and literal replication will occur within later chapters. Identification of potential organisations was from participation in BPM forums, BPM network groups, BPM consulting referrals or those known to the researchers through other means. The designation of a Key Contact that held a senior BPM position assisted in the selection of individuals for participation in the case studies to ensure the selection of the most appropriate individuals for the purpose of the studies. The

Researcher advised participants of her background and experience, a summary of the research, the ethical requirements that apply to the study and the aims of the current phase of the study including their role in it.

To assist transferability the Researcher detailed the background and context of the case studies and the participating organisations whenever discussing the results and outcomes of the study. In doing this the Researcher relied on a combination of publicly available information (e.g. annual reports and websites) and data collected during the case studies, either during the interviews or using the survey instruments described earlier.

To assist with the dependability multiple data collection instruments guided the data collection process. The Researcher derived interview, workshop and survey questions from key issues and themes identified in existing literature or from pre-validated questions, where possible. Interview or Workshop Guides documented questions for use when conducting the interviews and workshops to enable consistency across applications. The views captured were the personal views of participants. Survey questions supported the qualitative data collected during the interviews and workshops.

Recording and transcribing interviews and workshops (where permitted) improved the confirmability of results by providing an opportunity to review the conversations verbatim rather than relying on an abbreviated text format. Where not able to record, the Researcher used a second researcher (where possible) to assist in note taking to enable crosschecking of key points. Participants received a summary of case study outcomes in the form of a presentation, a report or both. Participants were encouraged to provide feedback throughout the case studies, including on any final presentations or reports. Data analysis included the use of software tools such as N-Vivo where appropriate. The Researcher undertook both structured and unstructured training to ensure appropriate skills for using data analysis tools.

2.5.1.2 Delphi Studies

Inviting Delphi study participants who are experts in the BPM domain increased the credibility of results. The study invited academics, authors and industry representatives with a high level of BPM experience and knowledge to participate on the basis that their views were representative of contemporary BPM issues. Furthermore, a Coding Team from three different geographic regions: Australasia, Europe and the United States minimised the impact of any cultural inferences with respect to wording during data analysis.

To assist with the transferability and dependability of results arising from the Delphi studies a comprehensive documentation process was undertaken. The Researcher communicated the outcomes of each Delphi Study round back to the Panel using a consistent format. This included a summary of key points arising from the past round and the data analysis outcomes of the current round. This also disclosed mapping of all items during the data analysis process to enable transparency, with the Expert Panel being able to follow their contributions through to the presented outcomes. Such transparency enables other researchers to understand the context and any assumptions made during the data collection and analysis stages.

A number of methods contributed to the confirmability of results. First, a team of independent coders used a consensus model when analysing data collected during each round of the Delphi Studies. Each coder analysed the data independently before meeting with the other coders. The Coding Team then conferred and reached agreement before presenting the data analysis outcomes back to the Expert Panel for review. The Expert panel rated and commented upon the presented outcomes. The Coding Team used this feedback to improve upon the data analysis and outcomes. This iterative cycle continued until reaching predetermined criteria. At the completion of all Delphi studies, two reports were prepared – a *Delphi Study Executive Summary* and *Delphi Study Series Summary*. All participants of the Delphi study (including coders) had the opportunity to provide feedback and comment on both reports.

2.6 Chapter Summary

This chapter presented the overall research design and justified its suitability for this study. This section summarises the major aspects of the research design by showing how the methods selected, the use of multi-methods and the overall research design work together to provide strong and insightful research that makes a valuable contribution to the BPM body of knowledge.

The aim of this research was to contribute to BPM research by proposing theory on the progression of BPM within organisations. In this instance, the 'how' is pragmatic in that the study explores the journey of *BPM Initiatives* within organisations rather than looking at specifically *how* (i.e. the strategies adopted to make the journey occur) or *why* (i.e. the reasons why a particular strategy was used in favour of another) a *BPM Initiative* has occurred within each organisation. Due to a lack of appropriate, organisational level theory and inconsistent use of terminology and language in the BPM domain, it was necessary to gain a deeper understanding of BPM before being able to articulate BPM theory. Consequently, the research design presents in two distinct stages whereby (1) aimed to deepen the understanding of BPM as a discipline and at an organisational level and (2) aimed to develop theory on *BPM Progression* and propose a measurement model for *BPM Maturity*.

The first stage of the research included an extensive literature review to develop the *Initial Conceptual Model*. This model was then refined in two case studies with companies that had active *BPM Initiatives*. The Researcher then conducted a series of Delphi studies to extend the conceptual model an increase the understanding of how to measure the BPM factors. The Researcher then applied the findings from the Delphi study in a practical setting in a single case study to understand what was important to *BPM Progression*.

The second stage of the research included a series of longitudinal studies designed to build upon the findings from the first stage. In doing so, the Researcher aimed to increase the generalisability of the emerging theory integrating the critical aspects identified throughout the study.

STAGE 1

Exploring the BPM Domain

3 Literature Review

Conducting a literature review is essential to any program of research as it provides an assimilation of extant literature, builds knowledge within the researcher, and assists in positioning and scoping the research (Leedy & Ormrod, 2001). In a thesis, the literature often appears as a single phase, positioning the study. The reality is the literature review occurs throughout the duration of a study. In an exploratory study, as new findings emerge, there is a need to revisit and extend the literature review in order to make sense of the findings. Furthermore, as many studies occur over an extended time, there is the possibility of new publications that may be pertinent to the case at hand. Consequently, there is a need to keep abreast of academic and practitioner literature throughout all stages of the research. This study involved multiple, targeted literature reviews to suit the purpose of the different stages including:

- Chapter 1: Problem statement and justification
- Chapter 2: Research design including method selection
- Chapter 3: Domain exploration including conceptual model building
- Chapter 6: Capability area knowledge for instrument design
- Chapter 10: Theory building.

3.1 Chapter Outline

The structure of this chapter is as follows. Section 2 provides a discussion of key terms within the BPM domain. Section 3 details the development of the initial

conceptual model. Section 4 provides details of the investigation into the measurement of *BPM Maturity* including a review and evaluation of select measurement models. Section 5 presents early insights into the operationalisation of the conceptual model. Section 6 presents a summary of the chapter.

3.2 BPM Terminology

In Chapter 1, the Researcher contends that BPM is an emerging domain whereby the inconsistent use of terminology or a lack of a common language presents a number of issues for research. From a literature perspective, inconsistent use of terminology makes comparing and contrasting extant literature more complex as the exact meaning of a term, as used within an article, may be open to interpretation. Pritchard and Armistead (1999, 14) highlight the importance of addressing terminology issues, finding in their study of BPM within organisations that:

> *"...a lack of understanding of BPM was regarded as the biggest difficulty for organisations in the early stages of adopting a process approach…"*

Consequently, this section explores and clarifies BPM terms relevant to this study.

3.2.1 Definitions of Process

An integral component of BPM is the concept of a *process*. Nickols (1998) indicates that a difficulty in defining processes is that, to some, virtually anything within an organisation can qualify as a process making the interpretation of a process essentially meaningless. Within this study, understanding the potential interpretations of the term *process* is important, as the Researcher uses the term in data collection instruments within the case studies. In this case, understanding whether the participating organisation's use of the term is consistent with the Researcher's use avoids ambiguity within the data.

Hammer (2001) defines a process as an organised group of related activities that together create customer value. Hammer indicates that the focus in a process is

not on individual units of work, which by themselves accomplish nothing for a customer, but rather on an entire group of activities that, when effectively brought together, create a result that customers value. Ittner and Larcker (1997) also emphasise the importance of the customer when they defined a process as a set of activities that, taken together, produce a result of value to a customer. Similarly, Armistead and Machin (1997) consider processes to be a series of interrelated activities, crossing functional boundaries with inputs and outputs. Garvin (1998) defines processes as a collection of tasks and activities that together transform inputs to outputs and goes further to define two types of processes: operational and administrative processes. The distinction between these two groups being that operational processes deliver outcomes for customers, whereas administrative processes are required for the operation of the organisation but do not provide outcomes for customers.

These definitions suggest a number of attributes for a process to possess including: a set of inter-related activities that span functional boundaries, distinguishing between customers and other stakeholders, the transformation of inputs to outputs and the notion of value add. These attributes distinguish a process from work procedures and provide the boundaries of the term process as used in this study.

3.2.2 Classification of Processes

Researchers have also distinguished between *types* of processes, a notion expanded further in process classifications or typologies. Some common classifications of process include core, non-core, end-to-end, enterprise, managerial, administrative, supporting and strategic. Researchers use such terms to categorise processes and to present processes in a hierarchical manner. Figure 8 shows how DeToro and McCabe (1997, 57) define processes on two levels. From a hierarchical perspective, they distinguish between core, functional, sub and work processes. On a classification level however, they distinguish between core, operational, supporting and management processes as shown in Table 13. DeToro and McCabe present core processes as being proprietary, strategic assets that are often associated with core competencies.

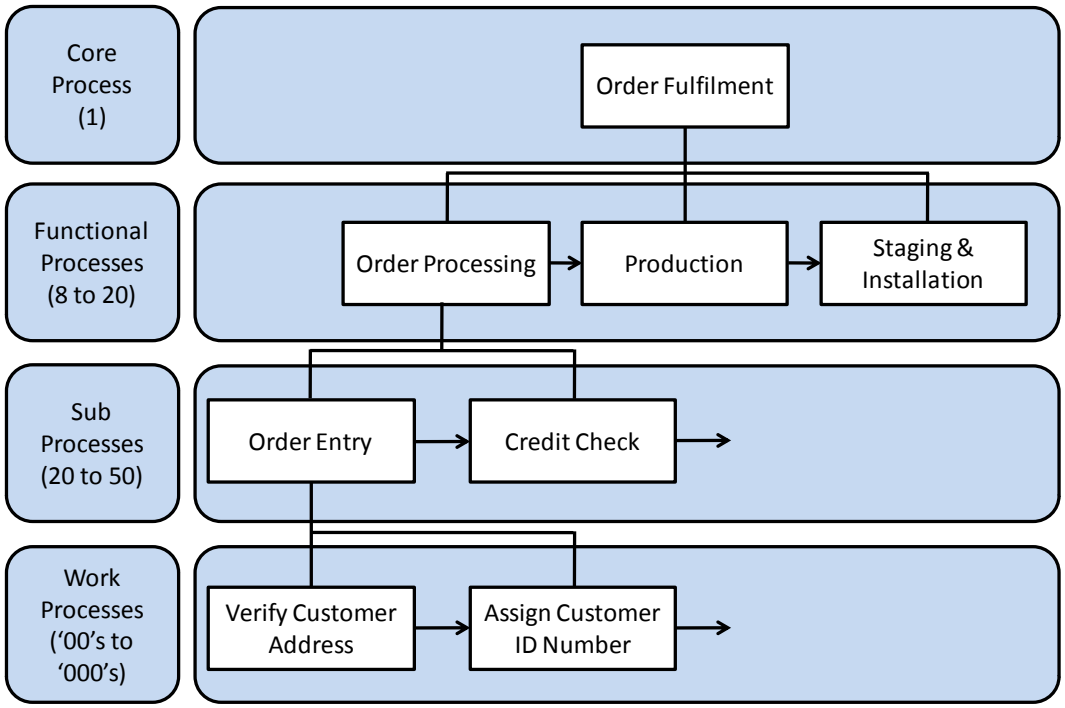


Figure 8: Process Hierarchy

Process Type	Description	Example
Core	• Provides output to customers (usually). • Critical to customer satisfaction. • High impact on strategic goals and objectives.	• New product development. • Order Fulfilment. • Customer Service.
Operational	• Business processes that produce outputs for customers. • Have a high impact on customer satisfaction.	• Product Time to Market • Maintenance.
Supporting	• Can be core processes when strategically important. • Do not directly impact customer satisfaction.	• Human Resources. • Financial Services. • Administration Services. • Management Systems.
Management	• Can be core processes when strategically important. • Do not directly impact customer satisfaction. • Deals with supervision, funding, review and assessment of management practices.	• Total quality management. • Policy deployment. • Operations reviews.

Table 13: Process Classification

Garvin (1998, 41) provides another example of process classification including three approaches to organisational processes: *Work Processes, Behavioral Processes* and *Change Processes* in an *Organizational Process Framework* as shown in Table 14.

	Work Processes	Behavioral Processes	Change Processes
Definition	Sequences of activities that transform inputs into outputs.	Widely shared patterns of behaviour and ways of acting/interacting.	Sequences of events over time.
Role	Accomplish the work of the organization.	Infuse and shape the way work is conducted by influencing how individuals and groups behave.	Alter the scale, character and identity of the organization.
Major Categories	Operational and administrative.	Individual and interpersonal.	Autonomous, incremental and revolutionary.
Examples	New product development, order fulfilment, strategic planning.	Decision making, communication, organizational learning.	Creation, growth, transformation, decline.

Table 14: Organizational Process Framework

Garvin (1998, 46) then defines a further set of processes being *Managerial Processes* that include direction setting processes, negotiation and selling processes, and monitoring and control processes as shown in Table 15.

	Direction Setting Processes	Negotiation and Selling Processes	Monitoring and Controlling Processes
Purpose	Establish organizational direction and goals.	Obtain needed support and resources.	Track ongoing activities and performance.
Primary Task	Developing agenda.	Building a network.	Collecting information.
Critical Skills	Synthesis, priority setting, communication.	Timing and sequencing framing and presentation.	Questioning and listening, interpreting data.

Table 15: Managerial Process Framework

Garvin then links the two classifications together, providing a means by which managers can diagnose the effectiveness of their management actions. Garvin (1998, 48) indicates that his *"Framework for Action"* has two major uses within an organisation: (1) to help managers decide in appropriate intervention in activities, and (2) to help managers assess their own strengths and weaknesses.

		Organizational Processes		
		Work Processes	**Behavioral Processes**	**Change Processes**
Managerial Processes	**Direction Setting**	Are there clear goals for operational and strategic performance?	Are there well-specified approaches to communication, decision making, and learning?	Is there a clear rationale, direction, and path of change?
	Negotiation and Selling	Have we obtained the necessary agreements and resources from any upstream and downstream departments?	Is there widespread acceptance of the desired approaches to communication, decision making, and learning?	Are others in the organization convinced of that change is needed and that the proposed changes are the right ones?
	Monitoring and Controlling	Do we know how well our performance matches plans?	Do we know how well our current behaviours match the desired approaches to communication, decision making, and learning?	Do we know whether critical milestones have been reached and planned changes have been implemented?

Table 16: Framework for Action

Hierarchical levels such as those defined by DeToro and McCabe (1997), are useful when modelling processes, and designing enterprise process architectures as they can help to define the detail required. The use of hierarchical classification levels however, can lead to ambiguity. With the advent of businesses such as shared-service entities and outsourcing businesses, for example, *supporting* processes (e.g. finance, human resource and other similar processes) under some classifications are *core processes* for a shared-service entity, whose sole purpose is to perform these processes on behalf of clients.

Confusion also arises from the inconsistent use of terminology between classifications. By way of example, using two of the above typologies, a *Work*

Process according to Garvin (1998) does not equate to a *Work Process* using DeToro and McCabe's (1997) classification. Rather, it would equate to DeToro and McCabe's *Core Process* or perhaps their *Operational Process*. Similarly, Pritchard and Armistead (1999) refer to processes as *Operational*, *Supporting* or *Direction Setting*. These appear to be similar to DeToro and McCabe's (1997) *Operational*, *Supporting* and *Management* classifications, although Pritchard and Armistead make no distinction of *Core* processes, which is included in DeToro and McCabe's classification.

Within this study, the Researcher used the terms *core* and *non-core* processes in the development of survey questions piloted during early case studies. This was in an attempt to distinguish the processes within an organisation when measuring the progression of the *BPM Initiative* and to ensure the comparison of the same processes within different organisations. The use of these terms however created confusion amongst participants and created replication in survey questions. Consequently, during the exploratory case study, the Researcher sought input into how to improve this approach and therefore gain consistency in the data captured across organisations that may use different terminology. Based on input from participants the Researcher devised a scale to capture processes based on the origins of the process inputs and the destination of the process outputs[20].

3.2.3 Definitions of Business Process Management

As indicated in Chapter 1, the term BPM can have a different meaning depending on the context in which it is used. Understanding the differences in the different interpretations of BPM is critical to this study due to the potential impact on the unit of analysis and subsequent data collection.

Common interpretations within extant literature include BPM as a:

1. Solution for a business using software systems or technology to automate and manage processes

[20] There is further discussion of this point in Chapter 4 and Chapter 6.

2. Approach to managing and improving processes that focus on the process lifecycle
3. Approach to managing an organisation by taking a process-view or orientation.

BPM as a Technology Solution

McDaniel (2001) used the term BPM to denote a technology solution for an organisation. Before describing the *"four tenets of BPM"* (modelling, integrating, monitoring and optimising) McDaniel (2001, 31) claimed:

> *"…BPM entails integrating the value of each asset, providing a seamless interface, and coordinating the efforts of all assets to achieve a goal, in a given sequence, within a set time…"*

He went on to say:

> *"…BPM provides end-to-end life cycle management of information requests or transactions made up on many steps…"*

McDaniel (2001, 32) referred to the human element only in relation to the use of technology to automate manual tasks stating:

> *"…executing a BPM solution is a pathway to internal employee efficiency. Enterprises can eliminate costly and slow manual steps that can be more effectively executed when automated (…) automating saves time for current employees and saves training costs for new employees…"*

McDaniel's (2001, 33 – 35) 10 pillars provided further evidence of the technology focus of his use of the term BPM. The pillars include: (1) unified process automation and workflow model (2) direct model execution and manipulation (3) state management (4) time-based exception management (5) robust process monitoring and analysis (6) nested model support (7) concurrent model support (8) standards based (9) high scalability and (10) high reliability.

Other examples of a technology-based use of the term BPM include Gartner

(2005) and Smith and Fingar (2002). Some software vendors still use the term BPM in this narrow technology sense, however, it is becoming increasingly common to refer to Business Process Management Systems (BPMS) or to Process Aware Information Systems (PAIS).

BPM as a Lifecycle Approach

A number of researchers have used the term BPM to describe a lifecycle approach to managing and improving processes. For example:

> *"…Business process management cannot be considered simply as BPR. Rather it is concerned with how to manage processes on an ongoing basis, and not just with the one-off radical changes associated with BPR…" (Armistead & Machin, 1997, 887)*

> *"…business process management (BPM) is a systematic, structured approach to analyse, improve, control and manage processes with the aim of improving the quality of products and services…" (Elzinga et al., 1995, 119)*

> *"…A systematic approach to designing, prioritising, managing, controlling and monitoring business processes…" (Zairi, 1997, 70)*

A common thread in these approaches was the view of BPM being from the perspective of managing and/or improving the operation of a process. Garvin (1998) highlighted a key limitation of a view that focuses on improving processes, showing the neglect of ongoing management and operation of many redesigned processes. In his study, Garvin found that a tendency to focus on work processes led to administrative and supporting processes being overlooked which ultimately ended in inconsistencies in information and planning.

An underlying assumption in the use of BPM as a *lifecycle approach* to managing and improving processes is that a generic, systematic approach to BPM is possible. From a theoretical perspective, Sabherwal et al. (2001) suggested that taking such a view does not capture the dynamics of organisational operations including the internal variances and external contextual situations.

BPM as an Organisational Approach

Pritchard and Armistead (1999) viewed BPM as an approach to managing the organisation. Similarly, DeToro and McCabe (1997) indicated that BPM was a new way of managing an organisation, which is different to a functional, hierarchical management approach. At this level, Harmon (2003, 1) stated:

> *"…In the Nineties, a number of management gurus, for different reasons, began to argue that it was more efficient to conceptualize a company in terms of a set of value chains or business processes. This approach has been given many names, but the most popular, today, seems to be the Process-Centric Company…"*

Harmon went further to define a process-centric organisation as one:

> *"…whose managers conceptualize it as a set of business processes. Most process-centric companies, like most traditional organizations, still have departments and divisions..."*

In these examples, the emphasis was on the management of the organisation as a whole, as opposed to the management of processes within the organisation.

Distinguishing between a Lifecycle and an Organisational Approach

Applying a systematic approach to the processes within an organisation (as is the case in a BPM lifecycle approach) does not mean that individuals necessarily view the organisation as being a set of processes (as is the case in a BPM organisational approach). Consequently, the term BPM, when referring to the management of processes, is fundamentally different than when using the term to refer to the management of an organisation. The following example highlights how this distinction could manifest within an organisation.

Consider the notion of "documenting or designing", a step in all of the above *BPM as a Lifecycle Approaches*. At this level, these steps lead to the visual representation of a process. Potential issues that individuals would address during this step could include:

- What level of detail is the process representation at?
- Who are the relevant process stakeholders?
- How are the stakeholder requirements captured?
- What technology is available for representing the process model?

With the interpretation of BPM as an organisational approach, a step of 'documenting or designing' processes would result in different considerations. As the underlying view is of the organisation as a set of processes, the key issues in 'documenting and designing' could be:

- What technology does the organisation need to make available to employees to enable them to model and document processes?
- Which people within the organisation need to have access to process modelling technology?
- Who, within the organisation, is going to be responsible for the on-going maintenance of the process model library and technology?
- Where are the funds for purchasing / maintaining the process modelling technology going to come from?

This shows a distinct difference in the intent and consequence of these two uses of the term BPM[21]. This distinction is not to imply that the two approaches are mutually exclusive. Rather, it recognises that the decisions, practices and consequences of each approach are different and acknowledges that this distinction is important to this study. The Researcher contends that both approaches may be more or less applicable in an organisation at a given point, and one approach may evolve or be a sub-set of the other. Consequently, it may not be appropriate to generalise theory from one approach to the other or that the result of doing so may be spurious results. As indicated in Chapter 1, this study includes organisations with *BPM Initiatives* using both interpretations and aims to contribute new insights into the two approaches[22].

[21] Despite this difference, it is likely that the intended consequence of applying a BPM approach is the same (i.e. an improvement in organisational performance).

[22] There is further discussion on this concept in the Chapter 10 Section 10.3.2.

3.3 Developing an Initial Conceptual Model

The first step of Eisenhardt's (1989) approach to theory building is the initial definition of questions. Included in this step, Eisenhardt suggests that the a priori specification of constructs can be a beneficial starting point. This section presents the development of an a priori model arising from the review of extant literature. This model incorporates the dimensions that are seemingly important to progressing BPM as a management approach within organisations.

3.3.1 Identification of Factors

In developing the initial conceptual model, the Researcher first reviewed the literature to identify aspects that were seemingly important to BPM endeavours. This included consideration of lessons learnt, barriers to implementation, factors critical to implementation and progression and benefits achieved. The Researcher identified five candidate factors for an a priori conceptual model as shown in Figure 9 together with additional questions raised.

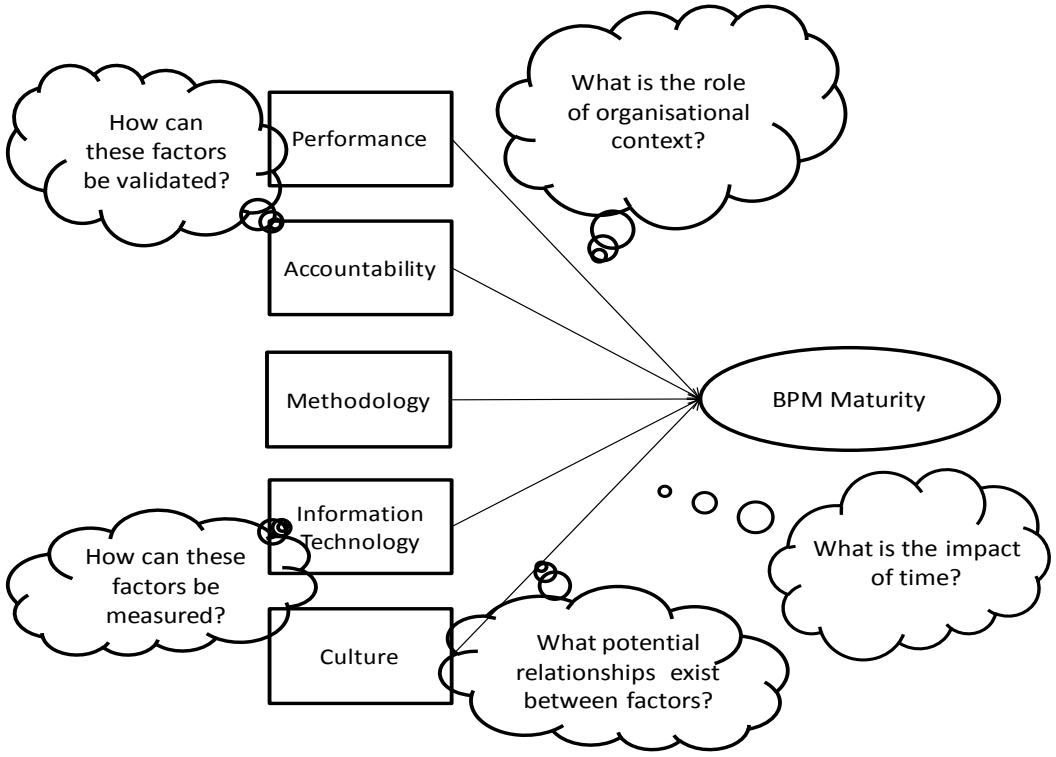


Figure 9: Initial Conceptual Model

The following tables show the mapping of extant literature that supports the selection of these factors.

Performance Factor	Defined within the model as including *measurement of BPM related performance, including activities of individual processes and the performance of process workers.*
Researcher	**Description**
Armistead (1996)	Overall performance of a process is paramount and sub-optimisation of stages should not override. A hierarchy of cascading, process oriented and cost-effectively measured KPIs provides a valuable source of translation of strategic objectives to process-specific goals.
Braganza & Lambert (2000)	Focus must be on the performance of the entire process and not the functional components within.
Gulledge & Sommer (2002)	Develop consistent performance measures and regulatory reviews.
Hatten & Rosenthal (1999)	Multiple checks on results: results v objectives, results v best practice, results v historic performance, results v competition are useful for reviewing performance. Business processes serve the customer and create relative competitive advantage for the organisation.
Ittner & Larcker (1997)	Capture team based performance measures rather than individual level.
Lee & Dale (1998)	Organisations need to balance “what gets measured gets done” with “if everything gets measured nothing gets done”.
Puah & Tang (2000)	Include a performance context that links management of production processes to ensure continuous improvement of performance results and performance review lead to meeting customer. Provide feedback on *Organisational Performance* and business drivers from external environment. Provide an environment that leads to short-term business objectives and long term organisational goals.
Rummler & Brache (1995)	Organisations need a holistic approach to performance including organisational, process and job/performer performance.
Sinclair & Zairi (1995); Zairi (1997)	Measuring and assessing performance of processes to meet targets set for delivery of output levels in line with corporate objectives.

Table 17: Select Examples from Initial Mapping of the Performance Factor

Accountability Factor	Defined within the model as including *the assignment and acceptance of responsibility for BPM practices.*
Researcher	**Description**
Armistead (1996)	Change from functional to process base results in a change in the career paths and power base of senior management. Need to designate a Process Champion that has responsibility for the entire process to avoid boundaries reappearing within the process. Manage careers by align role with aspirations and ensuring cross-skilling and gaining wider business experience.
Booz et al. (2003)	Provide examples of different structures of process roles and responsibilities that exist in a number of organisations.
Braganza & Lambert (2000)	BPM needs different modes of governance that involves decision-making and how people exert influence over others. It is necessary to define process roles and responsibilities particularly for senior managers and business leaders.
Corrigan (1996)	Resistance to change stemming from a lack of promotional prospects and perceived job insecurity is a major barrier.
DeToro & McCabe (1997)	Consider adopting a matrix style approach to management with both process and functional accountabilities.
Harmon (2005)	Matrix management model to overcome the natural tension between function and process. Executive officers who are focused on process.
Hatten & Rosenthal (1999)	Top management need to be involved in process change and not isolated from their operations. CEOs need to be interested and committed to change and not give up before efforts pay dividends.
Jarrar et al. (2000)	Need to put someone in charge and centralise the management structure of BPM to avoid duplication of effort.
Kirkham (1996)	Organisational structure may become flatter.
Labovitz and Rosansky (1997)	Advocate the distribution of responsibility throughout the organisation.
Pritchard & Armistead (1999)	There is a need to use process owners and systems of reward and recognition, networks and matrix structures.
Puah & Tang (2000)	Monitor and control individual processes through ownership and empowerment.
Stalk et al. (1992)	CEO needs to have responsibility for building process capabilities, as it is only at this level that they can control the “everywhere and nowhere” nature of capabilities.

Table 18: Select Examples from Initial Mapping of the Accountability Factor

Methodology Factor	Defined within the model as including *the adoption of recognised methodologies for use in BPM.*
Researcher	**Description**
Adesola & Baines (2005); Amaratunga et al. (2002); Biazzo (2000); Crowston (1997); Greasley (2003); Harrington (1991); Kettinger et al. (1997); Klein (1994); Smart et al. (1998)	Provide further examples of methods and methodologies in use within BPM and related fields.
Bandara (2007)	Distinguish between a modelling methodology and a modelling tool.
Edwards et al. (2000)	Any one methodology is unlikely to be sufficient for the breadth of definitions of process orientation.
Hatten & Rosenthal (1999)	A mistake is to make process improvements that have little strategic value because they were low value-add relative to others.
Ittner & Larcker (1997)	Processes must be under statistical control prior to commencing process improvement initiatives. Methodologies to assist in the identification and elimination of waster and removal of process variability are beneficial.
Pritchard & Armistead (1999)	BPM is more than a series of techniques for improvements in process performance, lack of consistency in approach to BPM.
Puah & Tang (2000)	Make process improvement an integral part of a BPM framework.
Robinson (2001)	Distinguish between methodology and systems. A tool used to support a methodology is not a methodology in its own right.
Zairi (1997)	BPM requires proper mapping and documentation of major process activities. Discipline and repeatability of quality performance is important. Extra benefits of BPM include problem solving and aspiring to best practice. Approach to implementing continuous and break-through improvements at Ford Motors included a set of standardised tools and methodologies.

Table 19: Select Examples from Initial Mapping of the Methodology Factor

Information Technology (IT) Factor	Defined within the model as including *the use of information technology resources in the implementation and conduct of BPM practices.*
Researcher	**Description**
Bandara (2007)	Process modelling tool is critical to the success of process modelling.
Dumas et al. (2005)	Process modelling tools can range in sophistication from relatively simple flow-charting tools to more comprehensive tools that use event-driven process chains.
Greasley (2003)	Indicate that business process simulation technology can be used to analyse variability and interdependence of processes.
Gulledge & Sommer (2002)	Delivery of value to customer is a key requirement of an integrated BPM system. Non-alignment of information systems will result in a stovepipe affect that will inhibit organisations from achieving benefits.
Hammer (2001)	Process-oriented systems are required to integrate process activities though the sharing of data.
Harrington & Tumay (2000)	Propose a four-phase model for introducing process simulation tools.
Hatten & Rosenthal (1999)	Improvements in IT will continue to reward those who use it in the integrated management of business processes.
Lee and Dale (1998)	Being able to respond quickly and provide appropriate decision-support information is essential to BPM.
Miers & Harmon (2005)	Provide a BPM continuum with a comprehensive view of categories of IT relevant to the BPM domain including languages (e.g. BPEL or Java), BPM Servers (e.g. EAI/BPM server platforms), Tools/Utilities (e.g. process modelling tools or business rules tools), BPM Suites, BPM Suites including frameworks, complete BPM systems or applications.
Pritchard & Armistead (1999)	BPM is more than a series of tools for improvements in process performance.
Puah & Tang (2000)	Early IT efforts failed to consider soft issues.
Valiris & Glykas (1999)	BPM requires a holistic view of the organisation that combines people, processes and technology.
Zairi (1997)	BPM relies on systems and documentation for consistency.

Table 20: Select Examples from Initial Mapping of the IT Factor

Culture Factor	Defined within the model as including *the acceptance, practice and promotion of BPM within the organisation.*
Researcher	**Description**
Box & Platts (2005)	Leadership styles needs to create and foster team spirit and executives must be able to "walk the talk". Underlying change acceptance culture makes projects more likely to succeed.
Edwards & Braganza (1995)	A shared understand of the process management initiative is required and needs the support of an agreed change management plan.
Hammer (2001); Hammer & Stanton (1999)	Attitudes and behaviours of the front line personnel that effectively determine a process enterprise. Adopting a culture removed from buck-passing and finger pointing, and that prioritises teamwork and customers.
Hatten & Rosenthal (1999)	Management need to be able to create a unifying vision and direct resources to achieve it.
Ittner & Larcker (1997)	A culture that is committed to teamwork and continuous improvement is required to succeed.
Melan (1987)	Develop a process management philosophy and strategy that is in keeping with the existing organisational culture and values.
Molden & Symes (1999)	BPM purpose needs to be clear and adopted by all.
Pritchard & Armistead (1999)	Often requires a change in organisational culture. Need to undertake initiatives to tackle cultural issues. Ensure clarity around approach, address style and context. Allow time to acquire a process perspective.
Puah & Tang (2000)	Process change management has to be associated with the organisation's intents and purposes. Consider soft issues such as quality, culture and the impact of change on the organisation and individuals.
Spanyi (2003); Spanyi 2004	Need to embed process change across the organization. Focus on developing a set of values and beliefs to support process thinking.
Valiris & Glykas (1999)	BPM requires a holistic view of the organisation that combines people, processes and technology.
Zairi (1997)	It is not enough to rely on having just good systems and the right structure but also on the adoption of a change culture. Understanding BPM principles is required throughout the organisation.

Table 21: Select Examples from Initial Mapping of the Culture Factor

3.4 Operationalising the Conceptual Model

Considering how to operationalise the conceptual model in light of the insights gained from the review of literature enables future testing of any theory arising from this study[23]. In this sense, operationalisation refers to the development of measurement questions for assessing the various factors of the model.

3.4.1 Identifying Perspectives

Earlier in this chapter, the Researcher recognised a number of interpretations of BPM that could exist within organisations (i.e. technology, lifecycle and organisational). At this time, how (or whether) progression differs between these interpretations and the affect on measuring progression is largely unknown.

The inclusion of Information Technology as a factor in the initial conceptual model incorporated the technology interpretation of BPM into future operationalisation of the model. Further exploration of the effect of the two management approaches (i.e. BPM as a lifecycle approach and as an organisational approach) was required however, in order to understand the potential implications on operationalisation of the conceptual model, especially with regard to the potential relationships between the model components and aspects such as time and context.

To gain additional insights into the potential impact of these two approaches, during early efforts into the operationalisation of the model the Researcher introduced the concept of a *perspective* to supplement the factors already contained within the model. The purpose of the perspective concept was to allow the Researcher to gather data and contemplate its implications, in a manageable and structured manner. As a starting point, the stages from lifecycle and organisational approaches (Elzinga et al., 1995; Gulledge & Sommer, 2002; Lesser & McCormack, 2004; Pritchard & Armistead, 1999; Zairi, 1997) provided a framework for application in future research.

[23] The development of measurement questions is not a part of this thesis. Rather the intent at this time is to discuss the process of operationalisation, including the development of a framework for the subsequent development of measurement questions.

The initial *perspectives* arising from the review of literature are set out in Table 22.

Lifecycle Stages (Elzinga, 1995; Gulledge & Sommer, 2002; Zairi, 1997)	Organisational Stages[24] (Lesser & McCormack, 2004; Pritchard & Armistead, 1999)	Perspectives
Design/Document	Plan	Design
Perform/Manage	Do	Execute
Control/Monitor	Check	Control
Improve	Act	Improve

Table 22: Initial Perspectives in Planning for Model Operationalisation

In addition to these stages, the concept of alignment was evident in the literature.

Align

The concept of aligning aspects of management is not new and was evident in the quality management arena (Deming, 1986; Olian & Rynes, 1991). Researchers in the BPM domain also recognise the importance of alignment (e.g. Elzinga et al., 1995; Jarrar et al., 2000; Pritchard & Armistead, 1999; Puah & Tang, 2000; Zairi, 1997; Zairi & Sinclair, 1995). Box and Platts (2005) indicate that successfully aligning BPM projects enables maximum energy to be directed into attaining desired outcomes and assisted in avoiding issues of misalignment including waste of time, money and opportunity, internal conflicts and power struggles, de-motivated individuals and teams, confusion and ultimately failure. Collins and Porras (2000) also support the importance of this concept, finding that within visionary and long-lasting companies, processes, practices and behaviours are both mutually supporting and aligned.

Within the literature, there are specific *organisational level* alignment models, such as Molden and Syme's (1999) Universal Alignment Model and Hatten and Rosenthal's (1999) Enterprise Model. Hatten and Rosenthal (1999) see their Enterprise Model as assisting organisations to improve their efficiency and

[24] Other management frameworks such as COBIT also use similar groupings (Damianides, 2005, 80).

effectiveness through alignment between core processes, customers and functions based on capabilities and competencies. There are also alignment models focusing on more defined aspects such as Luftman's (2003) IT Alignment model or Box and Platt's (2005) Project Alignment Model.

The Researcher first considered the notion of *alignment* as a factor of the model, but positioned it as a *perspective* in the early iterations of the model due to the potential inter-relationships with other factors. Figure 10 shows the resultant model that the Researcher developed to guide future operationalisation efforts.

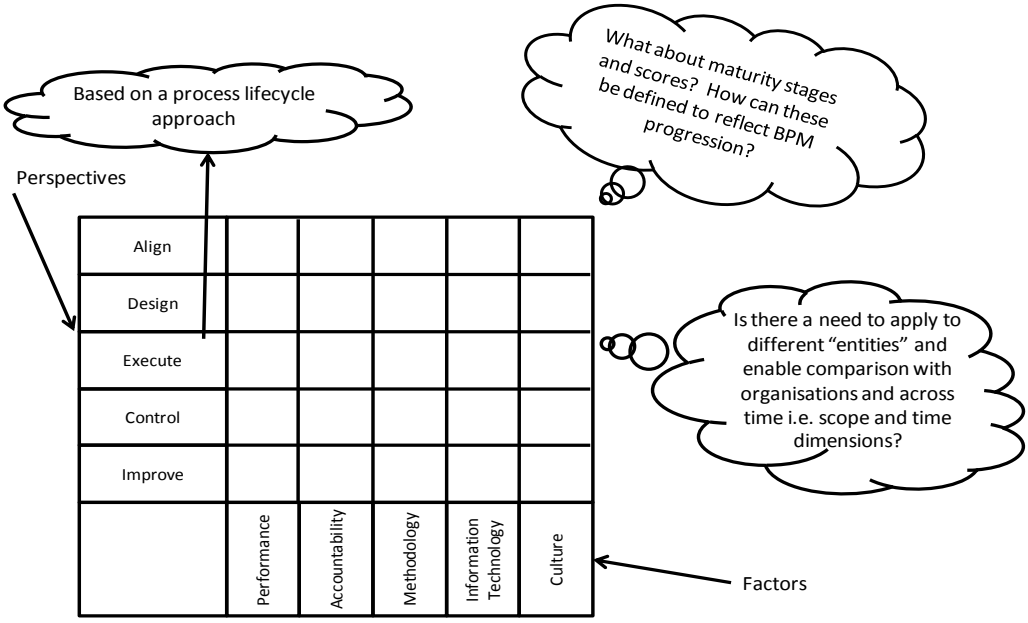


Figure 10: Plan for Operationalising the Conceptual Model

This model provides a structure for the development of data collection instruments designed to enable subsequent refinement of the model in a practical setting.

3.5 Measuring BPM Maturity

In addition to investigating the progression of BPM in organisations, this study aims to provide insights into how to measure the progress. Consequently, the next section of the literature review focuses on improving the understanding of how the factors of the a priori conceptual model, and ultimately *BPM Maturity* may be measured.

Since the development of the Capability Maturity Model (CMM) by Carnegie University in the early 1990's, maturity models have become an accepted means by which organisations measure progress and gain direction for improving defined areas. Table 23 provides select examples of maturity models in a number of management disciplines.

Model	Domain	Developed	Developed By
European Foundation for Quality Management	Business Management	Early 90's	EFQM
Process Maturity Model	Process Management	Early 90's	Rummler-Brache Group
Project Management Maturity Model	Project Management	Early 90's	Office of Government Commerce, UK
IT Strategic Alignment	IT Management	Early 00's	Luftman (2003)
Enterprise Architecture Maturity Model	IT Management	Early 00's	National Association of State CIO's
Process Management Maturity Model	Process Management	Mid 00's	Curtis & Alden (2006)
Process Enterprise Maturity Model	Process Improvement	Mid 00's	Hammer (2007)

Table 23: Select Examples of Maturity Models

3.5.1 Measuring Maturity in the BPM Domain

Within the BPM domain, a number of researchers have attempted to measure maturity using a range of measures such as time, stage of progression, number of staff involved or budget. Maull et al. (2003) for example, attempt to measure the maturity of BPR projects whilst Pritchard and Armistead (1999) aim to measure the maturity of BPM. Furthermore, Ittner and Larcker (1997) provide insights into how the context of organisations can affect progression. Reviewing their work provides insights into potential issues with measuring *BPM Maturity* that affect the development of a measurement model.

Maull et al. (2003) conduct a comprehensive study into the maturity of BPR programmes. They group organisations into five categories based on the stage organisations were at with their programme. Group 1 includes organisations at the beginning of project planning. Group 2 includes organisations that had progressed to the execution of their programme, whilst Group 3 organisations had completed their programme or were close to completion. Group 4 includes organisations in post-programme review and Group 5, organisations that were actively using outcomes of the programme to re-engineer the entire business. Despite these groupings, Maull et al. recognise a number of difficulties and limitations with defining the notion of maturity.

The first issue Maull et al. (2003, 605) find was that they could not use objective measures to measure maturity. They tried to define maturity using two dimensions, an *"objective measure"* (time, team size, etc.) and a *"weighting for readiness to change"*. They find this approach to be too complex to measure however, stating:

> *"…For some this might be explained as a function of organisation size, while for others, such variation may have more to do with an organisation's readiness to change. In considering how maturity might be measured, we toyed with the idea of combining elapsed time, size of team, etc. with some weighting for readiness to change. However, this led to even further definitional problems and would have added considerable complexity to the research design and resulting instrumentation…"*

Therefore, they choose a phenomenological approach assessing the organisation's perception of their maturity, using objective measures as a guideline.

The second issue relates to the change in maturity over time. Whilst they recognise a temporal aspect of maturity, Maull et al. also recognise that progression over time is neither linear nor evenly distributed. Maull et al. (2003, 603-605) reflect on these issues stating:

> *"…We would have preferred to define maturity tightly using an objective measure such as elapsed time, number of staff involved, size of budget, etc. However, some organisations had been considering their project plans and budgets, staffing facilities etc. for many months, while others in the same timescale had pushed through to implementation. Some organisations with large teams and budgets were still at the outset, other organisations had a complete implementation with a smaller tighter knit team…"*

The temporal aspect of progression presents a challenge to the measurement of maturity, affecting the design of measurement instruments and the appropriateness of the research methods selected to measure progress.

Pritchard and Armistead (1999) use a combination of case study and survey research to investigate the practice of BPM within European organisations. The case studies provide rich evidence and contextual information about the progression of BPM whilst the survey allows the study of differences in two groups within the sample (Early Stage and Well Progressed).

In their study, Pritchard and Armistead (1999) attempt to divide organisations into groups dependent upon their grade and progression of BPM implementation. They start with five categories including not started, just starting, some way progressed, well progressed and world class. There is no indication as to how they derive this classification however – whether it was on the respondent's subjective interpretation of the category, or whether it was on some objective measure such as time, dollars/effort expended or best practice adoption.

During data analysis, Pritchard and Armistead reduce this classification to just two groups being early stage and well progressed. Pritchard and Armistead (1999) then examine the differences between the two groups with regard to how they implemented BPM, including their motivations, difficulties encountered and perceived success. The most notable difficulties in implementing BPM arising from Pritchard and Armistead's study include the inconsistent approaches to BPM within an organisation and poor understanding of BPM.

These two studies highlight the conflict between the temporal nature of progression and the desire to measure progression at a single point in time. This reflects in difficulties when attempting to create comparable categories due to the different stages of progression at which organisations could be. Furthermore, the studies highlight problems that arise in BPM research from the inconsistent use of terminology and the affect on comparing and contrasting data collected.

Ittner and Larcker (1997) provide an example of how the contextual environment can affect the progression of BPM practices and thus influence measurement. Their study investigates the relationship between the use of various BPM approaches and two indicators of *Organisational Performance* (ROA: return on assets and ROS: return on sales). In discussing the analysis process, Ittner and Larcker confirm the difficulty in establishing causal relationships (an essential part of theory building at some stage). In particular, they refer to a phenomenon commonly known as "equifinality" (Hackman, 1983; cited in Ittner & Larcker, 1997, 530).

> *"…Influences on [performance] do not come in separate, easily distinguishable packages. Indeed, to try to partial out and assess the causal effects of each piece of a multi-faceted organisational change may lead to the conclusion that nothing is responsible for an observed improvement. If our attempt to understand [performance] focuses on single causes, we are unlikely to generate a coherent understanding of the phenomenon. There are simply too many ways to get there from here, and the different routes do not necessarily have the same causes…"*

The principle of equifinality suggests that there are many possible approaches to achieving the desired end means. Such thinking challenges the notion that there is a single *best practice* approach to adopting a process view. Select findings from Ittner and Larcker's study that show the affect of equifinality are summarised in Table 24.

Industry	High ROA requires…	High ROS requires…
Automotive	High level of customer and supplier involvement in strategy and process design.	High level of customer and supplier involvement in strategy and process design and medium use of data gathering and analysis tools. Low customer and supplier involvement if high process-focused improvement methods.
	High level of customer and supplier involvement in strategy and process design.	High level of customer and supplier involvement in strategy and process design. Medium use of data gathering and analysis tools.
	Low ROA requires…	**Low ROS requires…**
Computer	Low level of customer and supplier involvement in strategy and process design. Low use of process-improvement methods.	Over-doing the continuous improvement focus.
	Innovation-oriented strategies and high customer and supplier involvement in strategy process. Innovation-oriented strategies and low customer and supplier involvement in strategy process.	

Table 24: Select Findings from Ittner and Larcker (1997)

3.5.2 Maturity Models in the BPM Domain

A review of maturity or measurement models that incorporate processes and process management provides four basic categories of models including:

- Generic process maturity models (i.e. for use in the selection and/or improvement of a processes)
- Specific process maturity models (i.e. for use in measuring the maturity of a defined process)
- Generic management maturity models (i.e. for use in assessing the maturity of general management processes)
- Specific BPM maturity models (i.e. for use in assessing the maturity of different BPM approaches).

The following sections discuss select examples from each of these categories.

Generic Process Maturity Models

DeToro and McCabe (1997) present a 5-stage approach for assessing the condition of a process. The aim of this model is to assist an organisation in choosing an appropriate approach for process improvement. DeToro and McCabe's (1997, 59) model, shown in Figure 11, includes five stages of unhealthy, non-competitive, competitive, best in class, and world class. DeToro and McCabe distinguish between three strategies for process improvement including *replacement, redesign and repair.* Furthermore, they assess the condition of a process based on efficiency and effectiveness in order to determine which approach to select for a particular process improvement project.

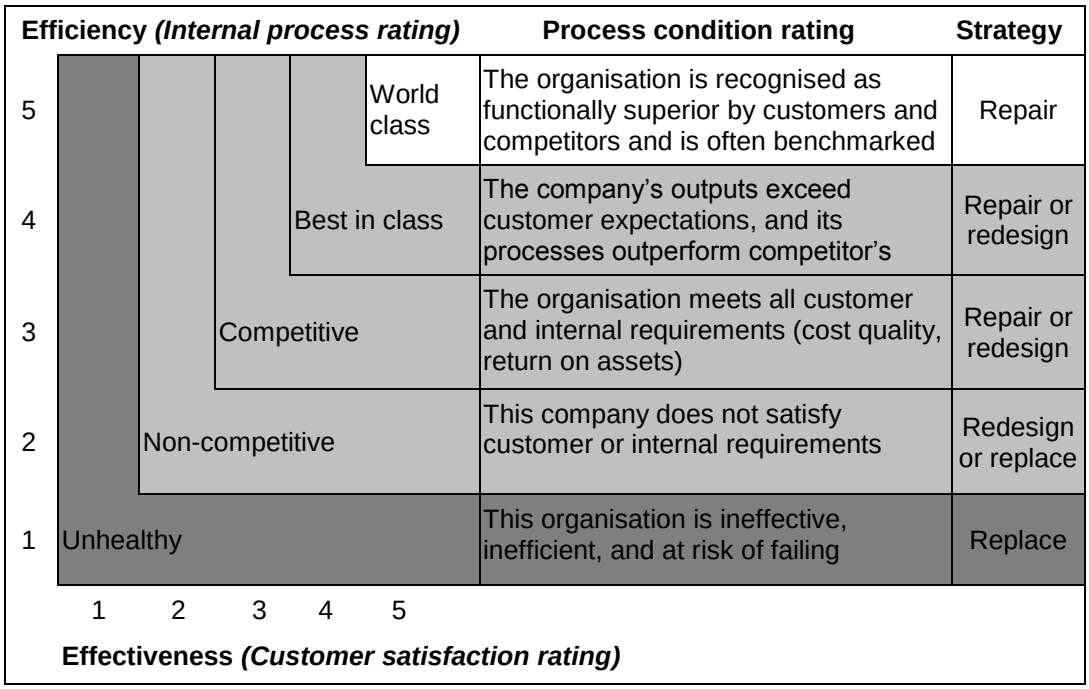


Figure 11: Model for Rating a Process' Condition

This type of model is useful for selecting processes for improvement and for matching an improvement strategy to the condition of the process.

Hammer's (2007) Process and Enterprise Maturity Model is an example of a generic process maturity model for process improvement projects. This model includes five *process enablers* and four *enterprise capabilities*. Hammer (2007, 113) defines these as follows:

Process Enablers	
Design	The comprehensiveness of the specification of how the process is to be executed.
Performers	The people who execute the process, particularly in terms of their skills and knowledge.
Owner	A senior executive who has responsibility for the process and its results.
Infrastructure	Information and management systems that support the process.
Metrics	The measures the company uses to track the process's performance.
Enterprise Capabilities	
Leadership	Senior executives who support the creation of processes.
Culture	The values of customer focus, teamwork, personal accountability, and a willingness to change.
Expertise	Skills in, and methodology for, process redesign.
Governance	Mechanisms for managing complex projects and change initiatives.

Table 25: Hammer's Process Enablers and Enterprise Capabilities

Hammer defines four maturity stages to measure the strength of each of the *process enablers* (P-1 to P-4) and *enterprise capabilities* (E-1 to E-4). These stages are prescriptive in that they build on the previous level. Hammer also recognised a P-0 or E-0 in the event that the strength of the measure does not meet even the P-1 or E-1 stage. To gauge the level, respondents answer a series of statements using the scales of largely true (more than 80% correct), somewhat true (20 – 80% correct), or largely untrue (less than 20% correct) and a corresponding green, yellow, red coding scheme.

Despite the inclusion and the evaluation of enterprise capabilities within Hammer's model, the Researcher contends the focus of the model is at a process level and instigated during process re-design, rather than as an organisational level model with a focus on improving the organisation. The reasoning that supports this positioning by the Researcher is twofold.

First, it is the language that Hammer used when discussing an evaluation using the model. Hammer states:

> *"…are essential for any process to perform well…" (Hammer, 2007, 114)*

"…companies using this table to evaluate the maturity of their processes…" (Hammer, 2007, 115)

"…a company can apply PEMM to all its processes…" (Hammer, 2007, 118)

This indicated that individuals apply the model within the context of a process improvement or re-design project. In doing so, there is consideration of the enterprise capability, to the extent that it affects or, is available to, the project.

Second, it is the language that Hammer used when providing the stage descriptions for the Enterprise Capabilities. By way of example, consider the two descriptions shown in Table 26 taken from the Enterprise Capabilities matrix (Hammer, 2007, 120 – 1).

Enterprise Capabilities	
Expertise: Methodology	The enterprise uses one or more methodologies for solving execution problems and making incremental process improvement.
	Process redesign teams have access to a basic methodology for process redesign.
	The enterprise has developed and standardised a formal process for process redesign and has integrated it with a standard process for process improvement.
	Process management and redesign have become core competencies and are embedded in a formal system that includes environment scanning, change planning, implement and process-centred innovation.
Governance: Process Model	The enterprise has identified some business processes.
	The enterprise has developed a complete enterprise process model, and the senior executive team has accepted it.
	The enterprise process model has been communicated throughout the enterprise, is used to drive project prioritisation and is linked to enterprise-level technologies and data architectures.
	The enterprise has extended its process model to connect with those of customers and supplies. It also uses the model in strategy development.

Table 26: Extract from Hammer's Enterprise Matrix

The Researcher contends that these statements reflect the consequence of having the capability developed and therefore whilst they may direct attention to which capability needs attention, the statements do not guide the development of the capability within the organisation. To develop BPM capability within the organisation with regard to methodology, decisions may include:

- What methods is the organisation going to select for use?
- How do current technologies support these methods?
- What standards need to be in place to guide use of the methods?
- Who is going to be responsible for the implementation, training, budget and assessment of the methods?

Similarly, decisions about a process model may include:

- To what level does the organisation want to document processes?
- What detail is going to be contained at each level?
- How is the model going to connect with other enterprise models such as the IT Architecture or the Risk Management Architecture?

This type of model is useful for improving the redesign process and for identifying areas in which enterprise capability need to be improved[25].

Specific Process Maturity Models

Arguably, the most well-recognised process-specific maturity model is the Capability Maturity Model (CMM) developed by the Software Engineering Institute (SEI) – Carnegie Mellon in the early 1990's[26]. Carnegie-Mellon developed the CMM in conjunction with the American Defence Force to

[25] This is not to say that an organisation does not benefit from application of such a model. Rather the point is that the primary intent of the model is to improve process redesign within the organisation and the attention directed to organisational capability is as an enabler of this. In a model that the Researcher describes as being BPM specific, the primary focus is on the management activities or development of capabilities and the assumed consequence on processes and process improvement projects. In the upcoming evaluation section (i.e. Section 3.4.3) this reflects in a half strength recognition of organisational aspect for the Hammer (2007) model.

[26] A further example of a process-specific maturity model is Luftman's (2003) maturity model for IT strategic alignment.

overcome a problem with the quality of software. The basic concept underpinning the CMM was that the maturity of software organisations affected the quality of their software development. Paulk et al. (1993, 5) confirm the basis for applying the model is *"an increase in the process capability of the organisation"*. The CMM is a *prescriptive* model that provides guidance to improve a specific process (i.e. software development) [27].

The CMM introduces the concept of five maturity levels defined by *special requirements* that are cumulative, an example of which is in Figure 12 (Paulk et al., 1993, 6).

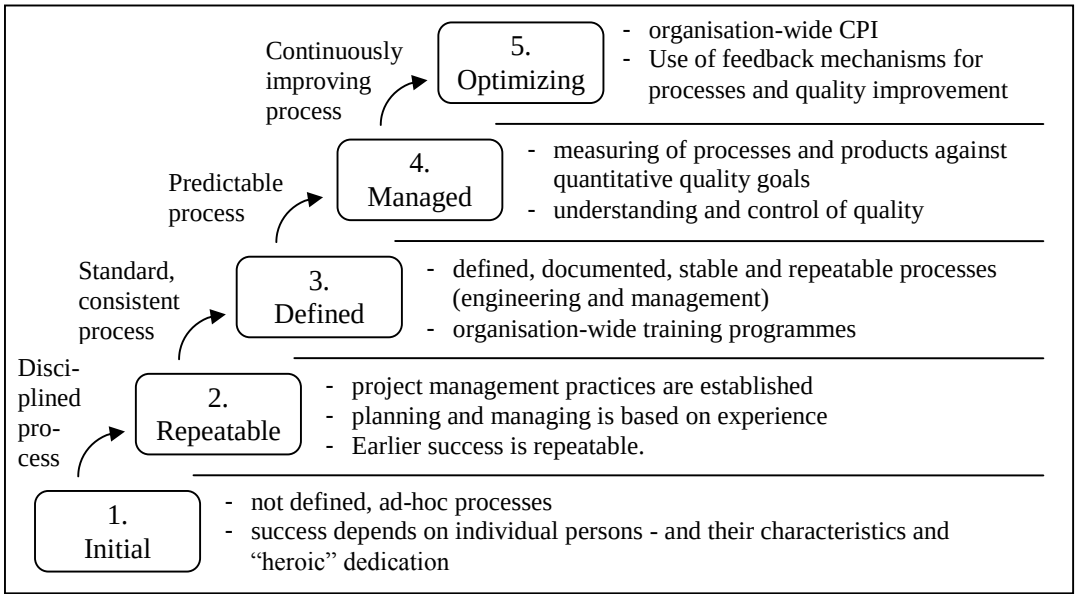


Figure 12: The Five Levels of CMM

Paulk et al. (1993) recommend that organisations avoid skipping levels as this can have a *"counterproductive"* impact. Within the model, there are goals defined for *key process areas (KPA's)*. The model prescribes a number of activities for each *key process area* that, when undertaken, lead to the attainment of the maturity level. To attain a particular level of maturity all goals for the *key process areas* have to be achieved (Paulk et al., 1993).

[27] That is, it assumes acceptance of the notion of best practice and provides sequential and orderly directions for achieving higher levels of maturity.

Since its inception, Carnegie Mellon has supplemented the CMM with additional models such as the software acquisition (SA-CMM), integrated product development (IPD-CMM) and system engineering (SE-CMM) (Huang & Han, 2006). More recently, Carnegie Mellon has replaced the CMM with the Capability Maturity Model Integration (CMMI). A major difference between the CMM and the CMMI is the ability to adopt either a staged approach (i.e. as in the original CMM) or a continuous approach (whereby achievement of the KPA's can occur over a number of different levels). Huan and Han (2006) have shown that factors including project risks, resource availability and business objectives act to influence the path taken by organisations. Consequently, building a formal model that helps to prioritise the selection of KPA's, difficult.

Generic Management Maturity Models

An example of a generic management model is the Excellence Models that exist in many regions including models such as the:

- Australian Business Excellence Awards (ABEF)
- European Foundation for Quality Management (EFQM)
- CII Exim Bank Award (India)
- Japan Quality Awards
- Singapore Quality Awards (SQA)
- Malcolm Baldrige National Quality Award (MBNQA) (United States).

The Global Excellence Model Council[28] acts as the:

> *"…guardians of the Excellence Models across the world…"*

[28] The Global Excellence Model Council held its inaugural meeting in November 2006. Further details about the council and the excellence models are at http://www.excellencemodels.org/.

The aim of these models is to measure and improve business performance by focusing on a number of aspects including leadership and management. The official website (Accessed from *http://www.efqm.org/*) indicates:

> *"…Excellent results with respect to Performance, Customers, People and Society are achieved through Leadership driving Policy and Strategy that is delivered through People, Partnerships and Resources, and Processes…"*

A closer look at one of these models, the EFQM, provides further insights into how excellence Models work.

The EFQM is comprised of eight "Fundamental Concepts of Excellence" and three maturity levels supplement these concepts. The maturity levels (defined as: start up, on the way and mature) apply to the understanding the organisation has with respect to using the model (EFQM, 2005). Figure 13 shows the assessment framework in 2008 (http://www.excellencemodels.org/ExcellenceModels/). Table 27 details the eight concepts that underpin the model.

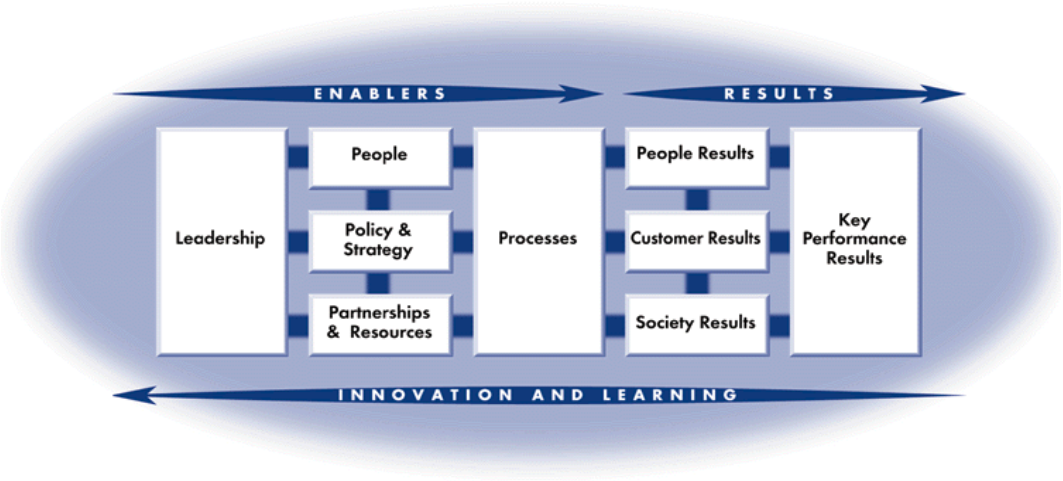


Figure 13: The European Foundation for Quality Management Model

Fundamental Concept	Description
Results Orientation	Excellence is achieving results that delight all the organisation's stakeholders.
Customer Focus	Excellence is creating sustainable customer value.
Leadership & Constancy of Purpose	Excellence is visionary and inspirational leadership, coupled with constancy of purpose.
Management by Processes & Facts	Excellence is managing the organisation through a set of interdependent and interrelated systems, processes, and facts.
People Development & Involvement	Excellence is maximising the contribution of employees through their development and involvement.
Continuous Learning, Innovation & Improvement	Excellence is challenging the status quo and effecting change by using learning to create innovation and improvement opportunities.
Partnership Development	Excellence is developing and maintaining value-adding partnerships.
Corporate Social Responsibility	Excellence is exceeding the minimum regulatory framework in which the organisation operates and to strive to understand and respond to the expectations of their stakeholders in society.

Table 27: EFQM Fundamental Concepts

As seen in Figure 13, at the highest level the model consists of two categories: *enablers* and *results*. *Enablers* assess the activities of the organisation whilst *results* assess the achievements with respect to identified stakeholders. Each category is broken down into nine criteria – 5 *enabling* criteria (leadership, people, policy and strategy, partnership and resources and processes) and 4 *results* criteria (people, customers, society and key performance). These criteria break down further into sub-criteria that provide a broader explanation and guideline for assessment. Inherent in the model is the notion of a bi-directional linkage between *enablers* and *results* whereby *enablers* drive *results* and *results* feedback to improve *enablers*. Results are analysed using an assessment method called RADAR (results, approach, deployment, assessment and review). The 'ADAR' assesses *enablers*, whilst the 'R' assesses *results*.

Whilst business excellence models are useful for assessing organisational outcomes, they do not provide comprehensive assistance in understanding the specific requirements and complexities of BPM nor do they enable the measurement of BPM practices. Such models do however, stress the

significance of process and contextualise these with other important factors for corporate performance.

Specific Business Process Management Maturity Models

Models for measuring BPM have arisen from both industry and academia (e.g. Curtis & Alden, 2006; Fisher, 2004; Harmon, 2004; Kiraka & Manning, 2005). The following section discusses selected examples of BPM maturity models.

Fisher (2004) defines five *"levers of change"* important for understanding BPM. Figure 14 shows how Fisher (2004, 1) relates these levels.

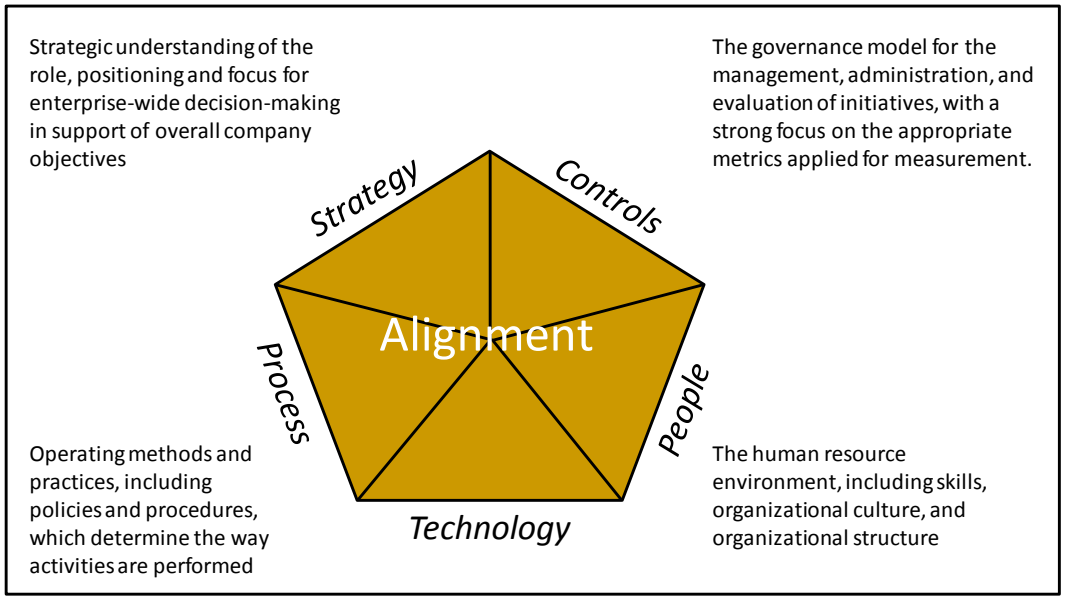


Figure 14: Fisher's Five Levers of Change

According to Fisher (2004), many organisations only focus on 3 of the 5 levers which can lead to problems such as an efficient process that does not match strategy. Similar to the CMM, Fisher identifies *States of Process Maturity* as being *siloed; tactically integrated; process driven; optimized enterprise and intelligent operating network*. Fisher (2004, 6) combines the five levers of change with five *"states of maturity"* to asses the maturity of BPM. Figure 15 shows Fisher's resultant model for BPM maturity. In developing this model, Fisher stresses the need for a BPM model to be both non-linear and multi-dimensional.

	Siloed	Tactically Integrated	Process Driven	Optimized Enterprise	Intelligent Operating Network
Strategy	• Reactive to market conditions within 1-2 years, typically chasing a competitor • Integration within functions • Driven by cost and efficiency	• Adapt/react to market dynamics within 12 months • Some cross-functional integration to solve pains • Initial entry into point-to-point integration with partners	• Adapt/react to market dynamics within 3-6 months • Enterprise-wide process leadership is established • The business process is the foundational element of the enterprise	• Adaptive to market dynamics within weeks • Enterprise organized completely around processes • Optimized processes+execution yield competitive advantage	• Predictive capabilities and market leadership • Continuously adaptive to market dynamics in near real-time • Enterprise and its partners are organized around processes • Competitive advantage is driven and shared by partners
Controls	• Local and functional level authority / autonomy • No enterprise-wide standards or governance • No formal value measurement program	• Hierarchical mgmt. structure • Independent functional department decisions • Limited enterprise-wide standards or governance	• Formal process leadership establishes priorities • Business cases drive projects • Process metrics tied to individual and team performance	• Process teams responsible for overall performance • Relevant process metrics institutionalized as main performance measures	• Inter-enterprise process teams own performance • Relevant process metrics are used to measure bi-directional partner performance
Process	• Static business processes • Functional silos • Geographic silos • Department focused • Informal communications within departments	• Limited process re-engineering and cross-functional/process coordination (often manual, one time efforts) • Systems drive baseline process definitions	• Fully transitioned from functional to process focus, including management structure, execution teams, and performance evaluation • Targeted BPO	• Total process integration across the enterprise • Commitment to continuous process improvement program • Outsource non-core business processes (reduce cost and increase quality)	• Total process integration across the ecosystem • Key processes flow seamlessly across firewalls
People	• Subject matter experts • Culture is adversarial, mutual distrust • No formal change management procedures • I'll do my job, you do yours	• Cross-functional/process team members (usually led by IT) • Limited understanding of cross-departmental process needs and dependencies	• Process leaders define, deploy, enhance, and maintain core processes • Functional teams focus on high quality execution	• Lean organization focused on optimizing process definitions and execution • Ongoing process training for employees	• Partner selection includes process & cultural attributes • Ongoing process training for employees and partners
IT	• Independent systems • Islands of automation • Integration only within functions • Legacy enterprise system(s)	• Leverage ERP systems for cross functional integration • Point-to-point partner integration • IT leads cross-functional initiatives (systems focused)	• IT supports process leadership team in initiatives • System and instance consolidation to streamline processes and info mgmt.	• Utilize Business Process Management (BPM) solutions to automate process execution, monitoring, and control across the Enterprise	• Utilize Business Process Management (BPM) solutions to automate and monitor process execution throughout the ecosystem

Figure 15: Five Levers of Change combined with Five Maturity Stages

Kiraka and Manning (2005) propose a theoretical model that showed a connection between a process, strategy, structure, external stakeholders, and the macro environment. Figure 16 shows the model from Kiraka and Manning (2005, 297). According to Kiraka and Manning, this model is beneficial when thinking about and planning strategy and for considering a multi-dimensional view of the organisation.

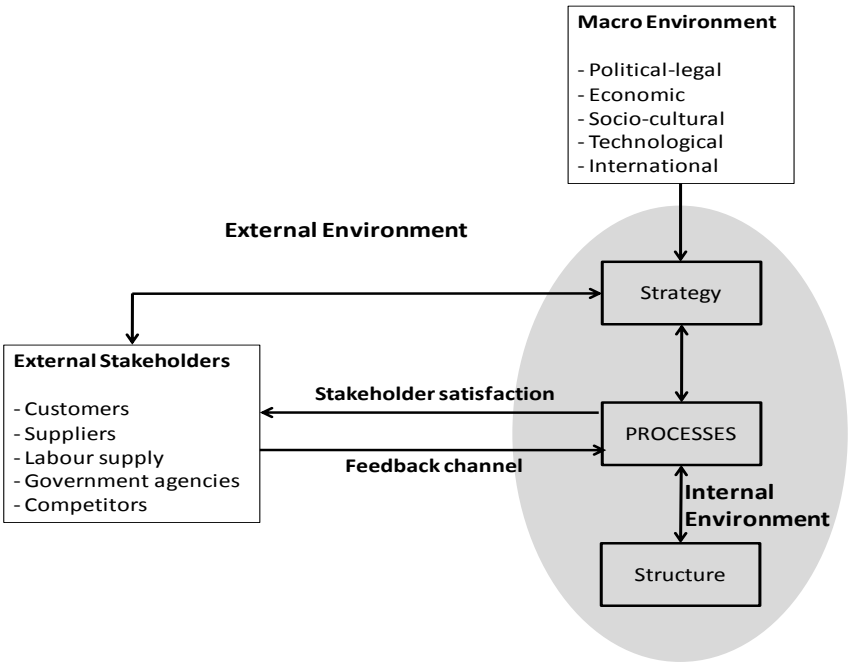


Figure 16: Kiraka and Manning's Theoretical Model

Curtis and Alden (2006) present a prescriptive model that focuses on the management of discrete processes[29]. In its entirety, the model runs to over 490 pages, however Curtis and Alden (2006) provide a summary of the model and its intent. According to Curtis and Alden (2006, 1) the model *"guides the improvements in logical, incremental steps"*. The model has a base in the CMM and the CMMI using defined process areas, aimed at achieving a set of goals and objectives. The model requires the completion of process areas at different stages of the maturity. The focus of the model is on stabilising and standardising work processes, as seen in Curtis and Alden's (2006, 5) summary of stages:

[29] In June 2008, the Object Management Group (OMG) adopted this model as a standard. Further details on the model are available at http://www.omg.org/spec/BPMM/1.0/

> *"…Level 2 is characterized by stable work units performing repeatable local procedures*
>
> *Level 3 is characterized by standard, integrated, end-to-end business processes*
>
> *Level 4 is characterized by statistically stable processes with predictable outcomes*
>
> *Level 5 is characterized by proactive improvement actions to achieve the process capability required to meet changing business objectives…"*

According to Garvin (1998), a strong focus on work processes raises the possibility that an organisation overlooks managerial and organizational processes. A strong focus on standardising current practice assumes that the practice is itself, strategically aligned, or that it is worth spending resources improving practices that are not. Fisher (2004) indicates this is not always so.

3.5.3 Evaluating Measurement Models

Existing literature provides insights into how different criteria can apply when measuring the progression of *BPM Initiatives* within organisations. Combining the goals of this study with the issues identified in progressing BPM and those in measuring maturity provides a basis for evaluating measurement models. This section evaluates select models using the criteria of *Unit of Analysis, Primary Aim, Maturity Stages, Basis for Stage Progression, Foundation* and *Application*. A discussion of the origin and intent of these criteria follows.

Eisenhardt (1989) indicates that when the unit of analysis is at an individual or process level, a potential limitation is that findings do not translate to organisational level research. Consequently, measurement models that have a base in discrete processes are not appropriate for the measurement of BPM at an organisational level. This results in criteria for the *Unit of Analysis* being Technology, Process or Organisation.

The aims of this study, including the distinction drawn earlier regarding the

various interpretations of BPM, result in criteria for the *Primary Aim* of the model being Process Improvement and Lifecycle or Organisational Management.

Sabherwal et al. (2001) argue that models presenting a single way of performing management and viewing the same approach as useful in all situations do not cater to multiple approaches and alternate contexts. Similarly, Smith and Fingar (2004) argue that a CMM-based maturity model that postulates well-organised and repeatable processes does not capture the need for business process innovation. Garvin (1998) highlight the limitations of simple staged models for capturing the richness at organisational levels. Consequently, models that have pre-defined stages and a single, standard way of performing (i.e. using a staged approach such as the CMM) are not appropriate to the organisational context. This results in criteria for *Maturity Stages* being Prescriptive (single best practice), Descriptive (multiple acceptable practices) or Undefined.

Ittner and Larcker (1997) showed that the selection of BPM methods was not universal and that different strategies could be appropriate in different circumstances. Sabherwal (2001) argued that lifecycle models take a more dynamic view but assume that changes in all organisations occur along the same path. Furthermore, they found that such models assumed movement is linear and in a forward direction and that, all organisations follow the same path. Consequently, lifecycle models are not appropriate for representing the variation arising from changing organisational context. This resulted in a criterion for the *Basis for Stage Progression* being Staged (linear), Continuous (linear with some variation for context) and Contextual (non-linear, dependent on context)

Finally, this study aims for a balance of rigour and relevance indicating that additional criteria worth evaluating includes the models':

- *Foundation* being Theoretical, Practical or a Combination
- *Application* being Self Assessed, Independent or a Combination.

Table 28 maps a number of existing models to the criteria. In this table, ● is indicative of a primary focus and ◖ denotes what the Researcher sees as a secondary focus of the model. The highlighted sections of Table 28 show the aspects addressed by this study.

Model	Unit of Analysis			Primary Aim			Maturity Stages			Basis for Maturity Stage Progression			Foundation			Application		
	Technology	Process	Organisation	Process Improvement	Lifecycle Management	Organisation Management	Prescriptive	Descriptive	Not Defined	Staged	Continuous	Contextual	Theoretical	Practical	Combination	Self Assessed	Independent	Combination
DeToro & McCabe		●		●			●			●			●			●		
Hammer		●	◖	●		◖	●			●				●		●		◖
CMM/CMMI*		●		●			●			●	●*		●		◖			●
Business Excellence Models			●	●			●				●			●				●
Curtis & Alden			●	◖	●		●				●			●				●
This Study		◖	●		◖	●		●				●	●		◖		●	◖

Table 28: Evaluating Models against Selected Criteria

3.6 Chapter Summary

This chapter commenced with a review of literature that addressed the progression of BPM within organisations. This review found variation in common BPM terms. The result was the recognition of different interpretations of the term BPM within the literature, including those that limit the term to include only technological solutions, those focused on the management of the process lifecycle and those focused on the management of the organisation. Furthermore, the review found that whilst a number of researchers provided examples of rules and lessons about the progression of BPM, in themselves these did not constitute theoretical constructs.

Following this, the review focused on measuring *BPM Progression*. A number of studies in the BPM domain used the concept of maturity. There was not a clear definition of maturity however, leading the Researcher to undertake a deeper review of measurement models. The evaluation of these models, against criteria arising from the study into progression, showed the importance of this study.

The Researcher proposed an a priori model for *BPM Maturity* including five factors of *performance, accountability, methodology, information technology* and *culture*. Further investigation into the operationalising of this model led to the further inclusion of five perspectives including *align, design, execute, control* and *improve.*

Next, the Researcher identified issues from extant literature that will affect the measurement of maturity in the BPM domain. The Researcher then evaluated select maturity models against a range of criteria derived from the literature review. This evaluation resulted in verification of the need for a BPM Maturity model.

The next chapter presents two case studies, undertaken to test and refine the a priori conceptual model in a practical setting.

4 Conceptual Model Refinement

The focus of this chapter is on testing the *Initial Conceptual Model*, developed in Chapter 3, within a practical setting. In doing so, the Researcher aims to refine the *Initial Conceptual Model* using the insights gained from the practical application. Of interest at this stage are issues such as:

- What is seemingly important to organisations adopting a BPM approach?
- How well does the *Initial Conceptual Model* capture these elements?
- What practical issues exist that are likely to affect the future operationalisation of the model?
- How does the *Initial Conceptual Model* need to change to suit the needs of current practice?

The refinement phase includes case studies with two companies that had recognised *BPM Initiatives*.

4.1 Chapter Overview

The structure of this chapter is as follows. Section 2 details the design of the case studies including the selection of companies and the data collection instruments. Section 3 details the conduct of the case studies, including a summary of the *BPM Initiatives* for each organisation. Section 4 details the data

analysis phase including the resultant *Refined Conceptual Model*. Section 5 discusses the consequences on the study of undertaking the two case studies including a discussion of the next steps. Section 6 concludes with a summary of the chapter.

4.2 Case Study Design

The desire to conduct highly relevant research and the early exploratory stage of the BPM domain, led to the conduct of case studies for testing the *Initial Conceptual Model*[30]. This phase included two case studies to reduce single case bias, and to strengthen the generalisability of the outcomes (Gable, 1994; Yin, 2003).

4.2.1 Unit of Analysis

Yin (2003) indicated that within a case study the unit of analysis can be holistic (i.e. the entire case) or embedded i.e. with multiple units of analysis within a single case. In this case, the unit of analysis is holistic, exploring the *BPM Initiative* at an organisational level.

4.2.2 Case Selection

Company A and B, were selected for this stage of the research. The selection of the two companies arose from a number of considerations including:

- It was critical that the organisations had a demonstrated commitment to BPM principles and practices. The Key Contacts were regular participants in local BPM Chapter meetings and known for their experience in BPM. Furthermore, both Key Contacts had conducted presentations on their company's *BPM Initiatives* at BPM industry conferences.
- Due to the exploratory nature of the research, it was preferable that the organisations had a prior relationship with research and an understanding of research processes and potential outcomes. This

[30] Chapter 2 provides justification for the selection of case studies for this phase of the research.

included a willingness to invest resources in the case studies to ensure sufficient time and energy for the data collection sessions.

- Due to budgetary constraints, it was necessary for the geographical location to be readily accessible to the researchers.

The Researcher invited both companies to participate in the research and provided the Key Contact with details of the study and the ethical requirements relating to the conduct of the study. Examples are in:

Appendix 13.1.1 – Invitation to Participate

Appendix 13.1.2 – Information Sheet and Informed Consent.

The two companies selected each had a recognised *BPM Initiative* driven by a small team of staff. The companies were looking to embrace BPM as an enterprise-wide approach to business operations. Both companies had Head Offices located in Brisbane, Australia and operate as Government Owned Corporations (GOCs) within the Queensland State Government.

4.2.3 Data Collection Instruments

Jick (1979) indicated that the use of complementary data collection instruments strengthens the triangulation of data. In these case studies, the Researcher used a combination of interviews, surveys and a review of documents as the primary data collection instruments.

An ***Interview Guide*** ensured consistency in the questions asked across the participating companies. The Researcher derived questions from concepts in the literature, mapping them to the framework discussed in Chapter 3. The interview questions were semi-structured and aimed at gathering data regarding each of the factors contained in the conceptual model. There was a separate *Interview Guide* for each factor with a sample in:

Appendix 13.1.3. – Interview Guide: Performance.

The ***Establishment Survey*** gathered background information about the companies including their motives and expectations with respect to BPM. This survey gathered details about the context in which the *BPM Initiative* was occurring. The Researcher asked the Key Contact to complete this survey because of their knowledge and involvement in the company's *BPM Initiative*. As an example, the completed *Establishment Survey* for Company B is in:

Appendix 13.1.4 – Establishment Survey: Completed by Company B.

The ***Feedback Survey*** collected data about the design of the conceptual model including an assessment of the relevance and completeness of the factors selected for inclusion in the conceptual model. This survey included rating scales for the factors and perspectives and semi-structured questions to elicit other feedback regarding the model. All participants of the case studies completed the *Feedback Survey*, a copy of which is in:

Appendix 13.1.5 – Feedback Survey.

The ***Maturity Survey*** explored the future operationalisation of the conceptual model[31]. Concepts from existing literature led to the questions within the *Maturity Survey*. During the case study with Company A, participants reviewed the proposed *Maturity Survey* questions and provided the Researcher with feedback on their clarity and relevance. This feedback led to the refinement of the questions and their presentation. During the second case study, Company B piloted the revised questions of the *Maturity Survey*. In this pilot, a small number of participants from three business areas within Company B completed the survey questions based on BPM practices within their area[32]. An example of the questions and responses to these questions is in:

Appendix 13.1.6 – Maturity Survey Questions: Culture Factor.

[31] As indicated in earlier Chapters, the questions themselves are outside of the scope of this thesis, rather the intent was to use the surveys with a view to identifying practical issues in the completion of the survey and for understanding issues in the process of measuring progression.

[32] Doing this enabled comparison of BPM between the three business units, effectively treating them as embedded units of analysis within Company B.

4.3 Conduct of the Case Studies

Both case studies occurred in the first half of 2004 with the final presentations taking place in June 2004 for Company A and August 2004 for Company B. The data collection for Company A occurred from February to April and for Company B, from April to June 2004.

The Key Contact acted as a single point of contact for arranging the research activities within each company. The Key Contact was responsible for completing relevant ethics documents and internal communication, co-ordination, scheduling and introductions with participants for all data collection sessions. The Key Contact selected participants based on his/her knowledge of the organisation and the individuals. For the interviews and surveys (other than the *Maturity Survey*), participants were members of the core BPM teams or were highly knowledgeable about the *BPM Initiative*. Participants completing the *Maturity Survey* were from operational business areas within Company B.

Interviews were between 1.5 and 2 hours long and conducted on company premises. Interviews with Company A included a single representative in each interview. Interviews with Company B included two representatives in each interview due to the centralised nature of the *BPM Initiative* and the broader development of skills and knowledge within this team. Participants received a copy of the *Interview Guide* at the commencement of the interview.

The *Feedback Survey* completion occurred at the end of the interviews. For Company A, the review of the *Maturity Survey* questions occurred at the end of the interview. For Company B, completion of the *Maturity Surveys* occurred in the two weeks following interviews to fit with work commitments of participants.

The recording of interviews acts to support data collection – however, neither company in the two case studies agreed to record the interviews[33]. This increased the reliance on the Researcher's field notes and observations.

[33] Both organisations were experiencing a level of conflict and resistance to the introduction of BPM and the Key Contacts did not want to do anything that may have put further pressure on this by asking participants to record interviews.

Consequently, a second researcher supported data collection during the interviews by acting as an observer and scribe[34]. At the completion of the interviews, both researchers transcribed their notes independently before coming together for comparison and integrating prior to data analysis. An example of the field notes from an interview is contained in:

Appendix 13.1.7 – Write up of Interview Notes: Company A.

At the completion of each study, there was a presentation to participants to share and discuss the results. The presentations lasted one hour and included the opportunity for participants to provide further feedback and to ask questions of the case study outcomes.

4.3.1 Case Study: Company A

In 1999, the Queensland Government rationalised its operations in the utilities industry, combining a number of independent entities in the creation of Company A. The independent entities included the six regional Queensland electricity distributors and their subsidiary retailer. At this time, Company A had an asset base of $7.7 billion, consisting of approximately 150,000 kilometres of powerlines, over one million power poles, associated infrastructure including major substations and power transformers and 33 stand-alone power stations supplying isolated communities. The combined entity serviced approximately 600,000 customers across regional Queensland, extending around 1.7 million square kilometres to capture 97% of Queensland. Seen as one of Australia's largest purchasers of renewable energy Company A was actively involved in the generation of solutions for alternative energy. Company A's vision was:

"…To be a world-class, customer-driven energy business…"

At the time of the case study (2004), Company A had two major business areas – *distribution* and *retail*. The distribution business accounted for 80% of Company A's profit and 60% of staff, with retail accounting for the remaining 20% of profit

[34] The second researcher was a Masters student undertaking a project in BPM.

and 40% of staff[35]. Table 29 summarises key dimensions of Company A at the time of conducting the case study.

Company	Sector	Industry	Employees	Asset Base	Company Start Date
A	Public GOC	Utilities	4,000	$7.7 Billion	1999

Table 29: Company A – Key Organisational Dimensions

BPM within Company A

From 2001, Company A commenced its *BPM Initiative* as a means of overcoming the duplication and inconsistency that arose from merging the six entities. According to participants, the separate entities had been *"playing together"* for 3 years and were looking for *"unification"*. The organisation was looking for *"new efficiencies, reduced duplication of process documentation, no forced staff reduction and common core processes"*.

The CIO had responsibility for the *BPM Initiative* although he directly reported to the CFO, making the Finance Department ultimately responsible for the initiative. A core BPM team reported to the CIO. This team was centralised with distributed authority for process management residing within the wider business.

The Key Contact (i.e. the CIO) selected participants but did not participate in the data collection due to existing work commitments. The study included five 1.5 to 2 hour sessions with five key personnel. During these sessions, participants responded to questions in the Interview Guide for a given factor, provided feedback on the Maturity Survey questions for that factor and completed the Feedback Survey. Table 30 summaries the participation from Company A.

[35] The source of the information in this section was the Establishment Survey (2004) completed by the Key Contact.

Participant	Factor
Acting Group Manager IT Strategy (IT Department)	IT/IS
Group Manager Organisation Culture (HR Department)	Culture
Business Manager HR Service (HR Department)	Accountability
Process Architecture and Governance Manager (HR Department)	Methodology
Finance Manager (Finance Department)	Performance

Table 30: Company A – Participants

Over and above the interviews and surveys, the Researcher also solicited and analysed documents including:

- Business Process Model
- Cultural Model
- Intranet Site
- Milestone Map
- Strategic Change Initiatives
- Statement of Strategic Intent[36].

Figure 17 provides an example of the Business Process Model of Company A.

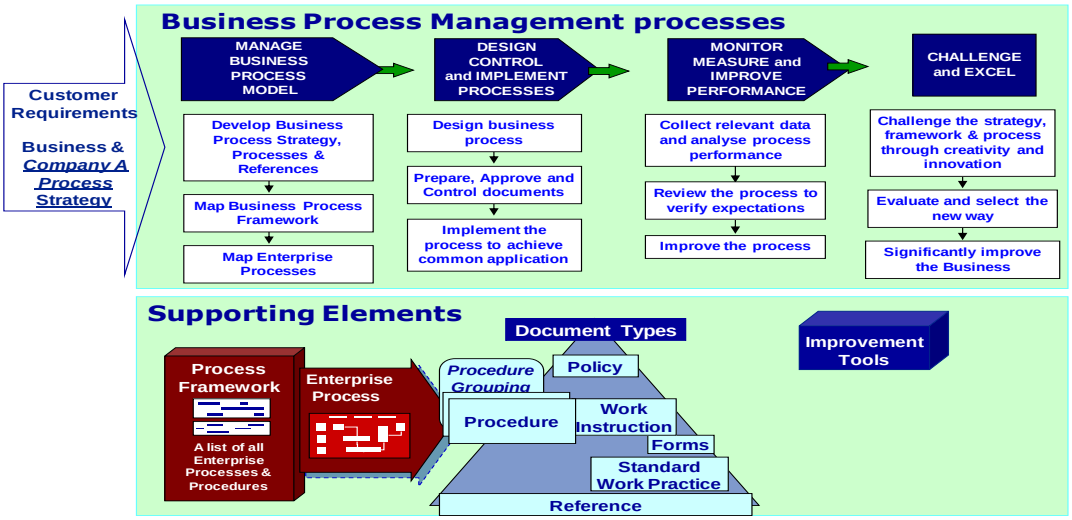


Figure 17: Company A – Business Process Model

[36] Confidentiality agreements with Company A prohibit the Researcher from providing further details in relation to these documents.

As can be seen from this model the *BPM Initiative* within Company A is consistent with a lifecycle view of BPM as its focus is on the management of processes within the organisation. The supporting elements reflect the recognition of aspects of an organisational view, recognising the development of a process framework, including an enterprise process model, a repository of standards governing process work and a toolbox of process improvement tools.

4.3.2 Case Study: Company B

Company B was a government owned corporation (GOC) that operated predominantly in the transport industry. Company B commenced operations in 1864, giving it a rich history. In the financial period 2002/03, the company had total revenue of approximately $2 billion, assets of $7.8 billion, slightly less than 14,000 employees and four lines of business. The nature of each line of business varied, with customers ranging from large multi-national mining companies to everyday commuters. Table 31 summarises the key dimensions of Company B at the time of conducting the case study[37].

Company	Sector	Industry	Employees	Asset Base	Start Date
B	Public GOC	Transport	13,700	$7.8 billion	1864

Table 31: Company B – Key Organisational Dimensions

BPM within Company B

According to the Key Contact, in 2002 the *BPM Initiative* within Company B became a key concept used to manage the business. The importance of the efficient management of processes was recognised and BPM principles underpinned a newly implemented business model. Dissatisfied stakeholders and customers, combined with increasing competition resulting from regulatory changes in the industry, were driving Company B's *BPM Initiative*. The initiative was characterised by a project that had a timeframe of three years, a team of 10 full-time staff and expected to deliver results in terms of profitability and value.

[37] The source of the information in this section was the Establishment Survey (2004) completed by the Key Contact.

Initially the majority of people involved in Company B's *BPM Initiative* were from Information Systems. Six months into the 3-year project, the size of the community began to decrease as staff became involved in other projects. Consequently, the team disbanded for a period of six months whilst the Business Process Design Advisor (i.e. the Key Contact) researched BPM further. After six months, the Business Process Design Advisor recommenced the project, armed with deeper knowledge of BPM and a new focus for progressing.

The Key Contact selected participants for the study and participated in data collection. The study included five 1.5 to 2 hour sessions with six key personnel. As in the first case, participants responded to questions in the *Interview Guide* for a given factor, provided feedback on the *Maturity Survey* questions for that factor and completed the Feedback Survey. Table 32 summarises the participation from Company B.

Participant	Factor
Consultant: IT Alignment – Shared Services	IT/IS
Principal Consultant: IT Alignment – Shared Services	IT/IS
Acting Manager – Business Information Services	Accountability Culture Methodology
Manager HR Business Services & Development – HR Department	Culture
Integrated Business Systems Advisor – Strategy Unit	Accountability Methodology Performance
Programme Officer – Strategy Unit	Performance

Table 32: Company B – Participants

Over and above the interviews and surveys, the Researcher also solicited and analysed documents including:

- BPM Concept document
- Business Model
- Intranet Site
- Selected process models
- Internal presentations and publications.

4.3.3 Summarising BPM Initiatives in Company A and B

In summary, both Company A and Company B had a core BPM team responsible for implementing BPM throughout the entire organisation. The BPM team within Company A did not have the authority to enforce BPM within any area of the organisation however and the team in Company B did. Table 33 summaries the key dimensions of the two *BPM Initiatives*.

Company	BPMI Resources	BPMI Scope	BPMI Authority	BPMI Responsibility	BPM Approach
A	Core Team	Whole Organisation	Distributed	CIO reporting to CFO	Lifecycle
B	Core Team	Whole Organisation	Centralised	Chief Strategy Officer reporting to the CEO	Organisational

Table 33: Company A and Company B – Key BPM Dimensions

4.4 Refining the Conceptual Model

The analysis of data collected during the study led to a number of changes in the *Initial Conceptual Model* resulting in a *Refined Conceptual Model*. This section details the data analysis for each factor including the changes to the model.

To assess the perceived relevance of each factor to the progression of *BPM Initiatives*, participants of Company A and Company B were asked to rate the identified factors on a 1 to 5 scale, with (1) being Not Important and (5) being Very Important. Table 34 shows the average results across the two case studies.

	Performance	Accountability	Methodology	Information Technology	Culture
Average	4.75	4.5	3.75	3.00	5.00

Table 34: Company A and Company B – Combined Factor Relevance

This outcome indicated that the participants viewed Information Technology as being of neutral relevance, which was consistent with findings from the earlier literature review. According to the participants, the most relevant factor was Culture, followed by Performance, Accountability and Methodology.

4.4.1 Performance

The term *performance* (as used within the *conceptual model*) included the measurement, assessment and actioning of BPM related performance. The *Performance* factor received an average relevance score of 4.75.

Both organisations were using the Balanced Score Card (BSC) (Kaplan and Norton, 1993) to set goals and objectives and to promote these through the organisation. For Company A this resulted in measures being set within (not across) functional areas with a participant stating:

> *"…a problem here is that we have functional management and end-to-end processes that cut across a number of functional areas (…) we don't measure process efficiency…"*

According to a Company A participant, this resulted in a situation whereby:

> *"…there is no use of performance measures to improve processes (…) we do measure but we don't do anything about it…"*

Furthermore, a Company A participant indicated:

> *"…where we need to get to now is on measuring the process itself rather than just focusing on the outcomes…"*

Company B also used Balance Scorecard with a participant noting:

> *"…Balanced Score Card is based on historical issues and known issues, arising from surveys on customer satisfaction and internal surveys (…) although there are no resources to check how well business units apply this…"*

The result in Company B was that:

> *"…high-level management reports on a cross section, not on process outputs as such, more on the outcome of the interaction of a whole lot of processes. If it indicates poor performance they look at why things have occurred…"*

Furthermore, a Company B participant indicated:

> *"…this makes us reactive to some things (…) those that are more visible get action (…) safety and the operation of trains gets the focus…"*

> *"…we have tended to be more worried about financial aspects and cost drivers than performance management (…) we need to find a balance between the two…"*

Similarly, a Company A participant highlighted a need to consider future requirements indicating:

> *"…policies and procedures have become more bureaucratic as we have focused on risk management too heavily and not on process efficiency (…) we have enormous maintenance and capital expenditure coming up (…) we have limited financial and human resources so efficiency is critical to future operations and we need process effectiveness to cope…"*

In doing this the Company A participant suggested that:

> *"…to improve processes, we need to improve the management of information around processes (…) now to get funding you need to say what the benefits are and how they are going to be measured…"*

The management of the performance of individuals was also notable in both organisations, as evidenced by the development of Performance Management Plans and the use of individual KPI's. A Company A participant indicated:

> *"…no performance measures on the process are related to their KPI's or bonuses on their roles within the process (…) for each person there are KPI's around the management of their section of the process…"*

A Company B participant indicated:

> *"…a number of initiatives are run outside of accepted practices (…) this gives us internal performance issues…"*

This indicated that despite the use of KPI's and Performance Measurement Plans, measures for individual performance did not necessarily relate individual effort to process performance.

The Researcher noted that participants discussed the need to align performance with other areas such as governance, risk and finance systems. In discussing performance for example, a Company B participant stated that it:

> *"…ties to Governance framework – if new legislation comes in, the BPM unit is responsible for controlling and co-ordinating the changes throughout the business…"*

When discussing process performance a Company A participant indicated:

> *"…we still need to look at priorities and plan these in the future – working from a risk management perspective…"*

Within Company B a participant indicated:

> *"…when reporting on the performance of a process improvement project it needs to be aligned with the budget and have a variance analysis done (…) variance analysis within SAP is being aligned with the end-to-end process… "*

As a further practical example of aligning process performance with strategic issues, a Company A participant indicated:

"…we had 6 ways of doing asset management, from reasonable systems to no systems, we didn't know how many poles we had, where they are, what condition they are in (…) this presents significant risk and litigation issues. Being able to locate the poles and knowing where the defects were enabled us to undertake a defect identification project to find them and within 6 months, we fixed them all. Now we meet statutory requirements and have an Asset Inspection and Defect Management Process to ensure this continues..."

Furthermore, in analysing the case study data, the Researcher noted an overlap between the methods detailed for the *Alignment* perspective and details provided by participants when discussing *Performance*. The highlighted sections of Table 35 show this overlap.

Company A	Company B
Process and Quality Strategy	BPM Methodology
Balanced Score Card	- Aligning Government Management Framework to this
Benchmarking – UMS (utilities) benchmarking	Performance Measurement Framework
Customer Surveys	Balance Score Card
- Once a year	- To align measures with goals and objectives
Process Management Manual	SCOR process model
	Project Management Framework

Table 35: Company A and Company B – Select Methods for Alignment

Based on these aspects, the Researcher extended the *Performance* factor to incorporate the two concepts of *Alignment* (i.e. originally a perspective) and *Performance*. Furthermore, because of the need to align performance with strategic goals and objectives, budgets, governance and legislative drivers the Researcher modified the name of the factor to *Strategic Alignment*.

4.4.2 Accountability

Accountability, as used within the conceptual model, included the assignment of responsibility and accountability to personnel within the organisation. There was affirmation for the inclusion of the *Accountability* with it receiving a relevance score of 4.5 making it one of the top three factors.

Within both companies, there was high-level assignment of accountability for processes but there was little assignment of accountability below the executive and senior management level. A participant from Company B stated:

> *"…we are currently doing accountabilities for Senior Executives and aligning them with processes (…) at this stage just to Senior Executive level, the others will happen over time…"*

Similarly, a participant from Company A indicated:

> *"…there are various levels of accountability especially in finance where it is quite rigorous however it is aligned with operations not the strategic accountability tree…"*

> *"…other than finance, there is no alignment between accountability and goals (…) with the exception of the senior executive level where there is a little in the strategic area…"*

Both companies assigned process accountability within existing functional silos and did not assign accountability based on end-to-end processes. A participant from Company B indicated:

> *"…accountability is aligned to silos with managers assessed on individual business units not within the value chain, therefore they are not strategically aligned (…) individual goals are not the same as process goals as they only look at one part of the process and not the whole process…"*

A participant from Company A stated:

> *"…the process the business goes through is key deliverables and key results areas are pushed down from the top and all managers have key deliverables that are tied back to this (…) this is not related to processes (…) it is still a functional based approach at most levels with lower levels being more procedural…"*

Participants within both companies indicated that accountability by itself was not sufficient for achieving the desired actions from individuals within the organisation. A participant from Company B indicated:

> *"…the employee's hands are tied as the authority to change lies with accountability and at best they have responsibility…"*

An issue arising from the lack of a formal accountability framework was the dependence on the motivation of the individuals. Participants from Company A indicated:

> *"…there isn't much direct accountability for process in Company A, lots of work is being done but when it falls over there is a blameless society that doesn't accept responsibility (…) what is missing is that we don't hold people accountable…"*

> *"…people just do their own thing, they don't accept new guidelines, there is no acceptance of responsibility…"*

Similarly, a participant from Company B stated:

> *"…there is a formal accountability framework versus the informal accountability framework, some managers make themselves accountable for the execution of processes, these show responsibility that lead to efficiency gains but it depends on the individual (…) consequently results fluctuate dependent on the areas where the managers have self imposed accountability…"*

Participants within the two companies indicated a need to improve the accountability for process. Comments from Company A participants included:

> *"…the entire process is not satisfactory, people at the bottom end don't know what deliverables are or are not accountable for the outcomes…"*

> *"…there is a lack of understanding and a poor reaction, we seem to be falling short of doing anything about it (…) there is a real commercial need to deliver in the Distribution area, Retail is a bit better but it really comes back to the maturity of the organisation…"*

> *"…a manager can have up to 25 key deliverables (…) best practice indicates they should have 5 to 6 so they are defeated before they even start (…) this affects their ability to prioritise as they have an inability to know what is important…"*

> *"…we are definitely lacking, not motivating to perform at a level, we need to create an attitude that less is more with regard to the number of key result areas…"*

Participants from Company B also identified areas of deficiency in their approach indicating:

> *"…no one has accountability for things like the provision of tools…"*

> *"…there is no accountability for improvement of BPM. It is pretty much just whatever is flavour of the month…"*

> *"…accountability for processes is weak, systems people have responsibility for audit but no-one is overseeing it to ensure anything is done about it…"*

A participant at Company B highlighted one potential source of this lack of accountability indicating:

> *"…85% of the company is covered by a union (…) if we try to change anything the union will become involved and Company B gets gun-shy (…) as a result there doesn't seem to be any accountability…"*

In an attempt to address the lack of accountability, a participant at Company B indicated that:

> *"…the new Business Model based on process orientation will change practices and documentation (…) it details the organisation (structure, corporate performance and accountability), the strategic processes (planning, management and reporting), the people (role definitions, capability and reward and recognition) and the systems (all systems)…"*

Like Company B, participants at Company A highlighted areas of difficulty in modifying the accountability structures indicating:

> *"…if it is a non-award person it possibly leads to reward and bonus (…) however if it is an award person it is linked to an Enterprise Bargain Agreement that has automatic increases (…) the ability to measure performance is hard to do within the industrial sector…"*

and

> *"…we need to balance what is done with a culture of risk aversion (…) we had a project to look at how we employ contractors and expert consultants as we couldn't identify contractors within the company. We spent 18 months to 2 years working to develop a process that is so well documented but it is too unwieldy to use because we tried to overprotect with good governance principles so wrote a process that would never get us into trouble but was completely unworkable…"*

and

> *"…retail thinking and deliverables is much more commercially driven and better at accepting responsibility but not necessarily accountability (…) they are less unionised, they are a newer arm of the business with less history and are more commercially driven…"*

Furthermore, the need to focus on decision-making was evident in a number of comments. Comments from Company A included:

> *"…lots of people are too frightened to make decisions or do something. There is lots of arse covering to ensure nobody is at fault…"*

> *"…there is no specificity (…) if managers are less specific it makes their life easier, it is a self-serving principle (…) accountability needs to be driven much harder from the top…"*

> *"…there is a lack of co-ordination between projects and policies, and practices are determined by sticking a finger in the air (…) we use consultants and contractors that do things their own way…"*

Other issues with decision making at Company A included:

> *"…the new CEO is looking to devolve the business from being autocratic and bureaucratic which is seen to slow things down and make us less reactive competitively…"*

> *"…we have adopted a federal model of centralised process management and decentralised areas have a stake in process outcomes…"*

In analysing the case study data, it became apparent to the Researcher that assigning accountability was only a sub-set of a larger issue and in itself, was not sufficient for promoting desirable behaviours. Both companies faced issues with changing the culture and people within the company through a lack of authority and influence. Evidence supporting this view included reports of a lack of empowerment, the need to change from a control and command environment, over reliance on compliance and an inability to affect reward and remuneration

structures in order to address performance issues within people and ultimately within processes. Furthermore, there was evidence that there was a lack of process-based decision making within the companies and an absence of direction in some aspects such as authority for the selection of tools.

Consequently, the Researcher extended the *Accountability* factor to include decision-making, authority and compliance. To recognise this broader intent, the Researcher subsequently renamed the factor *Governance*.

4.4.3 Methodology

Within the *initial conceptual model*, the *Methodology* factor encapsulated the adoption of recognised methodologies for use in BPM. The relevance score for *Methodology* of 3.75 indicated that participants did not rate this factor as being as important as Performance, Accountability and Culture but that it was more relevant than IT/IS.

A Company B participant noted the importance of methodologies for gaining consistency, indicating:

> *"…methodologies enable the comparison of apples and apples and have a lot of supporting documentation that enables self education…"*

Similarly, a Company A participant indicated:

> *"…methodologies have led to consistent ways of producing (…) audit indicated that there was a degree of understanding regarding process…"*

The case study showed that companies use a range of methods and methodologies in their *BPM Initiative*. Company B used Six Sigma as a method for process improvement, but it also had a BPM Methodology that links with its governance framework to link decision making and accountability. A participant

from Company B however, indicated:

> *"…Six Sigma provides a standard approach to implementation but doesn't measure the actual improvements (…) we currently have no means of determining how effective Six Sigma is…"*

This highlighted a need to consider the management of the methods themselves and not just the use of the methods.

In a similar vein, a Company A participant noted:

> *"…the governance role is important for getting consistency, it controls whether things get published on the intranet…"*

Furthermore, in discussing methodologies the Company A participant discussed the role of the Business Unit Working Group that consisted of the Process Managers. This group was responsible for:

> *"…formal updates, quality of content, new frameworks and interface agreements…"*

This indicated to the Researcher that there was a potential connection or overlap between the *Methodology* factor and the *Accountability* factor. Consequently, the Researcher reconsidered the name and intent of the *Methodology* factor to ensure clarity. In doing so, the Researcher noted an important distinction between the terms *methodology* and *method.* This distinction was that *method* refers to the procedures and techniques whilst *methodology* includes the principles that guide the deployment and integration of the methods.

Considering this distinction in light of the case study data, the Researcher contends that something can be a *method* or a *methodology* dependent on the context of its use. One could argue that Six Sigma is a *methodology* for process improvement because it provides guidance on how to combine different *methods* (such as DMAIC, fishbone diagrams and other similar methods) when improving processes, for example. This study is considering BPM and not process improvement, however.

From a BPM perspective where the focus is on management of the process lifecycle or the organisation, Six Sigma is one of a number of approaches that a company can include (along with other approaches such as Lean) in an overarching toolbox. From a BPM perspective, the principles associated with deploying and using approaches such as Six Sigma and Lean become different to the principles for deploying the same approach for process improvement. A BPM methodology may include deployment issues as:

- Which methods does the organisation use for process improvement – Six Sigma, Lean, an in-house development, or other similar methods?
- Which methods does the organisation use for modelling processes? Is it BPMN, IDEF0 or other similar methods?
- Are the same methods used within all business entities, or is Lean used in the manufacturing arm of the business and Six Sigma in the services area?

Consequently, from a BPM perspective, Six Sigma and Lean (and other approaches and techniques applied to various stages of the process lifecycle) are *methods* and not *methodologies*. Table 36 shows the methods used within the *BPM Initiatives* of the two companies.

The concurrent review of the *Accountability* factor and the extension of this factor meant that the new *Governance* factor would encompass BPM decision-making and principle setting. The need to make factors independent of each other led the Researcher to refine the intent of the *Methodology* factor to include the application and use of the methods but to exclude the principle setting associated with deployment.

Consequently, the Researcher decided to keep the *Methodology* factor but to rename it *Methods* to reflect the separation of usage from decision-making and principle setting which would be included in *Governance*.

Perspective	Company A	Company B
Alignment	*Process and Quality Strategy* • Developing a new process framework but this needs buy-in *Balanced Score Card* *Benchmarking – UMS (utilities) benchmarking* *Customer Surveys* • Once a year *Process Management Manual* • Custom methodology • Available to everybody on the intranet • Provide training in the methodology	*BPM Methodology* • Plan, do, check, act cycle • Aligning Government Management Framework to this • Takes into account Process Owners, cross functional teams and a tool kit with the steps to go through *Performance Measurement Framework* *Balance Score Card* • To align measures with goals and objectives *SCOR process model* • Used to align process models internally *Change Management Programme* *Project Management Framework*
Design	*Accenture Reference Model* • Processes for the Utilities industry • Anyone can design a process	*IDEF and IDEF0* *Process Flow Diagrams* *Value Chains* *AS-IS and TO-BE modelling*
Execution	*Just part of what is done* • Have to follow methodology as it is gate controlled	*Integrated total quality management system* *Benchmarking*

Perspective	Company A	Company B
	Formal change process owned by HR • Process people (i.e. employee and organisational services) are more closely aligned with the change area	• Applied inconsistently
Control	*ISO 9000 Compliance*	*Service Level Agreements* • Being used to align performance with measures • Link to Intranet site for information *Opportunity Improvement Register* • Reviews policies and processes for compliance within each business area • Channels information *Internal Audit, Post Implementation Reviews and Full-ups*
Improve	*None in use* • Will be considered in the next stage • Design, control and implement all joined • Starting to look at ABEF	*Six Sigma* *Motorola Methodology* • For AS-IS and TO-BE *Integrated Quality Management System* • Gives consistent approach

Table 36: Company A and B – Methods used within the BPM Initiatives

4.4.4 Information Technology

Within the initial conceptual model, this factor included the use of *IT* resources in the implementation and conduct of BPM. Participants from both companies indicated that *IT* was vital to the operation of the companies. Despite this, *IT* received the lowest relevance score during the case studies, averaging a score of 3.

According to a Company A participant, the *BPM Initiative* had not resulted in improvement in the suitability of IT functionality, indicating:

> *"…it's not thought through that way (…) processes still live in silos (…) at a high level people talk about process but a low level the thinking is about functions…"*

This manifested in passive resistance to technology changes and a division between the process area and the business, evident in the statement by a Company A participant that:

> *"…people don't understand what is being pushed from the process area (…) it's a change management issue whereby they agree on the surface but resist in strange ways…"*

Similarly, within Company B a participant stated that:

> *"…all new IT projects should go through a business process analyst, however this is sometimes skipped for urgency and the business requirements are done and signed-off by the Process Owner…"*

This caused problems however because the:

> *"…business understanding of the process is not good and there is a reliance on user acceptance testing to pick things up…"*

Within Company B, a participant indicated:

> *"…there is a bottom-up approach to IT planning (…) it is done as a part of the Corporate Budget and Planning…"*

This approach resulted in mixed results. According to a participant within Company A, the use of IT in automating processes was not always beneficial due to a lack of supporting methods for undertaking the analysis. For example:

> *"…processes are not looked at deeply enough and changes do not always incorporate needs of all business areas (…) the automated timesheets have become less efficient but the travel system more efficient…"*

Similarly, within Company B a participant indicated:

> *"…no-one really thinks about the solution, what value it is going to add, why it's being done (…) cost and time is more important than business fit..."*

Company A had found that the use of IT in the design of processes led to improvements with a participant stating:

> *"…we just released a new Contractors and Consultancy process, taking six processes and merging into one. One thing that helped enable this was the level of duplication evident in search returns leading to an increased awareness of the duplication…"*

Similarly, within Company B, a participant indicated that the use of System Architect had:

> *"…established control, structure and rules, everyone must follow the methodology and it ensures a consistent approach although some areas are better than others…"*

Company A found success stories to be beneficial in helping to build future systems around processes. A participant indicated:

> *"…we used SAP to implement the Pole Inspection process and replace the manual system. This enabled asset identification when inspecting the poles. This was the first thing, but now the thinking is spreading into a more integrated system project to build on this…"*

Company B had similar evidence of success with automating aspects of a process with a participant indicating that the use of capacity planning tools was critical:

> *"…we couldn't survive without the capacity planning tools, the running of the monthly reports (…) used to take 3 or so weeks, the new system takes half an hour…"*

Table 37 shows the IT in use within the two companies. This data showed that despite a multitude of systems in evidence, these rarely corresponded to end-to-end processes, thereby creating the need for interfaces or integration. In both companies, email featured heavily as a means of communicating BPM practices, with both companies having intranet sites with dedicated BPM areas. Company A's intranet site was the third most visited site next to the telephone directory and job vacancies. Aside from benefits to the improvement of specific processes, Company A and B displayed IT benefits in the automation and standardisation of BPM tasks, improved access and governance of consistent information, and as a means of communication.

Consequently, the Researcher decided to retain the Information Technology factor within the model.

Perspective	Company A	Company B
Alignment	*Process Document System* • A web based system on the intranet that everyone can access • Stores all forms and process documents • Integral to the orientation of new staff to processes • Use a Systems Agreement to guide desirable behaviour *Email System* • Solicit feedback on particular topics	*Website for Process Management* • Communication of guidelines and specifications for processes *Email* • Quarterly updates of what BPM group is doing
Design	*4TQ* • Flowchart software used to model inputs and outputs of the process • User friendly • Access given to those who want it • Cheap/local product that may not be supported • Thinking of using ARIS	System Architect Visio
Execution	*Significant but disjointed* • 1000 systems, 800 desktop applications • Looking to integrate ERP system rather than best of breed • Expected to capture about 50% of existing systems	*SAP R 2 (but heavily customised)* • Prolific number of MS-Access databases • Majority developed in-house • Starting to use integration tools to build interfaces and the human integration is to be replaced with system integration *HEAT Workflow (Call Centre)*

Perspective	Company A	Company B
		Staffware • Processes often aren't designed so ad hoc workflow prevalent • Refusal to use and going outside of system with emails
Control	*Intranet* • Approval names automatically put on process documents	*38 separate and disjointed Incident Management Systems as a risk adverse organisation* • Low levels of IT usage - unless functionality within the standard system this is not done *SAP for Procurement process* • Authorisation held within process • Very locked down • Delegation tightly controlled *Email* • Track maintenance, alerts for problems done by fax and email
Improvement	*Intranet* • Use intranet portal to identify process owner, download process model, change model and submit for update • Access list of System Owners • Business Process Document Co-ordinator manages	*Some capacity tools* • Within certain areas such as Product X Haulage Simulation, Track Planning Capacity, Capacity Dynamics Project

Table 37: Company A and Company B – IT used within the BPM Initiatives

4.4.5 Culture

Within the model, the Researcher initially defined *Culture* as the acceptance, practice and promotion of BPM within the organisation. The *Culture* factor received a relevance score of 5.0, making it the highest rated factor and affirming its importance to the model.

The range of comments from participants showed the effect and potential consequence of culture on the progression of BPM supported this rating. The challenges of changing culture were also notable however. A Company A participant, for example, claimed:

> *"…the process side is reasonably straight forward, the soft bit is the hard bit and requires considerable negotiation and compromise (…) realisation about the behaviour, beliefs and mind sets of organisations (…) the socialisation impact…"*

The data showed the effect that the existing organisational culture had on the ability to progress with the *BPM Initiative*. The Key Contact at Company A indicated that there was *"opposition"*, *"avoidance"* and *"conventional"* cultural divisions towards the *BPM Initiative*. This led to a level of resistance expressed in comments from a Company A participant that:

> *"…there is an attitude of, this is the way things are done so don't rock the boat…"*

Similarly, in Company B, the Key *Contact* described the organisation as consisting of three distinct groups with respect to the adoption of the *BPM Initiative*:

> *"…we have three groups (…) the coalition of the willing, this is the younger people under 35 that are frustrated by being hampered (…) the old school Company B who have seen it all before and want to know why are we doing this (again) (…) and the innocent bystanders (…) those that have no idea about what's going on and just want to take the path of least resistance…"*

There were numerous consequences arising from the culture of the organisation. With regard to resourcing of projects within the *BPM Initiative,* a Company B participant indicated that:

> *"…if it is a special project some areas will put their 'finest' on it (…) others give resources to get them out of their own backyard and not because of the expertise (…) suitability comes when self-driven and the areas start something themselves…"*

Whereas, with regard to advancing processes through innovative thinking, a participant from Company A stated that:

> *"…generally there are low levels of innovation as this is not a natural reaction of the operation…"*

Similarly, within Company B a participant indicated:

> *"…people just focus on the part that suits their own agenda (…) there is no real control over process outcomes, change is not happening across the silos (…) there is a mentality of 'we do everything differently'(…) most areas only look at own areas and don't look at end-to-end…there is no consistency and no common goal…"*

Both companies experienced consequences with regard to how people respond to process change. In Company A, this reflected in disparate views with a participant indicating:

> *"…there is avoidance, whereby there is a sense of 'its just going to change so don't worry about it' (…) and there is conventional, whereby individuals say they are 'just following policy or process procedure'…"*

Within Company B, it reflected in a lack of knowledge sharing and the protection of self-interest, with participants indicating:

> *"…an attitude of looking for 'what's in it for me' not how can they improve the process (…) in general they will only do it if they see personal value (…) the exception is those with personal values…"*

> *"…people have their pet way of doing things and they don't like to share, knowledge is power so there is no knowledge transfer, no working to a common goal…"*

For Company B this resulted in a number of consequences, for example a participant stated:

> *"…we need to really look at cultural issues. There is no focal point in the organisation, no common corporate direction. The result is poor resource allocation, poor budget allocation, lack of clarity and understanding…"*

> *"…there is an issue with Company B demographics and with centralised management rather than regional management (…) need strong presence to change…"*

This highlighted the role of change management with regard to progressing *BPM Initiatives*. To address these problems, a participant within Company B stated:

> *"…change management is being used with the Business Model implementation, also we have implemented values and behaviours based on the results of employee survey which shows we have gaps in leadership and innovation…"*

Similarly, a participant with Company A indicated:

> *"…when change management aspects are done well people's acceptance of process change is pretty good, when change management is not done well acceptance is not good…"*

Communication was another way in which companies sought to advance their *BPM Initiatives*. A participant from Company B suggested that:

> *"…there is some corporate strategy on the Intranet but no central hub of information (…) this would be nice to have (…) however improved communication is leading to greater acceptance…"*

Participants from Company A also discussed the role of communication, looking at the effectiveness of communication and indicating:

> *"…there is an issue with how organisation is informed, we use communication up-dates which is an email on a monthly basis regarding the process/procedure that is being worked on (…) they look at end-gain but they are not really listening…"*

Furthermore, participants from both companies indicated that implementing BPM requires a long-term commitment, with Company B stating:

> *"…it is only early days (…) only 18 months old and we are expecting that it will take 3-5 years to show real success (…) initial response has been positive…"*

Similarly, a participant from Company A indicated that:

> *"…there has been bottom-up ground swell from people not being able to do their job (…) it has been 12-18 months with no discussion but now the tides are turning and it is a key topic of discussion (…) people are fighting back…"*

Both organisations felt that leadership was critical to overcoming cultural issues and was essential to progression. A participant from Company B for example, stated that:

> *"…leadership from the top is seen as vital and need to be actively supporting / committing (…) we are using a senior executive change team…"*

A participant from Company A however, highlighted the need to recognise the affect of different leadership styles, indicating that:

"…personality and leadership is important, different styles of people can result in a sub-optimal approach…"

When discussing how they sought to progress their *BPM Initiatives*, there was further evidence of the importance of addressing leadership. A participant from Company A indicated that:

"…we need to adopt psychological principles of acceptance of responsibility (…) coaching, mapping leader profiles, to impact of the organisation…"

Similarly, a Company B participant stated that:

"…we address silo mentality with leadership programs, training schemes, reviewing recruitment and selection to include values as well as technical…"

The vital role of *Culture* on the progression of *BPM Initiatives* was obvious throughout the data. Recognition of the existing culture and the need to change the culture to ensure the progression of *BPM Initiatives* by changing attitudes and behaviours and improving the clarity of the initiatives was apparent during the early stages for both companies. Furthermore, the need to take a long-term approach and to address different leadership styles to ensure optimal results was also evident.

Through the case studies, there was recognition of a need to focus on the skill sets within the company and addressing shortcomings by teaching people within the organisation. This was apparent in the statements that participants made regarding other potential areas for measurement, including a Company B participant asking:

"…*should we invest more in Education and Training…"*

Similarly, Company A participants raised questions including:

"…do we have the right skill sets in the right places…"

"…the people involved – how suitable are they…"

The focus on the suitability of people and the skills they held led the Researcher to revisit the earlier literature review and the subsequent mapping to the initial factors. In doing so, it was apparent that items initially mapped to the Culture factor covered such questions, as seen in Table 38.

People Factor	
Researcher	**Description**
Armistead (1996)	A move to a process-based organisation is an organisational learning opportunity.
Box & Platts (2005)	Strong process leaders need to have an engaging leadership style.
Hatten & Rosenthal (1999)	Don't adopt a short-sighted and non-strategic view of underutilised resources.
Ittner and Larcker (1997)	Increased training in problem solving and learning skills. Use of teams to foster cross-functional cooperation.
Pritchard & Armistead (1999)	Allow time to acquire a process perspective. Train around business process. Build a knowledge base around processes. Acquire new process competencies. Integrate top level BPM strategy with team level activity. Better cross-functional working.
Zairi (1997)	Teach others about the process. Train within the process. Build specialist expertise.

Table 38: Items Mapped to People Factor from the Initial Culture Factor

Despite this, the questions the participants raised during the case study indicated that they did not intuitively associate these items with *Culture*. This suggested to the Researcher that the *Culture* factor was too broad, encompassing too many different aspects and was not providing sufficient clarity with regard to its intent.

Consequently, the Researcher created a new factor of *People* to encompass the more tangible aspects relating to the people within the organisation.

The *Culture* factor would remain and would encompass the less tangible aspects associated with the people and environment of the organisation (such as mindset and attitude).

4.4.6 Role of Context

Analysis of the case study data highlighted the role of an organisation's contextual environment on the progression of BPM. This environment can act to (a) affect the progression of the *BPM Initiative* and (b) affect the ability to advance appropriate practices within the *BPM Initiatives*, or both, as the following examples show.

When asked to nominate other potential factors for inclusion in the model, a number of participants mentioned *leadership*, as evidenced by the comment by a Company B participant that:

> *"…Leadership could be another one if not already included in the Accountability factor..."*

In a similar vein, a Company A participant suggested that another factor could be:

> *"…Leadership (…) as distinct from Culture…"*

In other case study data, comments by Company B participants regarding the consequence of leadership included:

> *"…it depends on leadership (…) they don't look at what's best for Company B but rather what is best for their area…"*

> *"…it would be nice to have a consistent approach through leadership and a common understanding of the end result…"*

The critical role of leadership was evident with a Company A participant stating:

> *"…the CEO was quite process oriented, being from a process reengineering background, however although he had a high level background, this didn't flow through to practice due to a laissez-faire attitude (…) success factors are skewed to top level support having knowledge AND doing something…"*

These comments showed that leadership is a critical aspect for progressing *BPM Initiatives*. They also showed however, that the notion of leadership crosses over multiple areas. A Company B participant suggested that leadership was separate to *Accountability*, whilst a Company A participant indicated that it was separate to *Culture*. Other comments showed that leadership affects the consistency of the approach to the *BPM Initiative* itself, as well as to the adoption of practices within the initiative. The contrasting views caused the Researcher to revisit the notion of leadership.

Leadership has the potential to affect a *BPM Initiative* in multiple ways. First, it can affect whether or not an initiative exists. Second, it can affect what the initiative looks like, that is, the areas of the organisation to which the initiative applies (i.e. its scope) and the manner in which the initiative progresses (i.e. the approach taken to implementation). Third, it can affect the selection of practices when looking to progress the initiative. Due to its critical role, if leadership of a *BPM Initiative* is poor, there may be a need to improve this before focusing on other areas. Alternatively, without strong leadership, the ability to change certain practices may be limited, as seen in the case studies with regard to *Accountability* and *Culture*. Furthermore, as evidenced by comments from a Company A participant, it is not just having the knowledge but also actioning that knowledge that is critical. Consequently, the Researcher favoured the use of a term that conveys a strong and dedicated commitment from executives such as *Executive Buy-In*.

At this stage however, *Executive Buy-In* was not a separate factor within the proposed in the model. This was because the practices and actions (both existing and possible) within other factors are in part due to, or affected by, the level of *Executive Buy-In* that exists within the organisation. To this end, *Executive Buy-In* represented an important component of the contextual environment in which a *BPM Initiative* exists. The potential for *Executive Buy-In* to shape the *BPM Initiative* with respect to its *scope* and *approach* also suggested to the Researcher that it might be more significant than other contextual variables found to affect progression.

Consequently, *Executive Buy-In* was important to the progression of *BPM Initiatives* but further investigation was required to confirm its position within the *Initial Conceptual Model*.

A major driver for the *BPM Initiative* within Company A was the integration of six companies into one. According to one participant, this resulted in the use of:

> *"…an inordinate number of policies and practices…"*

According to a participant, in some cases Company A had:

> *"...7 (policies) doing the same thing…"*

This led to Company A adopting a strong focus on *governance* to enforce a:

> *"…single source of truth…"*

Similarly, within Company B one participant articulated the initial drivers:

> *"…we are very compliance focused and do risk assessments to the nth degree (…) we also have a strong safety culture (…) would be good if we could harness that and push to other areas…"*

This indicated to the Researcher that the initial drivers of the *BPM Initiative* are likely to influence the adoption of BPM practices at the beginning of implementation.

One participant in Company A indicated:

> *"...the bureaucratic nature of the organisation has lead to a (too heavy) focus on risk management and not on process efficiency..."*

Another Company A participant commented that:

> *"...the pendulum has swung too far (…) and a detailed procedure is being written to micro-manage the process…"*

Yet another Company A participant indicated:

> *"…execution in many instances has failed as it is a product of the culture and the environment and a failure to change with the times…"*

Similarly, a participant within Company B suggested:

> *"…one of our biggest problems is that we reward fire-fighters but these are also the fire-starters (…) we reward for the wrong reasons…we don't look at proactive issues (…) we have awards that are focused on operational issues…"*

This suggested to the Researcher that, over time, an organisation needs to adjust its response to the contextual environment, and its adoption of BPM practices, to ensure they remain aligned and balanced over time.

Both companies indicated an inability to progress practices in certain areas due to the level of unionisation that existed within the Company. A participant within Company A stated:

> *"…the union environment is very much about one way to do things versus allowing variation (…) it results in an authoritative approach – does it become or is it a factor (…) it's a bit of chicken and egg, rather than constructive / consulting approach there is the use of blame / allocation, a heavy focus on blame…"*

Similarly, a Company B participant indicated that:

> *"…skills and knowledge are in isolated pockets, we have an internal labour market (…) it is hard to get new skills into the organisation due to the recruitment of internal applicants and union involvement…"*

Consequently, the Researcher contends that the existence of some contextual variables (such as the level of unionisation), can affect an organisation's ability to advance the development of capabilities that are important to progressing *BPM Initiatives*.

This study includes investigation of the role and affect of contextual variables but the identification of all possible contextual variables is outside of the scope of the study.

Consequently, following the case studies the *initial conceptual model* was refined as shown in Figure 18.

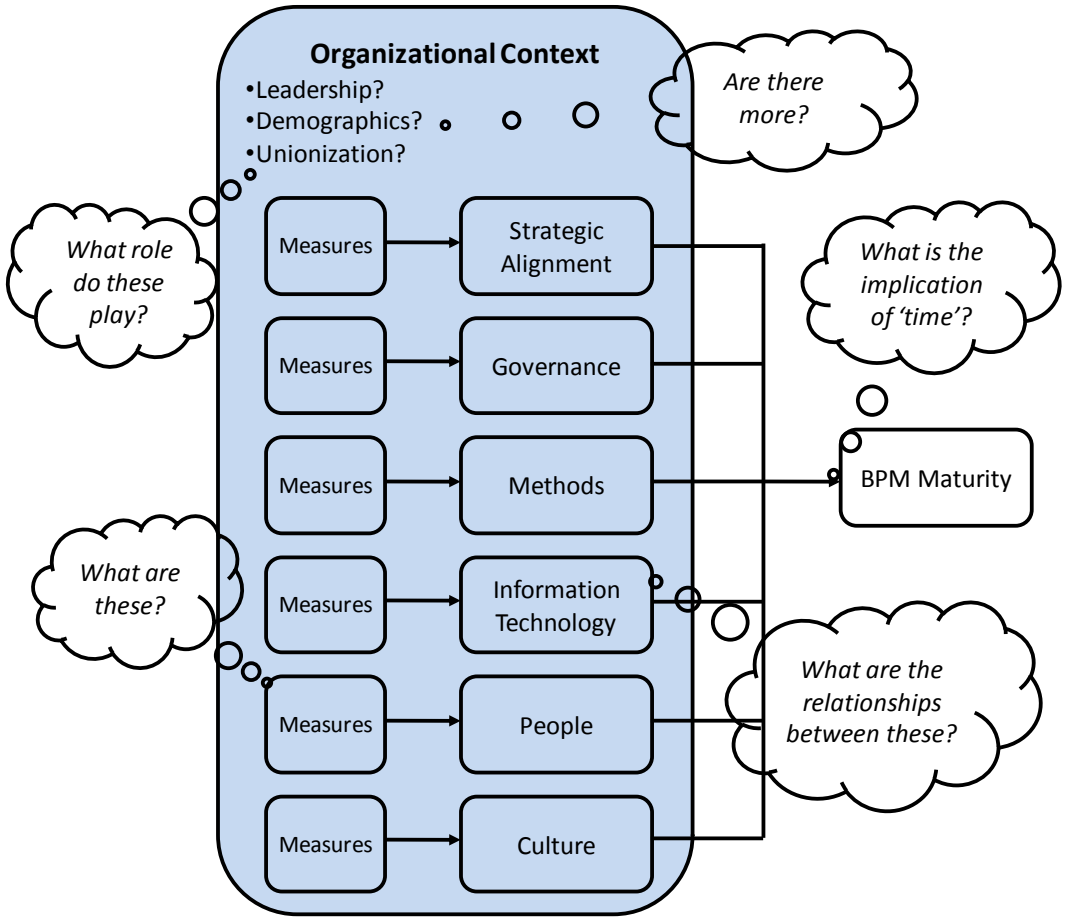


Figure 18: Refined Conceptual Model

4.5 Consequence of the Case Studies

During the case studies, the Researcher identified two further areas that influenced the progression of the study:

1. Need to extend the model
2. Need to address terminology issues.

The next sections provide further discussion on these points.

4.5.1 Model Extension

To assess the completeness of the proposed factors, participants from Company A and Company B had the opportunity to comment on the five factors included and to identify other factors they believed to be critical to the progression of *BPM Initiatives* within organisations.

A number of participants commented with respect to the proposed five factors with one Company B participant stating:

> *"…the five chosen are believed to be the appropriate factors…"*

Others extended or clarified dimensions within these factors. With regard to the *Performance* factor, a Company A participant suggested that there be:

> *"…some effort to identify measures up front and to consider both the current and desired future state…"*

Another Company A participant suggested that the *Culture* factor include:

> *"…consideration of both internal and external factors (...) and the inclusion of environmental issues such as industry and sector, the role of government controls, and tight industry regulation and intervention…"*

A *Company B* participant suggested providing further clarity around the factors, as evidenced in the comment:

> *"…further expansion of the Performance and Culture factors would be useful..."*

Whilst a Company A participant queried the inclusion of:

> *"…stakeholders, other than customers…"*

Together with the changes resulting in the *Refined Conceptual Model*, these remarks indicated to the Researcher that further clarification and definition of the factors would be beneficial.

4.5.2 Terminology Issues

In undertaking the case studies with Company A and Company B, the Researcher became increasingly aware of the affect of terminology. This had the potential to influence not only the design of data collection and assessment instruments but also the ability to gain comparable information across companies.

With regard to the *BPM Initiative*, a participant within Company A indicated that:

> *"…the ambiguity of the issue means it takes 2 years for senior managers to get it…"*

Whilst within Company B a participant stated:

> *"…we do have a BPM Intranet site but a lot of BPM initiatives are not recognised as BPM (…) it is not communicated well and often depends on the business unit…"*

This reflected in participants from both companies stating that they were not comfortable with using the term BPM within the case studies. Company B participants however, were more vocal about its use, with one participant indicating that:

> *"…the IT unit had taken the term and run with it but their definition only uses BPM in a strict IT sense…"*

A replacement term suggested by a number of participants from Company B was:

> *"…process-oriented approach…"*

Within Company A, employees used the term *process* when referring to *work procedures* applied to tasks within functional departments. The Business Process Model however, used the term *process* in a broader context, capturing the end-to-end process for the company. To address inconsistent terminology, Company A had built definitions of the terms into their Business Process Model.

In another example, during the case studies, both companies indicated that they used slightly different terms and definitions for the perspectives[38]. In one case, a Company A participant queried the absence of an analysis phase. Whilst another participant in Company B indicated:

> *"…The five perspectives; Align, Design, Execute, Control and Improve are sufficient. Company B may not exactly call them exactly that but the meaning is the same…"*

During the review of the *Maturity Survey* questions, participants had issues with the use of the terms *core* and *non-core* processes. Within the survey, the Researcher had distinguished between core and non-core processes in an effort to explore whether companies varied the application of practices dependent on the significance of the process to the company. Participants acknowledge that this was the case, however they also reported being confused as to which processes the survey was referring to, as they did not classify processes on the basis on *core* and *non-core*.

Within the *Maturity Survey*, the Researcher had mapped questions to the perspectives. Participants reported however that this added too much repetition.

This led the Researcher to reconsider the affect of terminology when attempting to measure the factors. Understanding the effect of terminology was important to the study in order to gain consistent and relevant measurements and avoid spurious results brought about by ambiguous terms.

Consequently, clearing defining the factors and identifying potential measurement items was necessary to progress the study.

[38] During the case study the term 'perspective' was used to refer to the management stages of Align, Design, Execute, Control and Improve.

4.6 Next Steps

Refining the *Initial Conceptual Model* and gaining additional insights into potential measurement issues provided the Researcher with direction for the study. In particular, the Researcher saw value in:

(1) Agreeing a common definition for the factors

(2) Identifying measurement items for the future operationalisation of the factors.

Furthermore, the desire to produce a generalisable theory meant gathering views from a wider audience would be valuable in building on the work of the case studies. An alternative research method such as a survey was potentially beneficial for this purpose: in particular, conducting a survey would assist in overcoming geographic and cost constraints. The terminology issues inherent in the domain however meant that it might be difficult to get quality, comparable data from a broad reaching survey. The Delphi Technique however is a recognised method for undertaking exploratory survey research. Consequently, following further investigation the Researcher determined the Delphi Technique to be a suitable method for undertaking further exploration of the factors[39]. The design, conduct and outcomes from applying the Delphi technique are the focus of the subsequent chapter.

4.7 Chapter Summary

This chapter presented the findings from two case studies undertaken to test the conceptual model in a practical setting. The case studies were with two Australian organisations, based in Brisbane, which had current *BPM Initiatives*. The Researcher used a combination of interviews, surveys and a review of relevant documentation to explore the *BPM Initiatives* with key BPM personnel.

Analysis of case study data showed that there was a degree of overlap between

[39] Chapter 2 provides justification for the selection of the Delphi Technique for this phase of the study.

some factors of the *Initial Conceptual Model*, blurring the lines of independence and resulting in changes to the name of some factors. Furthermore, the intent and scope of a number of factors required additional clarification.

The *Accountability* factor expanded to become *Governance*, incorporating decision making and compliance aspects. The *Methodology* factor constricted to become *Methods* in order to separate decision-making from usage. The *Performance* factor expanded to become *Strategic Alignment*, integrating aspects previously captured within the *Alignment* perspective in addition to the original performance focus. The *Culture* factor split giving an additional factor called *People*, in order to recognise the less tangible aspects such attitudes and beliefs separately to the more tangible aspects such as training and skills. These changes led to a *Refined Conceptual Model*.

In addition to refining the conceptual model, the findings from the case studies provided direction to the study. The refinements and the requests for additional clarity resulted in the need to redefine the factors. Furthermore, plans for the future operationalisation of the model, terminology issues and a desire to increase generalisability resulted in plans to extend the *Refined Conceptual Model* by identifying measurement items within the factors from a wider audience.

Consequently, the following chapter details the series of Delphi Studies undertaken to extend the *Refined Conceptual Model.*

5 Delphi Studies

This chapter aims to extend the refined conceptual model by further defining the factors and identifying those items whose measurement is seen to be indicative of advancing maturity in the factor. The Delphi technique provides the ability to access geographically dispersed experts in a cost effective manner and the ability to break down comprehensive issues using an iterative approach. This makes it a suitable method for undertaking this exploratory research[40]. This chapter details the design, conduct and outcomes of a series of Delphi studies conducted from February to September 2005.

5.1 Chapter Overview

The structure of this chapter is as follows. Section 2 details the initial planning for the Delphi studies. This includes consideration of the questions, the planned approach including the number of studies, the number of rounds, determining and inviting experts, conducting a pilot study and revising the plan accordingly. Section 3 details the conduct of the Delphi studies including the collection and analysis of data. Section 4 provides details of the outcomes of the studies being the final factor definitions and the so-called capability areas identified during each study. Section 5 includes consideration of the consequences of the studies and the next steps. Section 6 summarises the chapter.

[40] Chapter 2 contains further details on the selection of the Delphi Technique for this purpose.

5.2 Delphi Study Plan

Following the selection of the Delphi technique, a number of decisions regarding the use of the technique were necessary. Powell (2003) indicated that the selection of the Expert Panel would potentially determine the success of a Delphi study. Furthermore, whilst the aim of a Delphi study is often to reach consensus Richard and Curran (2002) caution that there are times when consensus between panellists is not always possible. Hence, the design of the Delphi studies needs to first determine the questions to be addressed, before determining the most appropriate panel for addressing the questions and a control mechanism for progressing the study through the desired number of iterations. Figure 19 summarises the major steps the Researcher undertook in planning for the Delphi studies.

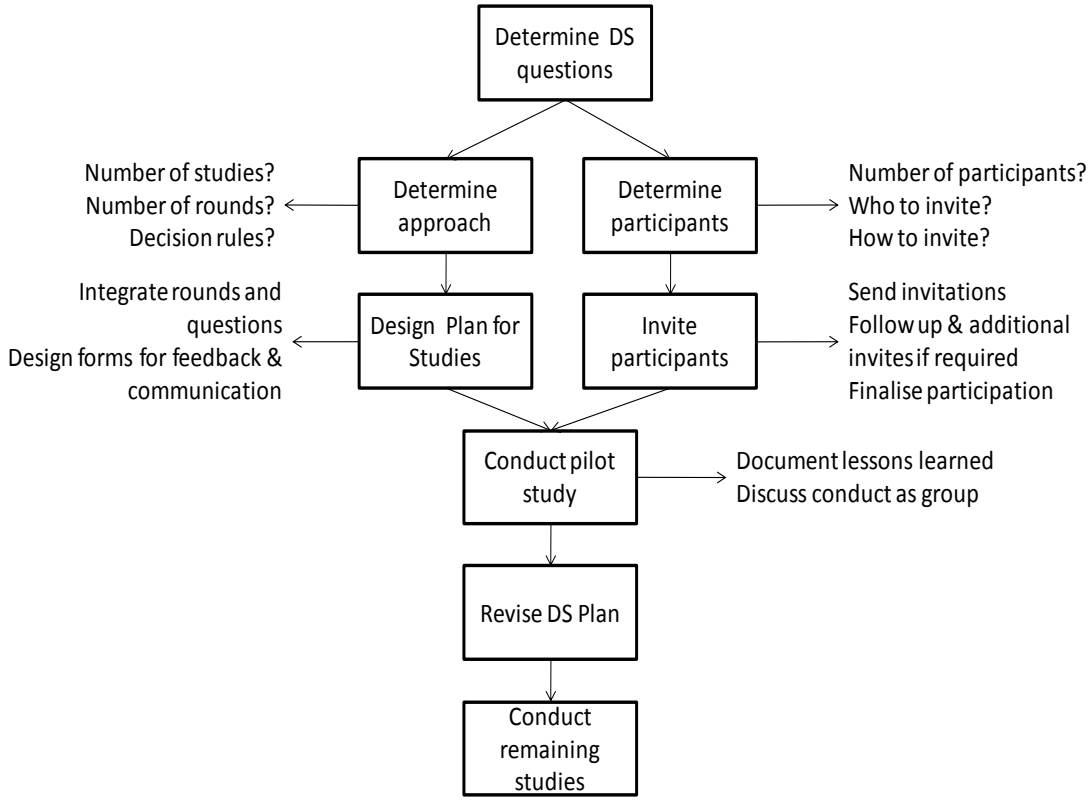


Figure 19: Planning for the Delphi Studies

5.2.1 Determine the Delphi Study Questions

Building on the outcomes of the earlier case studies, the aim of the Delphi studies was to (1) agree on a definition for each factor and (2) to identify key items that, when measured, indicated increasing maturity of the factor. With regard to the definitions, in the first round of the study the Researcher asked panellists:

> In the context of Business Process Management, how do you define factor *x*?
>
> List (up to) 5 terms that you believe are vital to any definition of factor *x* (in the context of Business Process Management). Please provide a brief explanation of these terms.

Similarly, with regard to identifying measurement items, the Researcher asked panellists to:

> List (up to) 7 major items within factor *x* that you would like to be able to assess by applying a new *BPM Maturity* measurement model[41].

5.2.2 Determine the Approach

To answer the proposed questions, the Researcher needed to design an approach to the study that would enable participation from a suitable panel and subsequently to compose the panel of experts. In reality, the Researcher made decisions on the approach in conjunction with decisions on the panellists, as the decisions were interrelated. This section details the approach to the studies. Consequently, this section includes (1) planning the conduct of the studies including the decision to conduct a pilot study and (2) determining an end-point for the studies.

[41] When looking to identify issues within an area, Schmidt (1997) recommends asking for at least 6. Whilst this study focuses on measurement items as opposed to issues, this provided a guide for the number of items to identify from panellists.

Planning the Conduct of Study

The Researcher considered two alternative approaches: (1) conducting a single study covering all factors or (2) conducting a series of studies looking at one factor at a time. In light of the independence of the factors, and a desire to match experts with each factor, the Researcher decided on the second of these options. This resulted in the conduct of a series of studies, with a separate study for each factor of the refined conceptual model (i.e. *Strategic Alignment, Governance, Methods, Information Technology, People* and *Culture*).

The Researcher had to determine how then to conduct the studies. The options were to conduct them consecutively, in parallel, or using a combination of these two approaches. Initially, the plan was to run the studies consecutively but to stagger the start dates so that there was some overlap in the studies in order to shorten the overall timeframe. A potential shortcoming of this approach was that, where experts participated in more than one study, response fatigue could lead to increased levels of discontinuity in later rounds and/or studies. Consequently, finding the best approach to the conduct and timing of the studies was important in order to minimise potential attrition rates.

A pilot study would assist the Researcher in streamlining the conduct of the studies but could add to the response fatigue. This was due to the difficulty in replicating the work commitments and experience of potential panellists without using the expert panel itself. Consequently, the Researcher decided to use one of the factor studies as the pilot study and selected the Strategic Alignment factor for this purpose.

Determining an End-Point for the Studies

Schmidt (1997) indicates that it is important to know when to stop a study. According to Schmidt, stop too soon and outcomes may not be meaningful, continue too long and it will waste the time of the panel and the Researcher's resources. Therefore, in designing a study it is necessary to consider what distinguishes the completion of the study. This means giving consideration to (1) what constitutes consensus, in the context of the study, and (2) what happens if the study does not reach consensus.

Modified Delphi studies that *rank* outcomes often use Kendall's *W* coefficient, whereby concordance above 0.7 indicates provides a satisfactory result (Brancheau & Wetherbe, 1987; Okoli & Pawlowski, 2004; Schmidt, 1997). In this study however, there was a focus on the development of definitions, which are less suited to application of a ranking-based assessment. To the best knowledge of the Researcher, there was little guidance in prior studies on what constitutes consensus, or measures that were useful in determining consensus, for modified Delphi studies that *rate* outcomes as opposed to the traditional *ranking* of outcomes.

Consequently, the Researcher established criteria for consensus within the study using similar principles to those applied within a ranking study. In doing so, the Researcher made use of *mean rating scores* and *standard deviation in responses*, and set benchmarks to guide the achievement of satisfactory levels. The approach included using a *satisfaction scale* and establishing a *minimum level for consensus*. The *satisfaction scale* included asking experts to rate their level of satisfaction with both the proposed definition and the capability areas in each round using a 10-point scale (1 – Not Satisfied and 10 – Very Satisfied).

The *minimum level for consensus* included:

- An average satisfaction rating of not less than 7.5
- Having minimal variance between responses (defined as attaining a standard deviation of 1.5 or less)
- All individual ratings being at least a 5.

In addition to the *minimum level for consensus*, the Researcher set a *maximum number of rounds* to govern the maximum duration of the studies. In doing so, the Researcher defined an end-point of the study (in the event that a study did not reach consensus). This enabled the Researcher to communicate to the panellists regarding their expected involvement. In doing so, the Researcher aimed to minimise attrition rates by giving surety to panellists in terms of their maximum commitment.

To determine the appropriate number of rounds for the proposed Delphi studies, there was consideration of both the aim of this study and the experiences of other similar studies. In a study into the optimal number of rounds, Erffmeyer et al. (1986) achieved stability after the fourth round. In more recent studies, Mulligan (2002), Powell (2003), and Richards and Curran (2002) considered three rounds were appropriate. Alternatively, Murphy et al. (1998) and van de Ven and Delbecq (1974) suggested two or more and Loo (2002), three to four.

Consequently, the Researcher decided to impose a maximum of four rounds for each study, in the event that the decision rules for consensus were not satisfied prior to that point.

5.2.3 Initial Plan for the Delphi Studies

Based on these decisions, the Researcher derived a plan for the conduct of the Delphi Study series. As shown in Table 39, the initial plan was for the studies to commence with the pilot study in February 2005 with completion of the last study by mid-November 2005.

Factor	Start	Finish
Strategic Alignment	21st February 2005	17th April 2005
Governance	4th April 2005	29th May 2005
Method	16th May 2005	10th July 2005
IT/IS	27th June 2005	28th August 2005
People	8th August 2005	2nd October 2005
Culture	19th September 2005	13th November 2005

Table 39: Initial Timeline for Conducting the Delphi Study Series

The Researcher developed a schedule for the tasks required in the study, and proposed times for the completion of these tasks. From this, the Researcher established a timeframe for each study allowing eight weeks for each study. Table 40 shows this timeframe, including the major tasks for each week.

Week	Action	Timeframe
1	Send email re participation. Confirm participation and collect demographic details.	W1, D1 (Week 1, Day 1 i.e. Monday)
2	Circulate Question 1 – In the context of BPM, how would you define Factor *X*?	W2, D1
3	Consolidate responses. Circulate proposed definition of Factor *X*	W3, D7
4	Further investigate and clarify variations. Reach consensus. Circulate final definition of Factor *X*	W4, D7
5	Circulate Question 2 – Within Factor *X* (as defined in Week 4), what do you consider to be the BPM Capability Areas critical for achieving *BPM Success*?	W5, D1
6	Consolidate responses. Circulate proposed *BPM* Capability Areas.	W6, D7
7	Further investigate and clarify variations. Reach consensus.	W7, D7
8	Circulate final *BPM* Capability Areas. Phone conference with group to advise results.	W8, D3 W8, D5

Table 40: Initial Outline for Conducting a Study

5.2.4 Determining Experts

In determining potential panellists, the Researcher considered (1) the number of experts (2) how to select experts and (3) how to invite experts.

Number of Experts

A consideration in selecting an expert panel is the number of experts required for the outcomes to be reliable. Dalkey (1969) provides clear guidance on this, stating:

> *"...with a panel no larger than fifteen, consisting of a cross section of experts in the given field, it is highly unlikely that another equally expert panel will produce a radically different median..."*

This statement stems from Dalkey's initial studies for the United States Air Force using between 11 and 30 experts to consider a number of almanac type questions. Dalkey (1969, 11-13) shows the interaction between the group size and error rates, and, the group size and reliability as seen in Figure 20.

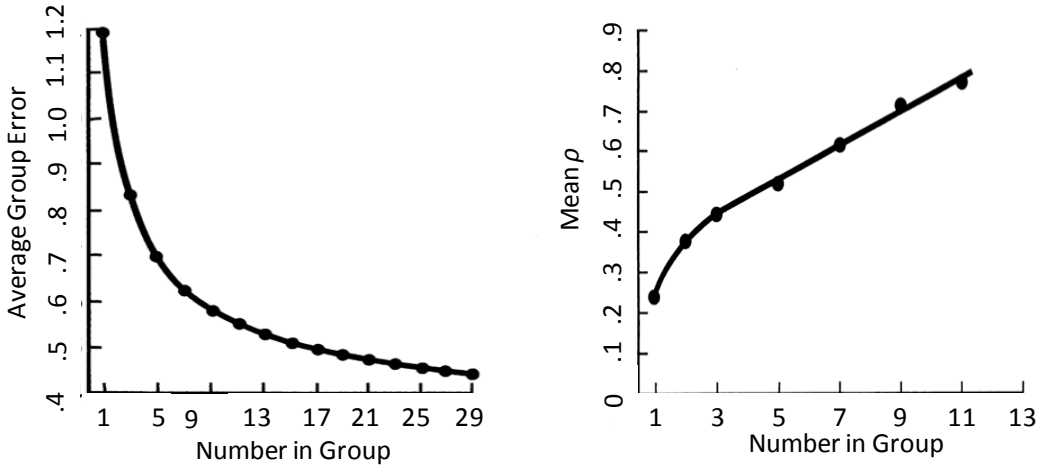


Figure 20: Delphi Group Size – Error and Reliability

These figures show that the average group error decreases significantly for studies with between 1 and 11 participants, reducing more than .6 from 1.2 to below .6. For studies with between 11 and 29 participants, the change is less reducing from below .6 to slightly above .4, a reduction of less than .2. The reliability of studies with 11 or more participants is .75.

In a study including two panels, one inter-firm and the other intra-firm, Preble (1984) started with 15 members in both groups with one reducing to 14 members and the other to 12. The highest non-completion rate of Preble's study was in the inter-firm panel with panellists indicating that time constraints from their own organisations affected participation. Okoli and Pawlowski (2004) also discuss non-completion and attrition, suggesting that levels within Delphi surveys are low comparative to traditional surveys. Furthermore, they recommend a group size of between 10 and 18 experts, based on extant literature. Consequently, the Researcher determined that the final group size should be between 10 and 18 experts, with additional participants invited to allow for attrition.

How to Invite Experts

To determine how to invite experts, the Researcher used an approach similar to the iterative 5-step approach proposed by Okoli and Pawlowski (2004) including:

1. Preparing a worksheet that identifies potential classifications
2. Populating the worksheet with potential experts
3. Evaluating experts
4. Inviting experts
5. Nominating additional experts (using referrals from invited experts and further investigation).

Classification of Experts

In considering the outcomes across two different panels addressing similar questions, Martino (1972) concluded that there was consistency in outcomes across the panels. Preble (1984) provides empirical support for Martino's findings showing in his study consistency between inter-firm and intra-firm panels whereby the two panels chose the same or the next closest category in 95 out of 96 comparisons. This indicates that there may be no significant value in having separate panels for different groups of experts (e.g. industry and academia or different regions). The inclusion of experts with a range of experiences will increase the generalisability of the outcomes from the studies.

Consequently, in determining a list of potential panellists, the Researcher considered an individual's *category, region, and expertise* (in a given factor). Classification by *category* enabled representation of views from both theoretical and practical perspectives by including experts based on *academia* and *industry*. Classification by *region* allowed for consideration of regional differences, whilst classification by *expertise,* enabled matching of experts with the six factors contained in the model.

What denotes an expert is arguably subjective, thus the Researcher set minimum criteria to apply to the selection of experts in these studies. Academic experts were required to have a minimum of a PhD qualification or Professorial position

and be active in BPM research and/or teaching. Industry experts were required to hold a senior position, with a key role in the *BPM Initiative* in their organisation or be a recognised figure in the BPM community (e.g. an author of BPM literature). In determining potential panellists, the Researcher considered an individual's expertise; however, the Researcher also asked each panellist to nominate the studies in which they were comfortable participating. A perceived benefit of self-nomination was that it would increase motivation and commitment to the studies, thereby assisting in minimising attrition rates.

5.2.5 Inviting Potential Participants

In January 2005, 30 potential experts and 2 coders received an email inviting their participation in the studies[42]. This initial email included a proposal for the Delphi study series that contained (1) a proposed outline of the study, (2) a request for participation, (3) a form for self-nomination for individual studies and (4) a request for notification of other individuals who might be suitable for participating in the studies[43]. A copy of the email and proposal are in:

Appendix 13.2.1 – Email Invitation Sent to Prospective Participants

Appendix 13.2.2 – Proposal Sent to Prospective Participants.

The self-nominating approach resulted in a number of experts electing to participate in all six studies whilst others elected to participate in select studies. Consequently, there was a common core of experts participating in all studies, supplemented by *new* experts entering each study. The common core of experts provided a level of continuity and consistency across the studies, whilst experts participating in only select studies ensured a degree of independence between factors and in the input to each factor.

Table 41 shows the distribution of experts across the three classifications of Category (I = Industry; A = Academia), Region and (Factor) Expertise. As seen, there was a predominance of experts from western regions leading to a potential

[42] There were 3 coders for the study with one being the Researcher.

[43] This process led to the invitation of an additional 4 experts.

bias in the data. Forza (2002) indicates however that in exploratory surveys it is necessary to have participants that are *representative of the unit of analysis* but that the *representativeness of the sample* is not a criterion[44].

	Strategic Alignment		Governance		Methods		Information Technology		People		Culture	
Category / Region	I	A	I	A	I	A	I	A	I	A	I	A
USA	8	6	10	6	10	5	9	4	9	5	8	5
Australasia	2	1	2	2	2	2	2	1	2	1	2	1
Europe	1	-	1	-	1	1	1	1	1	-	1	-
Total	***11***	***7***	***13***	***8***	***13***	***8***	***12***	***6***	***12***	***6***	***11***	***6***

Table 41: Invited Participants per Factor

All participants received an e-mail confirming their details and providing further details of the timing of the study. A sample of this email is in:

Appendix 13.2.3 – Confirmation Email Sent to Participants.

5.2.6 Conducting the Pilot Study

Following the completion of the design of the studies and the selection of the expert panel, the Researcher commenced the initial pilot study (i.e. the *Strategic Alignment* study) in February 2005. At the completion of the pilot study in March 2005, the Researcher held a telephone conference with all participants of the study to elicit feedback regarding the process and timeframes for the remaining studies. Feedback from this meeting led to modifications in the conduct of the

[44] It is important to note, the invitation to participate in the study based on region was not *representative* of the state of BPM practices within the region. Rather, the aim was to have at least one expert for each category (e.g. academia or industry) from a number of different regions. A potential shortcoming of the study lies in both the distribution of the experts between the regions, and the actual regions selected. Evidence from earlier researchers (Gulledge and Sommer, 2002 and Pritchard and Armistead, 1999) had shown no significant difference between BPM practices across regions and industries however. Thus, the Researcher determined that the benefit of accessing contemporary thought-leaders in the domain compensates to some extent for the potential impact of such bias at this early stage of the research.

remaining studies. The outcomes and other sample documentation from conducting the pilot study is in:

Appendix 13.2.4 – Report to Panel Following Pilot

Appendix 13.2.5 – Diary Note: Pilot Study.

5.2.7 Revising the Plan

One change to the plan for the remaining studies was the shortening of the overall timeframe and the decision to run a number of studies in parallel[45]. This change occurred primarily due to feedback from the panellists who indicated there was a greater likelihood they would discontinue if the studies went too long.

Another change was to introduce the 'item' question in the first round rather than delaying it to a subsequent round[46]. This change occurred due to the number of iterations it took to reach required levels of consensus within the Strategic Alignment study. Had the change not occurred, it was likely that an additional round would have been necessary for the studies in order to reach consensus, or that the Researcher would have imposed the maximum number of rounds, potentially weakening the overall results (Schmidt, 1997).

A further modification related to the data analysis and outcomes. When conducting the Strategic Alignment study the initial short-list of capability areas included seven items. During the last round of the study, the Researcher asked panellists to rate the list of capability areas with regard to their *perceived importance* by allocating a total of 10 points between all items. Two of the capability areas received a rating of zero from more than 30% of the expert panel. This resulted in the average *perceived importance* score for the two areas being notably less than the other five capability areas. Table 42 details these outcomes, showing the two areas at the bottom of the table.

[45] Initially the studies were scheduled to run sequentially so as not to over-burden experts.

[46] Initially the question was in the second round so that the list of items provided was in keeping with the first round consolidated definition. The use of ratings in each round aimed to minimise any potential negative effects of concurrent development.

Capability area	Average Perceived Importance	Standard Deviation	Highest Score	Number of 0's Scored
Process Improvement Plan	1.77	0.83	4	0
Strategy and Process Capability Linkage	1.77	1.17	4	2
Enterprise Process Architecture	1.69	1.03	4	2
Process Measures	1.46	0.97	3	3
Process Customers and Stakeholders	1.30	1.18	4	3
Strategic Priorities	1.08	0.86	2	4
Operational Translation	0.92	0.86	2	4

Table 42: Capability Area Ratings from Pilot Study

In the telephone conference held at the completion of the pilot study, panellists confirmed that the two areas (i.e. Strategic Priorities and Operational Translation) contained a level of redundancy and overlap with the remaining five capability areas. Furthermore, there was agreement within the group that the removal of the two areas would not diminish the comprehensiveness of the final list. Consequently, the Researcher removed the two areas from the final list. To maintain the chain of evidence in the data, the Researcher mapped all items from these two areas to the remaining five areas. Panellists were able to review this mapping in the final report for the studies.

Following input from the telephone conference, the Researcher considered restricting the final list of capability areas in the remaining studies to a maximum of five items. Ahrens and Dent (1998) caution that there is a possibility that making such a decision will limit the study outcomes, however, Whetten (1989) cautions against the inclusion of factors found to add little value. Consequently, the Researcher decided to limit future lists to no more than five items. There was support for this decision with no *zero* ratings in future studies and a significant reduction in the deviation of the *perceived importance* ratings within each study.

Figure 21 shows the revised plan following the conduct of the pilot study.

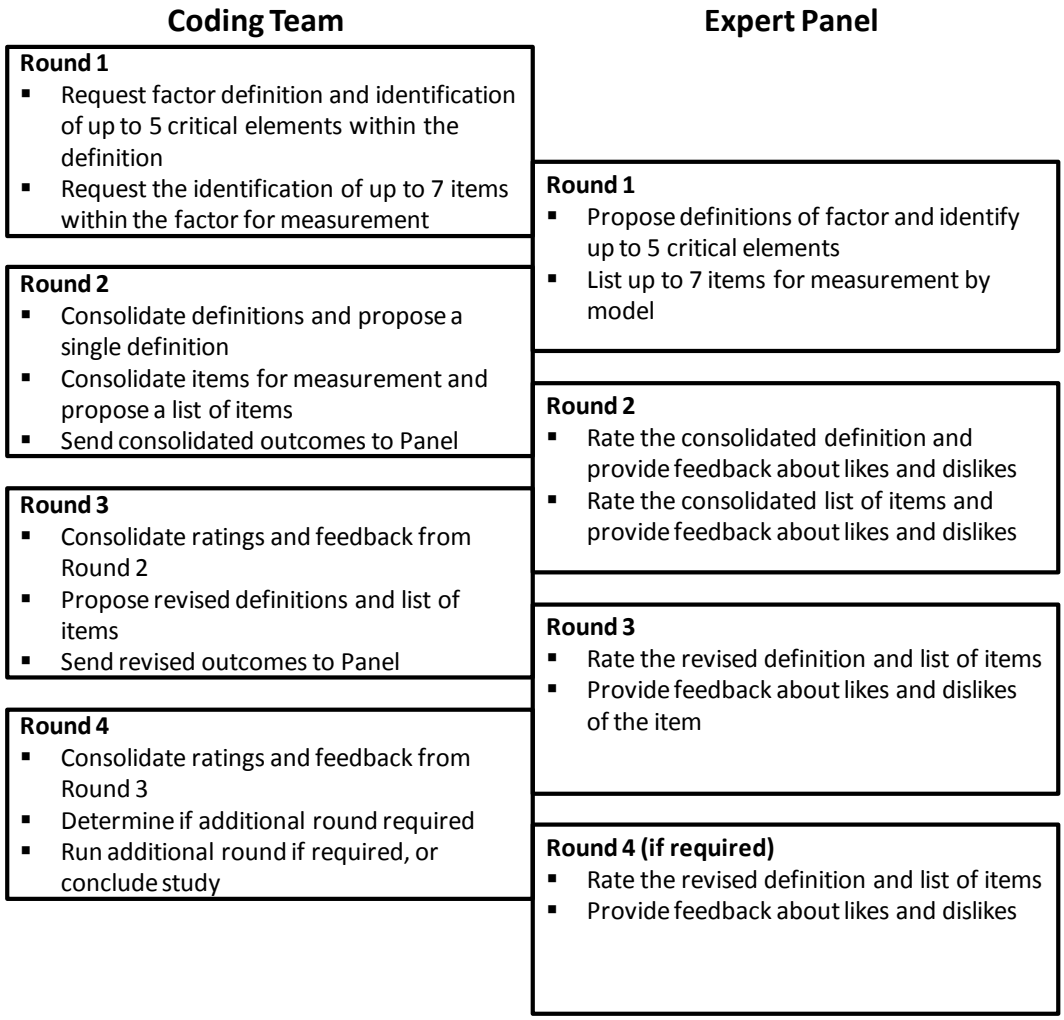


Figure 21: Revised Delphi Study Plan

5.3 Conducting the Delphi Studies

The remaining five studies for *Governance*, *Methods*, *Information Technology*, *People* and *Culture* occurred from March to June 2005, with the final reports issued to panellists in September 2005. These studies followed the revised plan shown in Figure 21. The revised scheduling of these studies is in:

Appendix 13.2.6 – Delphi Study Structure Following Pilot Study.

All studies reached the minimum level of consensus within four rounds. The *Governance*, *People* and *Culture* studies had three rounds whilst the *Strategic*

Alignment, *Methods* and *IT* studies required four rounds to reach required levels of consensus. The results of the six studies (including the pilot) are summarised in Section 5.4, whilst the next sections detail the data collection and analysis process that led to these outcomes.

5.3.1 Data Collection

In an attempt to maintain high response rates, the Researcher provided panellists with two avenues for providing feedback during each round. On the one hand, details were summarised in an email to which panel members could simply insert their feedback and return. The Researcher also attached a more comprehensive document to the email, for those interested in additional detail. This document (referred to as a *Round Report*) included additional commentary and supporting evidence detailing how the coding team arrived at the proposed definitions and capability areas. The report included a number of highlighted areas where the panel member could insert their answer before returning the completed report. This provided a strong chain of evidence between the data provided by the expert panel and the subsequent proposals provided by the coding team, thus increasing the transparency of the coding and data reduction process. Samples of the emails sent to experts are in:

Appendix 13.2.7 – Email to Panel Member for Round

Appendix 13.2.8 – Follow-up Emails Sent to Participants.

Maintaining Anonymity

According to Murphy et al. (1998), a recognised strength of the Delphi Technique is the ability to minimise the impact of dominant personalities and group pressure by enabling anonymity and equal weighting of participants. Furthermore, van de Ven and Delbecq (1974) suggest that anonymity adds richness to data and results in more creative outcomes. The Researcher ensured anonymity throughout the series by only referencing panellists using an allocated number and not their name; personalizing emails; and coordinating questions between the coding team and the panellists through a central point (i.e. the Researcher). Details of all experts who participated were included however, in both the

Executive Summary and the *Series Summary.* The Researcher provided these reports to all participants for comment and sign-off at the completion of the series to increase the credibility of results. At no time during the studies were direct connections made between panellists and specific data.

5.3.2 Data Analysis

The Delphi studies generated a combination of qualitative and quantitative data. The qualitative data provided a rich source from which to identify common themes and concepts. The quantitative data meanwhile, provided a means of determining an appropriate end-point using pre-defined guidelines for acceptable levels of outcomes. The Researcher's aim during all studies was to maintain maximum transparency of data analysis to ensure quality outcomes in a timely manner. Consequently, the Researcher developed and refined a standard process for managing each round of the Delphi studies, as detailed in the following paragraphs.

Following the distribution of the initial questions, the Researcher received all responses for each round. The Researcher collated all responses (including any ratings and comments) into a MS-Excel spreadsheet, removing all personal details of participants and replacing them with the unique identification tag assigned to the participant. The Researcher then sent the spreadsheet of the summarised, anonymous responses to the remaining members of the Coding Team for analysis. A sample of the summarised responses is in:

Appendix 13.2.9 – Summary of Responses from Delphi Study Round.

The Coding Team had access to N-Vivo to assist in data analysis. It was not mandatory that they use this (or any other) software however. As all members of the Coding Team were familiar with qualitative data analysis techniques, they were able to use their own preferred means of analysis. Due to the small number of participants and the non-voluminous data, the Researcher used a combination of simple, manual methods such as highlighting and underlying key words, identifying categories, mapping items to categories, and using a word processing package. During the coding process, members of the Coding Team were able to ask for further clarification from members of the Expert Panel if necessary. In

this case, all communication was co-ordinated by the Researcher to maintain the anonymity of the Expert Panel. At the end of coding, Coding Team members sent their input to the Researcher in time for a regular meeting. A sample of coding from a round of the study is in:

Appendix 13.2.10 – Coding From Delphi Study Round.

The Researcher consolidated and circulated the combined results of coding to the Coding Team prior to the meeting. The team then met (virtually) to discuss and agree on the definition and items to propose back to the Expert Panel. During the consolidation process, there was a rule that within the coding team at least two of the team had to agree on the proposal before returning results to the panel. Once the Coding Team was in sufficient agreement, the Researcher prepared a standard Round Report for circulation back to the panel.

In the Round Report, the panellists received (1) the previous proposed definition and list of capability areas; (2) a summary of comments and ratings arising from the prior round; (3) a revised definition and list of capability areas based on feedback received during the prior round; and (4) a full mapping of all items to the proposed capability areas. A sample of a Round Report is in:

Appendix 13.2.11 – Round Report to Panel: Completed by Expert.

The panellists rated and commented on the proposed definitions and list of capability areas including the associated mapping before returning their responses to the Researcher[47]. The Coding Team then used the ratings and comments to improve the definition, the list of items and the associated mapping that supported them. Subsequent rounds of the Delphi study followed a similar pattern with the aim of increasing the average satisfaction, whilst reducing the standard deviation, of panellist ratings. Rating and comment by the panellists continued until the study met the minimum level of consensus, or the maximum number of rounds.

[47] Documentation of the item mapping provides a basis for further development of each capability area. In later stages of the research, this mapping combines with a targeted literature review to establish support for each capability area and to guide the future operationalisation of the model.

5.4 Delphi Study Outcomes

This section presents a consolidation of the outcomes from all six Delphi studies. Further details on each study, including the discussion of major themes, specific comments from the expert panel and progression in each of the round, including Final Report summaries are in Appendices:

13.2.12 - Strategic Alignment Delphi Study

13.2.13 - Governance Delphi Study

13.2.14 - Methods Delphi Study

13.2.15 - Information Technology Delphi Study

13.2.16 - People Delphi Study

13.2.17 - Culture Delphi Study

13.2.18 Final Executive Summary: Table of Contents

13.2.19 Final Series Summary: Table of Contents & Appendix.

5.4.1 Participation

Participation in the Delphi studies including completion rates is in Table 43. The final figures do not include Panellists that did not complete all rounds, although their input has been included for the rounds in which they did participate.

	Industry			Academia			Total		
	Invited	Completed		Invited	Completed		Invited	Completed	
Strategic Alignment	11	9	82%	7	6	86%	18	15	83%
Governance	13	6	46%	8	5	63%	21	11	52%
Methods	13	6	46%	8	6	75%	21	12	57%
Information Technology	12	6	50%	6	5	83%	18	11	61%
People	12	8	67%	6	6	100%	18	14	78%
Culture	11	6	55%	6	5	83%	17	11	65%

Table 43: Expert Panel - Invited and Completed

5.4.2 Definitions

The final definitions for the six factors derived from the Delphi studies were:

In the context of BPM:

> ***Strategic Alignment*** *is the continual tight linkage of organisational priorities and enterprise processes enabling achievement of business goals.*
>
> ***Governance*** *establishes relevant and transparent accountability and decision-making processes to guide and reward actions.*
>
> ***Methods*** *are the approaches and techniques that support and enable consistent process actions and outcomes.*
>
> ***Information Technology*** *is the software, hardware and information management systems that enable and support process activities.*
>
> ***People*** *are the individuals and groups who continually enhance and apply their process-related expertise and knowledge.*
>
> ***Culture*** *is the collective values and beliefs that shape process-related attitudes and behaviours.*

Figure 22 shows the high level of average satisfaction with the final definitions, with all factors having an average score greater than eight (with 10 being very satisfied). The standard deviation in responses is low, being below 1.2 for all final factor definitions. Furthermore, across all studies, there was no response (in the final round) below a five[48].

[48] The Final Report for each study (see Appendix) provides details of the changes in the average scores and the changes in the standard deviation for each round.

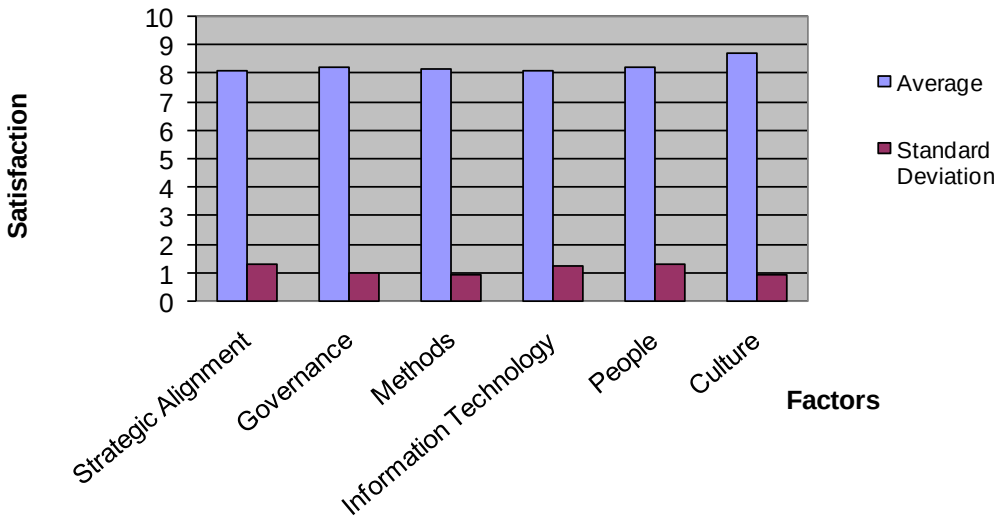


Figure 22: Final Satisfaction Ratings for Definitions

5.4.3 Capability Areas

The Researcher and the Coding Team used a data reduction process in the derivation of the final lists of capability areas, maintaining a chain of evidence to the original proposed items by mapping each item to a particular capability area[49]. Full details of the mappings are in:

Appendix 13.2.20 – Mapping of Original Items to Capability Areas.

Figure 23 shows the high levels of average satisfaction (with 10 being very satisfied) and low standard deviation the Expert Panel had with the final lists of capability areas. The Expert Panel did not rate the final list of items for *Strategic Alignment* because the decision to rate the final list arose following the pilot study. For the remaining five studies, four achieved an average satisfaction rating greater than eight, whilst the *People* factor received 7.8. The standard deviation was less than 1.2 for all five remaining studies. Figure 24 shows the final capability areas for each factor[50].

[49] This mapping will contribute to the future operationalisation of the model.

[50] The Researcher does not intend for the diagram to suggest that the order of the capability areas is hierarchical. For Factors of Strategic Alignment, Governance, People and Culture ordering of the areas in this diagram is in line with the descending level of "perceived importance". For Methods and Information Technology, the order of the first four capability areas is consistent with the process lifecycle.

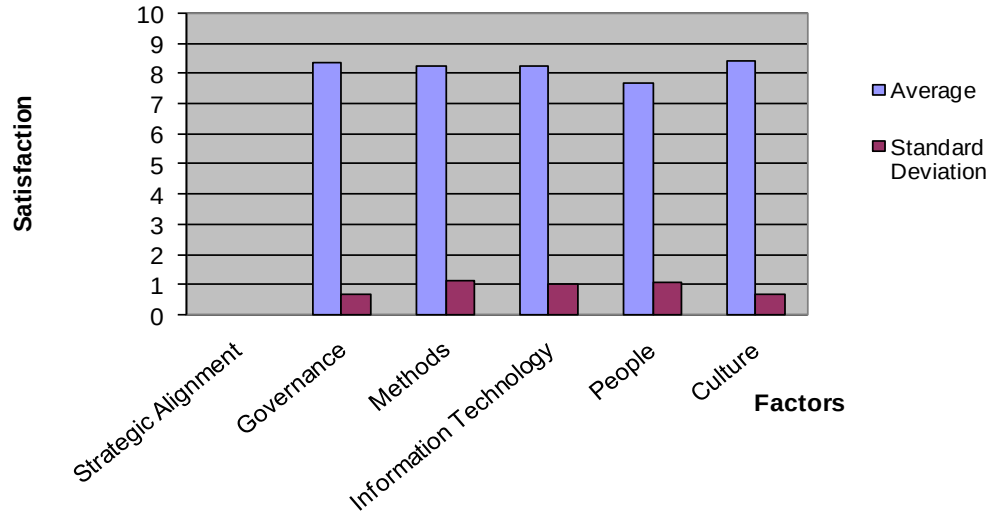


Figure 23: Rating of the Final List of Items for each Factor

Strategic Alignment	Governance	Methods	Information Technology	People	Culture
Process Improvement Planning	Process Management Decision Making	Process Design & Modeling	Process Design & Modeling	Process Skills & Expertise	Responsiveness to Process Change
Strategy & Process Capability Linkage	Process Roles & Responsibilities	Process Implementation & Execution	Process Implementation & Execution	Process Management Knowledge	Process Values & Beliefs
Enterprise Process Architecture	Process Metrics & Performance Linkage	Process Monitoring & Control	Process Monitoring & Control	Process Education & Learning	Process Attitudes & Behaviors
Process Measures	Process Related Standards	Process Improvement & Innovation	Process Improvement & Innovation	Process Collaboration & Communication	Leadership Attention to Process
Process Customers & Stakeholders	Process Based Compliance	Process Program & Project Management	Process Program & Project Management	Process Management Leaders	Process Management Social Networks

Factors

Capability Areas

Figure 24: BPM Capability Framework

5.5 Discussion and Next Steps

Despite comprehensive efforts in the design and conduct of the Delphi studies, there are still inherent limitations in the outcomes that affect the direction of the overall study.

Firstly, whilst defining the factors, the Delphi studies have not provided clear definitions and an in-depth understanding of the capability areas: they merely led to their identification. Whilst mapping the original data items during each round provides a starting point, further work is required to define and articulate the intent of each capability areas.

Secondly, whilst the Delphi studies identified the capability areas as a means of measuring the factors, in their current form, the capability areas are not, in themselves, measures. Therefore, although the identification of measurement items for the factors was one of the original intentions of the Delphi study series, the extent of the capability area mapping indicates that the identified items represent sub-constructs rather than measurement items. Consequently, further research on the measures is required before it is possible to operationalise the *Extended conceptual Model*.

Thirdly, whilst the Delphi studies identified the capability areas, it did not provide insights into potential relationships between them. Therefore, additional work is required to understand more about potential relationships between the capability areas, and to guide the proposal of a measurement model.

To address these issues, the Researcher used a combination of literature review and exploratory case study and literature review. The aim of the literature review was to develop a framework for exploring the areas within a practical environment. The literature review was fundamental to the design of the case study data collection instruments. In selecting the case study method, the Researcher aimed to gain a deeper understanding of the capability areas and their role in the progression of BPM within a contemporary setting[51].

[51] Chapter 2 provides details on the selection of the case study method for this phase.

5.6 Chapter Summary

This chapter included details of the design, conduct and outcomes of a series of Delphi studies undertaken to extend the *Refined Conceptual Model*.

First, there were details of the overall plan for the Delphi series, the conduct of the pilot study (i.e. into *Strategic Alignment*) and a discussion of how this study led to changes in the conduct of the remaining five studies.

The next sections detailed the conduct of the five remaining studies, concluding with a summary of the outcomes from all six studies. The outcomes of the Delphi studies included the *BPM Capability Framework* (i.e. the *Extended Conceptual Model*) and definitions for each of the six factors being *Strategic Alignment, Governance, Methods, Information Technology, People* and *Culture*.

The chapter concluded with contemplation of the steps required to progress the study, based on the Delphi study outcomes.

Consequently, the next chapter details the design and conduct of an exploratory case study that aims to (1) deepen the understanding of the newly identified capability areas and (2) further explore the progression of a *BPM Initiative* using the *BPM Capability Framework* as a base.

6 Exploratory Case Study

This chapter details a ***single, exploratory case study*** conducted with Company M in 2006[52]. The aim of this case study was to gain deeper insights into the progression of *BPM Initiatives* and to test the extended conceptual model within a practical setting. This chapter focuses primarily on presenting the outcomes relating to the first aim of the case study, providing insights into the progression of the *BPM Initiative*. A summary of the application of the *Extended Conceptual Model* is also included, with additional details available in Appendix:

13.3.1 – Testing the Extended Conceptual Model[53].

6.1 Chapter Overview

The structure of this chapter is as follows. Section 2 details the case study design including the unit of analysis, case selection and the data collection

[52] The removal of the company name is to protect the identity of the participating organisation. The Researcher used the name – Company M – in preference to the next sequential naming of Company C to reinforce the segregation of the three case study applications and their distinct purposes within the study.

[53] The outcomes relating to the second aim of the study, testing the extended conceptual model, are important to the development and testing of a measurement model in subsequent future studies, but secondary to the theory building focus of this thesis. Consequently, Appendix 13.3.1 provides in-depth details and support for the summary of outcomes provided in this Chapter.

instruments. Section 3 details the data collection including the participation and approach. Section 4 provides details of the progression of the *BPM Initiative*, including key projects and their drivers. Section 5 presents a summary of the application of the extended conceptual model. Section 6 consolidates the key outcomes from the study, discusses the implications for the study and details the next steps. Section 7 concludes with a summary of the chapter.

6.2 Case Study Design

Defining the unit of analysis, selecting the case and planning for the data collection is critical to the success of the case study as it directly affects the data and subsequent outcomes.

6.2.1 Unit of Analysis

The unit of analysis in this study was the *BPM Initiative* within the selected *case*. As an aim of the study was to understand the progression of the initiative, consideration of the *case* in which that *BPM Initiative* occurs was also important. A case could be an entire conglomerate with multiple independent companies, a stand-alone company, a subsidiary company, or individual divisions or business units within one of these. The *case* was important as it establishes the boundaries of the study and the generalisability of subsequent theory.

6.2.2 Case Selection

A number of elements contributed to the selection of an appropriate company for this single exploratory study. These relate to the company and the *BPM Initiative* and included:

- An active and prime facie advanced *BPM Initiative* that aims at adopting BPM as a management approach
- Global connections to gain deeper insights into the implications of regional or geographic differences
- A culture that was prime facie open and communicative
- Willing to commit the time, energy and resources required for an in-depth research project

- Accessible to the Researcher.

The Researcher had knowledge of the *BPM Initiatives* in a number of national and international companies through participation in the Australian BPM Roundtable. Selection of Company M occurred following the consideration of five of these companies against the above criteria. Company M agreed to participate in the research after an invitation to do so. The Researcher provided Company M with an outline of the project and ethical requirements using the form in:

Appendix 13.3.2 – Information Sheet and Informed Consent.

Company M was an international integrated, mining organisation with its Head Office in Brisbane, Australia. In addition to Head Office, Company M's structure included a number of operational sites as shown in Figure 25. At the time of the study, Company M was a wholly owned subsidiary of Company P and employed approximately 4,500 employees.

Figure 25: Company M Sites

6.2.3 Data Collection Instruments

As indicated in Chapter 2, the use of multiple assessment instruments and the collection of data from multiple levels of the organisation contribute to the validity of data collection. The Researcher used a combination of interviews, workshops,

surveys and a review of relevant documentation as the primary data collection instruments.

One-on-one interviews were conducted with executives and senior management who held (or had held) a recognised process-based role within the company. The Researcher used an ***Interview Guide*** to maintain consistency between interviews.

The *Interview Guide* contained two sections including: (1) a brief description of the interview purposes and ethical requirements; and (2) questions relating to each of the factors contained within the *Extended Conceptual Model*. Questions in the second section were semi-structured and arose from a review of extant literature. To capture the unique experiences and views of interviewees, the Researcher asked participants to provide *their view* of the *BPM Initiative*. A sample of the form is included in:

Appendix 13.3.3 – Interview Guide.

Workshops captured detailed information regarding the *BPM Initiative* within Company M. There was a separate workshop for each factor contained within the *Extended Conceptual Model*. A ***Workshop Guide*** assisted with the collection of data.

The *Workshop Guide* included three sections. Section 1 provided a summary of the intent of the workshop, including the ethical requirements relating to the study. Section 2 provided the agenda for the workshop. Section 3 contained questions relating to the capability areas for each of the factors, contained in the *Extended Conceptual Model*. The questions in Section 3 were semi-structured and open-ended. The questions derived from an extant review of literature and the mapping from the Delphi studies. In each workshop, questions focused on the practices within each capability area. An example of the *Workshop Guide* for *Strategic Alignment* is included in:

Appendix 13.3.4 – Workshop Guide: Strategic Alignment.

Surveys captured additional data from all participants to support the qualitative data gathered during the interviews and workshops. The Researcher used two different surveys to capture data during the case study – a so-called *Background Survey* and the latest version of the *Maturity Survey*.

The embedded ***Background Survey*** included two sections (1) demographics and (2) questions about the *BPM Initiative* within the organisation, including the drivers, benefits, lessons learned and key projects undertaken. Examples of the *Background Survey* are in:

Appendix 13.3.5 – Background Survey

Appendix 13.3.6 – Background Survey: Governance Participants.

The ***Maturity Surveys*** represented the latest version of the operationalised model[54]. Before conducting the exploratory case study, the Researcher revisited the *Maturity Surveys* trialled in the earlier studies to refine the questions and format of the survey. To do this, the Researcher conducted a targeted literature review using the capability area mapping from the Delphi studies to identify major concepts, insights gained from piloting earlier versions of the surveys to formulate the questions and the framework developed in Chapter 3[55].

During this case study, the aim in applying the *Maturity Surveys* was twofold. **First,** calculating a *maturity score* enabled the Researcher to quantify the data collected with the survey. In doing so, the Researcher was able to compare the quantitative maturity scores with the qualitative data gathered during the workshops and interviews. Consequently questions within the *Maturity Survey* were assessed using a 5-point scale with 1 representing low maturity and 5, high maturity.

In calculating *maturity scores* the Researcher used a bottom-up approach calculating scores at the lowest level first and then rolling these up to provide

[54] There was a separate survey for each of the factors within the conceptual model.

[55] For example, Pritchard and Armistead (1999) indicated 10 lessons learned that map to various capability areas, whereas validated questions from IT and Corporate Governance may be applicable to some areas of BPM Governance.

scores at the higher level. This meant that the scores for *proficiency* and *coverage* combined to give a score for each capability area and that the scores for the five capability areas combined to give a score for the factor, as seen in Figure 26.

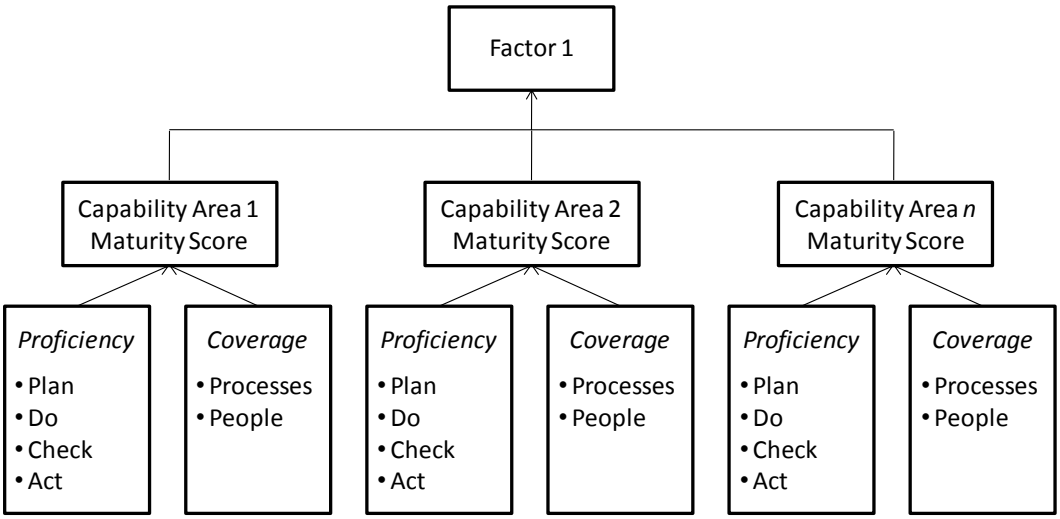


Figure 26: Calculation of Maturity Scores

Proficiency considered practices adopted compared to exemplary practice, whereas *coverage* captured the scope of practices as evidenced by the classes of *individuals* and *processes* to which the company applied them. This additional granularity removed the potential for losing insights and context from only viewing a single rolled-up figure for each factor. Equal weighting was applied to the measures of *proficiency* and *coverage* and to all capability areas and factors as there was no clear evidence from existing research that any one was more or less significant than the other[56]. Table 44 shows a sample of subsequent questions for the capability area: *Methods – Process Design and Modelling*.

[56] The Researcher recognises that this may not always be the case, but further research is required in this area before a weighted approach is justified.

	Methods – Process Design and Modelling
Maturity (Proficiency)	The intended purpose of the process design or model is clearly established and scoped. Process designs and models are developed from a base such as a pre-defined reference model or similar. Process designs and models are assessed against the expectations of stakeholders. Process designs and models are assessed against approved modelling conventions.
Scale	*1 Rarely, 2 Occasionally, 3 Neutral, 4 More Often than Not, 5 Almost Always (options of N/A and Unknown also provided)*
Maturity (Coverage)	Approved methods are routinely used when modelling which groups of processes? Which groups use approved methods for designing and modelling processes?
Scale	*Pre-defined groups of processes and people (see Appendix 13.3.7 for further details)*

Table 44: Sample Maturity Survey Questions

The survey was available on-line using a standard internet connection. The Researcher provided each user with a unique login and password. Company M provided access to computers with internet connectivity in a training room adjoining the room in which the workshop occurred. A sample of screen shots from the survey is in:

Appendix 13.3.8 – Maturity Survey: Sample Screen Shots.

To assist participants with access and completion of the survey the Research developed instructions, a copy of which is in:

Appendix 13.3.9 – Instructions for Maturity Survey.

Additionally, a range of ***documents were reviewed*** including presentations, newsletters, process models, process architecture, strategic planning documents, project documentation, summaries of Six Sigma projects, and corporate vision and mission statements[57].

[57] The Researcher has removed company identification and other sensitive details from figures and no direct references to the source documents is included in this thesis in accordance with a Non-disclosure Agreement.

6.3 Data Collection

The case study with Company M occurred from February to December of 2006. Following the agreement to participate, the Researcher met with the Key Contact, who was the CIO of Company M, to plan the conduct of the study. The Researcher briefed the Key Contact on the aims of the study in order to enable the selection of the most appropriate individuals for participation in the study. As the intent was to gain insights into the progression of the *BPM Initiative*, it was important to the Researcher that participants be knowledgeable about the history of the *BPM Initiative* within the company. Furthermore, to explore the capability areas of the *Extended Conceptual Model* in a practical setting, it was important that participants be experienced with the development of capability within the *BPM Initiative*.

The Key Contact invited individuals to participate in the study via email. This email included a copy of the documentation the Researcher had previously provided to the company. Individuals were not obliged to accept this invitation although all those invited did agree to participate. With the permission of Company M and each individual participant, the Researcher recorded all interviews and workshops and subsequently transcribed them for data analysis.

The Researcher conducted interviews with key executives and senior management to capture their views on the progression of the *BPM Initiative*. This included interviews with the seven Process Custodians[58]. The Key Contact scheduled all interviews and personally introduced the Researcher to each participant at the commencement of each interview. The Key Contact was not present during the conduct of the interviews. Each interview occurred in the participant's office. In total seven interviews were conducted ranging in duration from just under 2 hours to almost 3 hours.

The Key Contact selected participants for the workshops based on their knowledge of the factor under discussion and their understanding of practices in

[58] Company M used the term Process Custodian to denote the executive or senior manager with accountability for each of Company M's seven core processes.

the company relevant to the *BPM Initiative*. In total 18 people participated in the workshops. Most participants attended a single workshop, however two participants attended two workshops and one participant attended three. Participants in the workshops were key BPM personnel including Six Sigma Black Belts, Subject Matter Experts, Process Improvement Managers and the CIO. The workshops occurred in a designated conference room on Company M premises. In total, the Researcher conducted six workshops, each lasting approximately 4 hours and containing 3 or 4 participants.

Of the 18 workshop participants, 15 completed the *Maturity Survey* for the relevant factor, with 13 completing the surveys immediately following the workshops[59]. Two participants completed the survey in the following week, due to work commitments and three participants did not complete any surveys due to conflicting work commitments. No participants saw or completed the survey prior to the workshop, thus the survey questions did not influence the direction or content raised during the workshops.

Furthermore, all interview and workshop participants completed the *Background Survey* either at the end of their interview or at the beginning of the workshop. Completion took between 15 and 20 minutes. During the workshop, a Research Assistant collated the survey responses from all participants into a single document. At the end of the workshop, the Researcher and the participants reviewed the combined responses to discuss any differences and to verify completeness.

Table 45 summarises the participation based on the data collection instruments applied whilst Table 46 provides details of the participants.

[59] This means that 3 – 5 participants completed each survey, not that all 18 participants completed every survey. This presents a potential limitation for the data collected, as only people considered knowledgeable about the subject matter complete each survey. However, as the purpose of the study is to gain insights from such knowledge, the Researcher considered the use of a small number of highly knowledgeable participants suitable for the purpose of the workshops.

Participants		Data Collection		Duration
Level	**Number**	**Method**	**Instrument**	
Executives & Senior Management	7	Interviews	• Interview Guide • Embedded Background Survey	2-3 hrs per interview
Key BPM staff	18	Workshops (6) • 1 per factor • Max 5 people per w/s	• Workshop Guide • Embedded Background Survey	3-4 hours per w/s
	15	On-line Survey • 1 survey per w/s	• Maturity Survey	15-20 mins p/survey

Table 45: Company M – Participation in Data Collection

In December 2006 at the completion of the case study, the Researcher provided a report from the case study to Company M. An extract summary of this report appears in:

Appendix 13.3.10 – Final Report: Executive Summary & Contents.

In February 2007, the Researcher conducted a presentation of the case study outcomes to Company M participants. Furthermore, in July 2007 the Researcher presented the case study outcomes to the Global Process Owners and other Executive and Senior Managers from Company P. During the presentations, participants were encouraged to ask questions and to clarify points as required.

ID	Age	Sex M/F	Years Service*	Location	BU	Position	Years in Position	BPM Experience (L M E)	Education	Process Custodian (Yes/No) [60]
P1	50	M	28	L1	A	General Manager – Sales and Marketing	3	L	1, 3	Y
P2	43	M	21	L1	B	Manager – Traffic and Sales Support	2	E	1, 3	Y
P3	53	M	6	L1	A	General Manager – Asset Management and Energy	1	L	1, 3	Y
P4	55	M	13	L1	C	HR Manager – Corporate	2	M – E	1, 2, 3	N
P5	53	M	16	L1	C	General Manager – Business Improvement	3	M – E	1, 3	Y
P6	40	M	7	L1	D	Business Process Leader – Purchase to Pay	1	M – E	1, 3, 4	Y^
P7	38	M	3	L1	C	Financial Controller	1	M	1, 3, 5	Y
P8	31	M	10	L1	A	Specialist – Systems Development	2	M	1, 3	N
P9	35	M	8	L1	C	Specialist – Learning and Development	6	M	1, 3, 5	N
P10	50	M	6	L1	C	Specialist – Learning and Development	4	M	1, 2, 3, 5, 6	N
P11	41	M	25	L2	D	Procurement Systems Analyst	5	M	2, 3, 4	N
P12*	51	M	13	L1	C	CIO	2	E	1, 3, 5	N
P13	33	M	10	L1	C	Manager – Business Improvement	2	M	1, 3	N
P14	30	F	2	L1	C	Specialist – Business Process Team Leader HR	.5	M	1, 2, 3	N
P15	49	M	10	L1	C	Prime Consultant – HSE System	2	E	3	N

[60] Company M used the term Process Custodian to denote the executive or senior manager with accountability for each of Company M's seven core processes.

ID	Age	Sex M/F	Years Service*	Location	BU	Position	Years in Position	BPM Experience (L M E)	Education	Process Custodian (Yes/No) [60]
P16	52	M	23	L1	C	Manager – Project Services	1	M	3	N
P17	57	F	6	L1	C	Manager –Document Management Programme	1	E	3	N
P18	32	M	10	L1	D	Manager – Process Improvement	1	M – E	3, 5	N
P19	37	M	14	L1	C	Manager – Business Improvement	2	M	3, 5	N
P20*	29	M	10	L1	C	Manager – Human Resources	1	L	1, 3, 5, 6	N
P21	41	F	4	L1	C	Manager – Business Systems	1	M	1, 3	N
P22	48	M	26	L1	D	Manager – IT Service Delivery	1	E	1, 3, 5	N
P23	28	F	4	L1	C	Specialist – Software Development	4	L	1, 3	N

Legend

***** Years Service shows combined Company M and Company P service

^ Past Process Custodian

Business Unit: A – Process A; B – Process B; C – Head Office; D – Company P

Location: L1 – Head Office; L2 – Processing Site

BPM Exp: L – Low; M – Medium; E – Extensive

Education: 1 – Year 12 (equiv); 2 – TAFE; 3 – University; 4 – Apprenticeship; 5 – Professional; 6 – Other

Table 46: Company M – Participant Details

6.4 Company M's BPM Initiative

Company M was a wholly owned subsidiary of Company P operating in the mining and resource sector. Company M consisted of a number of operational sites located around the world, with a corporate head office based in Brisbane[61].

All sites and corporate head office had 'value delivery strategies' to guide performance. For the sites, these strategies focused on the sustainable improvement of production, and the cost and revenue capability of existing assets. To achieve operational excellence and to maximise the value-added production and customer satisfaction, the sites applied, or had access to, proven world class operating, maintaining and improvement methodologies, core technology and knowledge. The sites had a highly skilled and motivated all-staff workforce empowered to perform and highly qualified HSEC management[62].

The role of corporate head office was to support and service the sites in these endeavours. This included providing context and strategic direction, providing strategy, policy and practices to maximise the potential and satisfaction of employees, providing audit and governance systems, providing technological expertise, and maximising rates of improvement and learning through collaboration, common systems and standards and a united culture.

Company M saw its competitive advantages as:

- Having a world class mineral deposit that underpins their business
- Having long term contracts with essential suppliers
- Being able to leverage synergies from Company P
- Having an "all-staff" workforce committed to continual improvement[63].

[61] The source of the information in this section was primarily a presentation by the General Manager - Process Improvement and a review of corporate documents.

[62] HSEC is the Health, Safety and Environment Community that provides safety requirements and governance for the mining sector.

[63] An "all-staff workforce" was the term Company M used to denote the lack of unionisation within the company.

6.4.1 Commencing the BPM Initiative

Participants indicated that the *BPM Initiative* had been evolving within Company M since the early 1990's. This was evident in comments such as:

> *"…I've been here for ten years and we were doing it for a few years before that..."*

> *"...it's been quite an on-going journey that we've built upon over time and to get to certain points there's quite a lot of bases to get there…"*

There was a view amongst participants that the focus of the *BPM Initiative* had become stronger in recent years, shown in comments such as:

> *"…there has been a stronger focus in last 4-5 years…"*

> *"…the focus has really improved in the last 4-5 years…"*

This increase in focus was at a time when Company M was seeking to improve the cost base of business as a percentage of production whilst maintaining a strict approach to safety as shown in Figure 27 and Figure 28.

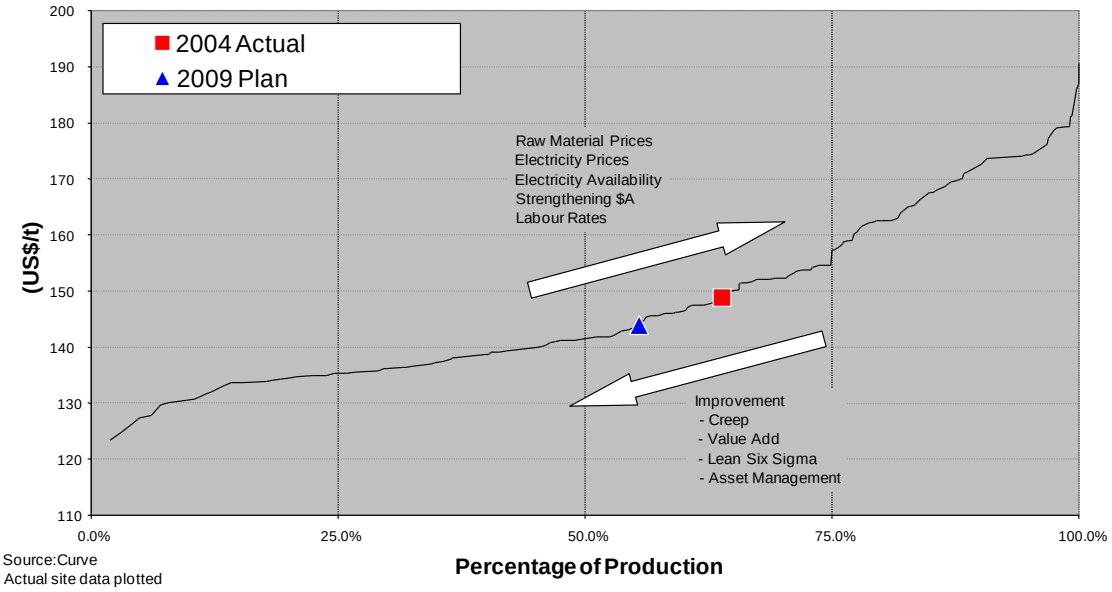


Figure 27: Company M Vision for BPM and Cost Reduction

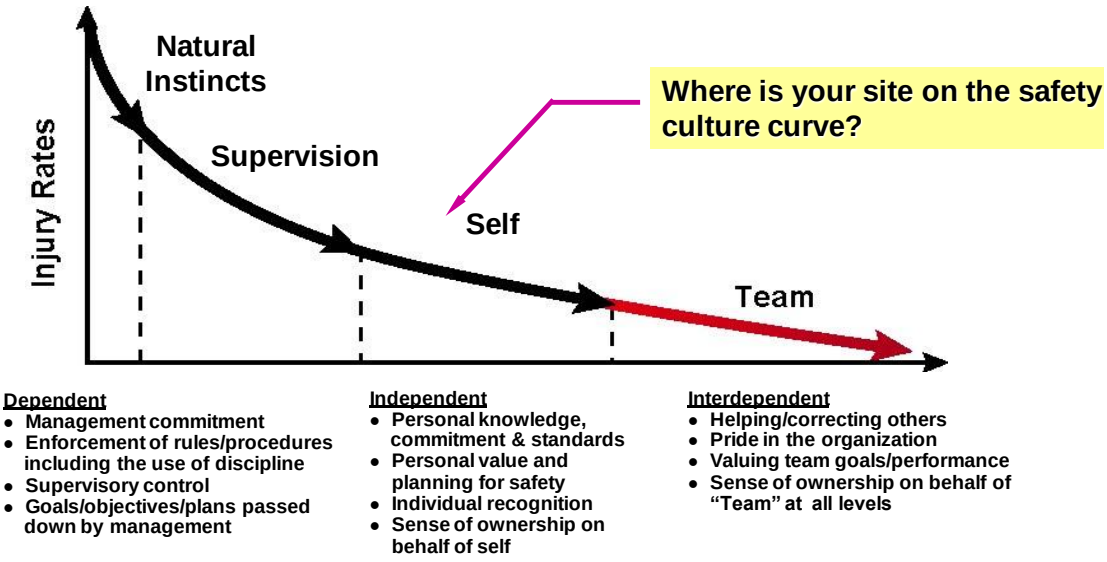


Figure 28: Company M's Approach to Safety

6.4.2 BPM Projects and their Drivers

Since Company M has had a BPM focus, there have been a number of individual projects undertaken. Table 47 shows the major projects undertaken as a part of the *BPM Initiative*, identified by participants in the *Background Survey*.

Year	Driver	Initiative[64]
1991	ERP Implementation Leadership	Initial implementation of SAP Project U – Training program targeted at senior management to developed desired leadership capability
1996	Consistency / Standardisation	Project V – Adoption of safety method to improve the efficiency and effectiveness of staff
1997	Consistency / Standardisation	Single ERP system
2000	Company Culture, Consistency / Standardisation	One-Company M – Concept to develop a common company culture and a common way of doing things

[64] The Researcher compiled this list from the survey information provided by Participants in the interviews and workshops. To maintain the confidentiality of Company M, the Researcher has changed the names of the projects.

Year	Driver	Initiative[64]
2000	Cost Reduction / Improvement	Project W – Review of procurement process
2002	Cost Reduction / Improvement	Six Sigma – Adoption of methods to control variation in processes to enable more consistent process outcomes
2004	Cost Reduction / Improvement	Lean Manufacturing – Adoption of method to promote proactive, everyday approach to the removal of waste from processes
2005	Consistency / Standardisation	Project X – Implementation of a Single Business System throughout Company P, with Company M as the pilot site
2006	Consistency / Standardisation	Project Y – Definition of common measures for processes

Table 47: Selected Major BPM Projects

This table shows that the drivers for projects have changed over time. At times, a corporate desire for consistency and standardisation resulted in projects that aimed to simplify and streamline processes, such as the introduction of a common, single ERP or business system. Support for this driver was evident in comments such as:

> *"…it's part of the reason we're going to one particular business system, the capacity to actually pull apples to apples…"*

At other times, the focus was on cost reduction and improvement. This resulted in an initial focus on methods that would enable the development of skills within the company to achieve future improvements. This was evident in the selection of process improvement methods such as Six Sigma and Lean Manufacturing, and comments such as:

> *"…to give people the best tools we can to enable that outcome…"*

The range of projects showed that the *approach* to the initial implementation and continuing application of a *BPM Initiative* could be *project-based*, even when the *scope* of the *BPM Initiative* was *enterprise-wide*.

Aligning the projects with the factors contained in the *Extended Conceptual Model* provided an alternate view as shown in Figure 29[65].

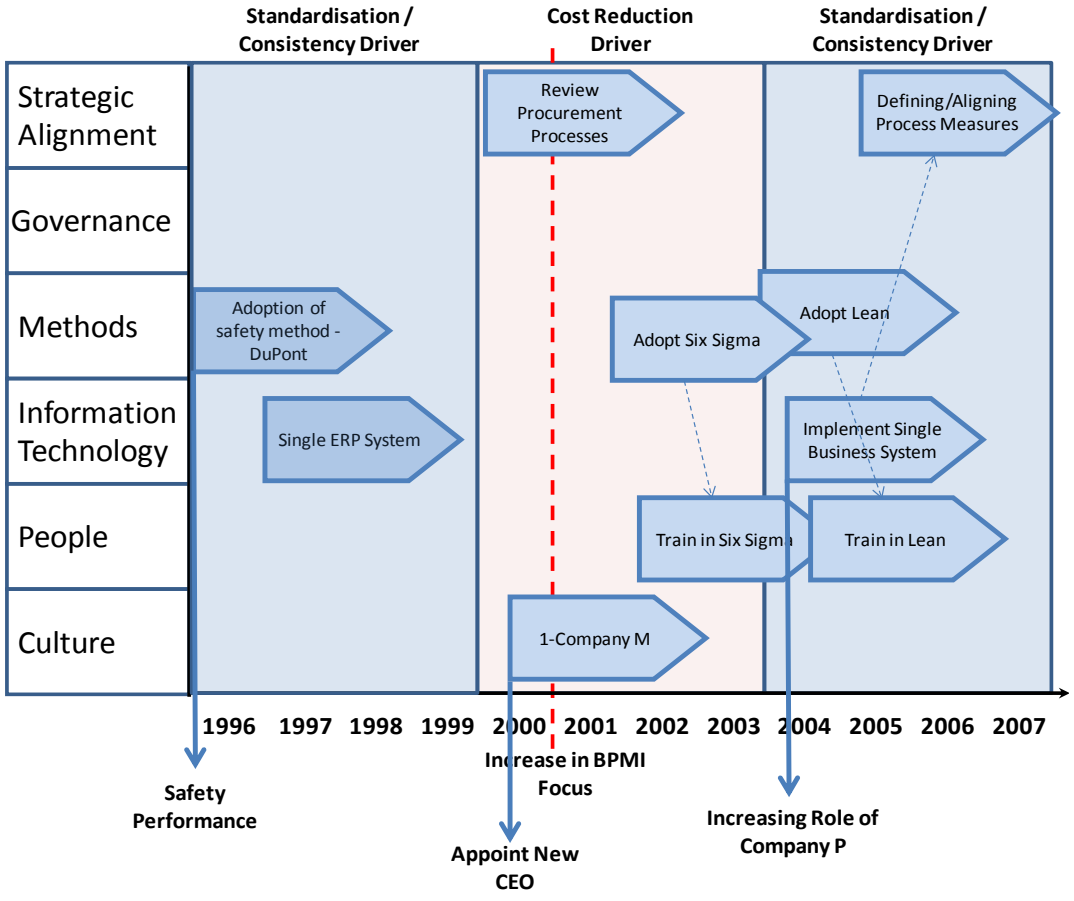


Figure 29: Selected BPM Projects per Factor

[65] The placement of each project symbol is representative of the time at which the project or concept commenced within Company M. The size of the symbol is not representative of the duration of the project or the continuation of the project outcome within Company M. For example, the 1-Company M concept is still in evident in 2009 in a modified format – becoming 1-Company P with the increased involvement of Company P.

Figure 29 highlights a number of aspects discussed in the coming sections.

Firstly, it shows that the focus across factors is not uniform at any given point. During the *BPM Initiative* there were no major projects focused on developing *BPM Governance,* for example. Over this same time however, there was higher attention given to projects regarding the selection and adoption of *Methods* and *Information Technology*.

Despite this apparent lack of attention to *Governance*, data from the interviews and workshops highlighted the importance of *Governance* (see Section 6.5 and Appendix 13.3.1 for further details). This suggested that a factor could be of significance to the *BPM Initiative* even though there may have been no major projects that aimed to develop capability within it.

This raised the potential for spurious results during measurement depending on how the measurement items and instruments seek to capture the significance of a *factor*.

Secondly, it shows that progression could reflect the introduction of a number of complementary practices within a factor over time. Company M selected and implemented more than one method for improving processes, for example. In part, this was to meet changing needs – from a safety driver to a cost driver. Interview and workshop data showed however, that Company M also introduced Lean to meet shortfalls in the expected benefit arising from the use of Six Sigma (see Section 6.5 and Appendix 13.3.1 for further details).

This suggested that prescriptive approaches to BPM that rely on a single best practice approach may not adequately capture the *existing contextual environment* of the organisation *or the changing contextual circumstances* of organisations that lead to modification or extension of practices based on suitability.

Thirdly, it shows that the focus on an individual factor was not constant, varying over time. There was heightened attention given to IT in the late 90's with the introduction of a new ERP system to streamline processes, for example. During the early 2000's however, attention decreased in some factors, before gaining momentum again in the mid 2000's. The increase in attention coincided with Company P becoming more active in BPM, looking to introduce a common business system across all its business entities.

This raised the potential for spurious results during measurement depending on the extent to which measurement items and instruments capture the rise and fall in activity over time and at different points in time.

Fourthly, it shows the potential for causal relationships between the factors and capability areas over time. Following the implementation of the methods such as Six Sigma and Lean (*Methods – Process Improvement and Innovation*), Company M undertook an extensive period of training in these methods (*People – Process Education and Training*), for example. Similarly, Company P's desire to implement a common business system across multiple organisations (*IT – Process Implementation and Execution*) has increased the focus on adopting and refining consistent process measures that align with the new system and business requirements (*Strategic Alignment – Process Measures*).

This showed that the measurement issues identified in earlier points in relation to *factors* also apply at the level of *capability areas*.

Subsequent theory and measurement instruments need to consider the implications of these findings.

6.4.3 Benefits from the BPM Initiative

Although not aligned directly with individual projects, participants identified a number of benefits arising from the *BPM Initiative*. Table 48 provides a summary of the key areas in which participants had experience positive consequences that they attributed to the *BPM Initiative*.

Affect	Area of Affect
Reduction in	Costs / Production costs Variation Waste
Improvement in	Strategic planning, focus and alignment *Organisational Performance* Project turnaround times Operational measures such as customer satisfaction, consistency / quality and safety / number of lost time injuries Identification of improvement opportunities and alternatives Identification of risks Stability of physical processes Capacity from existing assets with only marginal capital Providing the right tools and systems Portability and transitioning of staff Collaboration on processes
Increased awareness of	Processes Inter-relationships between processes Process change and its consequence Concept of value-add
Increased control over	Finances Measurement Data collection
Increased standardisation / commonality in	Processes Practice Systems / Platforms Language Culture / Behaviour

Table 48: Major Affects of BPM

The data in Table 48 shows that Company M achieved numerous positive benefits arising from implementing a BPM approach. Some participants also noted the potential for less positive affects, however. One participant was concerned that controls may become excessive, stating:

"…we are probably overly tightening up on controls…"

Another participant was concerned about the loss of flexibility, indicating:

"…there are areas that you just can't make common (…) we've compromised in doing some things in SAP…"

Yet another participant summarised the potential impact of process change projects by stating:

"…my earlier comments on the valley of despair (…) it's about keeping us in the top of that and not letting us get down to the bottom because otherwise it's a long haul out of it again…"

These comments suggested that, immediately following a major process change project an organisation might expect a period of reduced or negative reaction until individuals within the organisation embed and accept the change.

This showed that a *BPM Initiative* could have both positive and negative effects on an organisation. A potential consequence of this is that the progression of a *BPM Initiative* may not always be linear or in a forward direction.

6.4.4 Challenges to BPM Progression

Despite the benefits achieved from the *BPM Initiative*, participants identified the necessity to continually revisit and enhance practices:

"…it's never going to be right when you first implement it and you've always got to keep changing (…) the idea of continuous improvement…"

The need to adjust practices was evident in the challenges that Company M had experienced during its journey. From the data collected during the interviews and workshops, the Researcher classified the major challenges into categories of (1)

Engagement and Commitment, (2) Common View and Understanding, (3) Co-ordination and Resourcing and (4) Consolidation and Sustainability. When reviewing future challenges, the Researcher established two additional categories of (1) Visibility and Results and (2) Standardisation and Globalisation. Table 49 shows the number of items mapped to each category in the past and in the future.

Challenge	Number of Items Mapped	
	Past	Future
Engagement and Commitment	8	0
Common View and Understanding	8	6
Co-ordination and Resourcing	7	1
Consolidation and Sustainability	4	7
Visibility and Results	0	3
Standardisation and Globalisation	0	2

Table 49: Major Challenges – Past and Future

This table shows that, based on the experiences and expectations of workshop and interview participants, items relating to the challenge of '*engagement and commitment*' have reduced in number over time. There are however, now more items in the challenge of developing a '*common view and understanding*' and on ensuring the '*consolidation and sustainability*' of practices.

The change in the type of challenge addressed suggested that stages of progression for a *BPM Initiative* are possible. A potential consequence of this being that during different stages the relationships between the factors and capability areas may vary.

Further details of the challenges identified and the mapping to these areas is set out in:

Appendix 13.3.11 – Categorisation of Past Challenges

Appendix 13.3.12 – Categorisation of Future Challenges.

In addition, there were a number of events identified that participants credited with having a significant influence on Company M's *BPM Initiative*. The first of these was the One-Company M concept.

6.4.5 The Role of One-Company M

Participants saw the introduction of the *One-Company M* concept in 2001 as a crucial step in moving the *BPM Initiative* forward. The *One-Company M* concept was instigated by the then CEO of Company M whose vision was to unite the organisation under one common umbrella. Comments by participants included:

> *"…I remember when Company M, Site A and Head Office became more integrated and then Company M became more integrated, and Process A moved up here, it more or less became one big Company M..."*

> *"…we're well down the path of attaining that one view, the One Company M view. Previously we've been pretty dominantly 'own business' operating sites whereas now I think we do have a wider hat on (…) that was a major, major change…"*

The modification of Company M's logo to incorporate the *One-Company M* concept was a further sign of the commitment to this initiative.

These statements show how having a *BPM Initiative* with strong CEO support and a clear vision can assist a company to overcome boundaries (in this case the disparate operation of Head Office and the sites). Additional statements highlighted the long-term nature of a *BPM Initiative* including:

> *"…it's probably the hardest bit to get (…) there's much more of a One-Company M culture than there used to be, it's still a hard thing to really achieve…"*

The emerging influence on Company M's *BPM Initiative* by Company P resulted in a change from a *One-Company M* to a *One-Company P* view. Despite the positive effects of the *BPM Initiative* within One-Company M, this transition was not without challenge, as discussed in the following section.

6.4.6 The Influence of Company P

As indicated earlier, Company M was a wholly owned subsidiary of Company P. Until shortly before the case study, Company M had been operating predominantly as a stand-alone company, able to make operating decisions in its own best interest. Company P had recently made a decision to become more active in implementing a BPM approach as a means of increasing synergies between its wholly owned or controlled entities, of which there were more than 50. Comments from participants reflecting the change in focus within Company M included:

> *"…a step to the One Company M, the next step to One Company P (…) as long as it's led right it should be all right…"*

> *"…had One Company M (…) now we're becoming One Company P…"*

Consequently, the BPM strategy within Company M was now driven by their parent company, Company P, rather than from within Company M. This was evident in comments such as:

> *"...and then that's when we moved further with Company P taking more control…"*

> *"…increasingly more adoption or really ownership – especially with the integration of Company P – more visible in the last 12 months…"*

Further evidence of the increase in Company P's influence on Company M was apparent in projects such as Project X and Project Y[66]. Company M was the pilot

[66] To maintain the confidentiality of Company M, the Researcher has changed the names of the projects.

implementation site for these projects[67]. Comments supporting this view included:

> *"…if it was just within the Company M framework and we didn't have the Project X's and the Project Y's coming on we'd be probably rocking on and keeping going but with those other external influences and trying to align all of it, it's impacted pretty heavily…"*

Company Ownership Structure **is a contextual variable that can affect the direction and focus of a** ***BPM Initiative*****.**

The impact of the increasing involvement of Company P within Company M's *BPM Initiative* was evident. Participants had previously credited Company M's culture, stemming from the One-Company M initiative, with enabling the progress of many of its discrete *BPM Initiatives*. At the time of the case study however, it seemed that this same culture had the potential to create issues in the transition to a One-Company P initiative. In support of this, participants indicated:

> *"…but if it suddenly becomes this is the Company P way this is what we'll be implementing next week then, like most places, we'll run into issues…"*

> *"…if the first couple of decisions (…) are in line with the Company P views you can have a happy harmony (…) but you can just see the sites saying no, it's not going to work, you have to do this and if it still comes in no, you're doing this (…) they'll feel disenfranchised and say well, no point..."*

These comments raised an interesting point regarding the progression of *BPM Initiatives*. They showed that when Company M was able to act in their own best interest, people within Company M were happy to progress projects. With

[67] Project X and Project Y are Company P projects as a part of their overarching, global BPM Initiative. Company M is the pilot site for these projects due to its prior success with BPM.

Company P's increasing involvement however, Company M became one of more than fifty entities that Company P was seeking to optimise. Consequently, the likelihood of BPM strategies set by Company P always being optimal for Company M reduced. Comments from participants indicated that this would potentially cause issues in the acceptance of changes within Company M. Conceptually, the Researcher sees this phenomenon as being similar to issues arising from functional boundaries within a company.

Globalisation of *BPM Initiatives* in conglomerates (e.g. Company P) faces conceptually similar boundary-crossing and sub-optimisation issues as those presented by functional silos within stand-alone organisations (e.g. Company M).

Despite this, there was a perception that the sustainability of the *BPM Initiative* was difficult but necessary to achieving a proactive and competitive business. This was evident in comments including:

> *"…sustainability is difficult…"*

> *"...BPM will stay and evolve. It may change totally, but one way or another there will be business processes and they'll be used to manage most of what we do..."*

This confirms the relevance of this study and provides an impetus for continuing to develop theory that will assist in the sustainability of BPM within organisations.

6.5 Testing the Extended Conceptual Model

The second aim of this case study was to test the *Extended Conceptual Model* within a practical setting. This resulted in the completion of the *Maturity Surveys* by participants in each workshop. From the survey data, the Researcher calculated a quantified maturity score for each capability area and factor. This section summarises the quantifiable figures, highlighting key points of interest. The Researcher combined the quantified figures with the qualitative data

captured during interviews, workshops and document review. In doing so, the Researcher provides insights into the applicability of, and, potential interactions within, the *Extended Conceptual Model*. The following section provides a condensed version of these findings. Appendix 13.3.1 provides further details of this body of work and provides additional support for the assertions made below[68].

6.5.1 Overview of Factors

Application of the *Maturity Surveys* resulted in the calculation of quantifiable *maturity scores* for the factors. Figure 30 shows the *maturity scores* calculated with the dotted line reflecting the average score across all factors, for Company M. As indicated earlier, the scores have been calculated by averaging responses from a 5-point rating scale where a 1 reflects low maturity and a 5 with high.

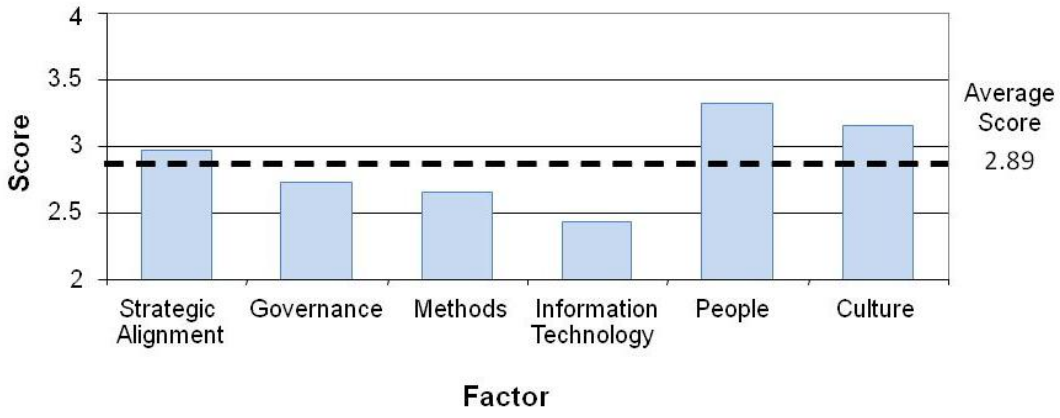


Figure 30: Maturity Scores per Factor

As Figure 30 shows, there was a noticeable difference between the *maturity scores* of the factors, ranging from 2.43 through to 3.32, an overall range of 0.89. *People* (3.32), *Culture* (3.15) and *Strategic Alignment* (2.97) have higher average scores whilst *Governance* (2.73), *Methods* (2.66) and *Information Technology* (2.43) have lower average scores.

[68] The constraints of the PhD thesis have led to this presentation format.

The exploration of Company M's *BPM Initiative* showed that concepts such as One Company M have directed attention towards some factors more so than other factors. This reflected in higher *maturity scores* for the *People* and *Culture* factor. Application of the *Extended Conceptual Model* in the surveys also enabled the calculation of maturity scores for the capability areas, as shown in Figure 31. Use of the model as a guide to the workshops also enabled deeper discussion of the practices within the capability areas of each factor, providing additional insights into progression of the *BPM Initiative*.

6.5.2 Overview of Capability Areas

As indicated earlier, the design of the *Maturity Surveys* resulted in the Researcher calculating a separate maturity score for each capability area. The results arising from completion of the *Maturity Surveys* during the workshop appear in Figure 31.

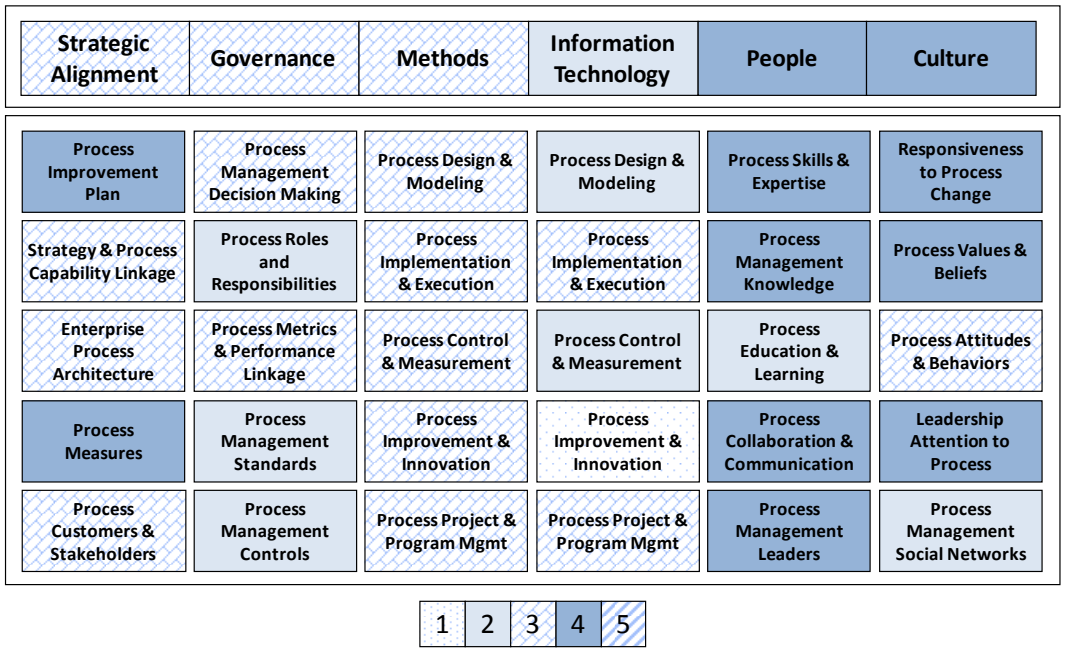


Figure 31: Capability Area Results – Company M

Figure 31 shows that across the capability areas there is a marked difference in the maturity. This difference was evident both within and across factors. The range in scores across the capability areas but *within* each factor also showed significant variation as seen in Table 50.

Factor	Range in Capability Areas
Combined Factors	0.89
Individual Factors	**Range in Capability Areas**
Strategic Alignment	0.23
Governance	0.57
Methods	0.20
Information Technology	0.97
People	1.59
Culture	1.50

Table 50: Range in Maturity of Capability Areas

The details in Table 50 show that the range in maturity scores within factors varies more than the range across the factors. The calculated maturity scores for all capability area across the factors ranged from 1.89 through 4.06, a range of 2.17 on a 5-point scale. This was significantly greater than the range within the factors which was only 0.89. This indicated that within some factors, maturity of the capability areas was more consistent than in other factors.

The range in variation at the level of the capability areas showed that the additional level of granularity (below the level of factor) has the potential to provide deeper insights into *BPM Progression*. Consequently, at this early stage of theory development, important relationships and understanding may be lost or overlooked if research is only at the level of the factors.

This range in variation also suggested that organisations choose to develop capability areas in response to their own circumstances.

6.6 Outcomes and Next Steps

The case study with Company M provided a number of outcomes that are important to this study. The first of these is an understanding of the progression of a *BPM Initiative*. The study with Company M showed that even when the *BPM Initiative* is company-wide, the execution of the *BPM Initiative* is likely to encompass a series of projects. Furthermore, the drivers and organisational context are likely to influence the selection of projects that aim to deliver benefits and/or build capabilities of most immediate purpose to the organisation.

Figure 32 summarises this interaction. In essence, the *BPM Initiative* potentially involves a multitude of projects that have competing priorities and are at different stages of the completion. As seen within Company M, this can affect not only the progression of the *BPM Initiative* but also the measurement of this progression.

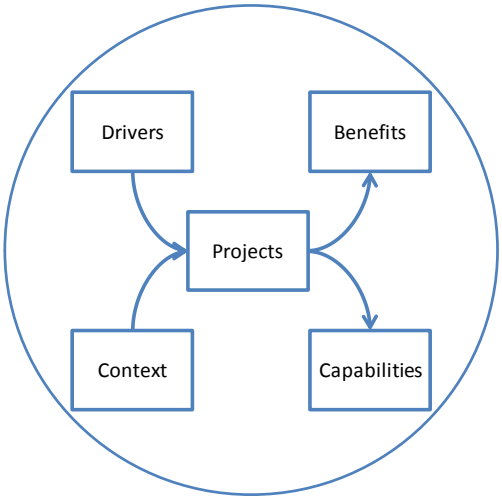


Figure 32: Elements in a BPM Initiative

The consequence on the overall progression of the *BPM Initiative* from a progression and measurement perspective includes:

- Organisations may choose to put more or less emphasis on progressing factors at different points as drivers and context change. Consequently, a prescriptive approach to implementing a *BPM Initiative* is unlikely to lead to optimal results.

- Factors may mature at different rates, dependent upon the success and magnitude of the projects undertaken. In Company M, this was evident in higher levels of maturity in *People* and *Culture* factors due to *One-Company M* and the focus on working together to promote standardisation.

- The significance of factors may vary over time dependent on where the organisation has elected to develop capability and/or achieve benefits. The prima facie significance of *Information Technology* for example, was strong during times of implementing new technology. Outside of these times however, the relative significance may have appeared less, if measured then.

- Causal relationships are possible between the capability areas. Furthermore, these relationships may vary over time, being more or less visible at different times. This was evident in Company M in the increase in training that occurred immediately following the implementation of new methods for process improvement. It was also apparent in the relationship between the conduct of projects to implement a standardised technology for the execution of core processes and the corresponding increase in attention to establishing process measures.

- The capability areas provided the potential for gaining deeper insights into progression and measurement as, when these roll up to a factor level, differences and variation can be lost or overlooked.

These outcomes have significant implications for this study as they affect the design and construct of both a theory on *BPM Progression* and instruments to measure *BPM Maturity*.

6.6.1 Next Steps

As noted in Chapter 2, the ability to generalise is important to the development of theory. Thus, while the outcomes from the case study with Company M provided important insights into potential relationships, the extent to which these outcomes can be generalised across organisations is largely unknown at this stage. The case study with Company M also captured data for the entire progression of the *BPM Initiative*, although it did not capture data in a manner that enabled the measurement of change in the relationships from one point in time to another. One can therefore only assume that a change in capability areas or factors occurred and further investigation is required to substantiate this assumption.

Consequently, the next chapter begins Stage 2 of this study. This stage looks to build upon the conceptual beginnings arising from the study to this point. As indicated in Chapter 2, due to the early stage of theory development, conducting a longitudinal study with multiple case organisations was more appropriate to the theory building than cross-sectional studies at this point[69]. Stage 2 of this study culminates in the proposition of theory on *BPM Progression* and the proposal of a measurement model for *BPM Maturity*.

6.7 Chapter Summary

This chapter detailed the design and conduct of a single exploratory case study. The aims of this study were to explore the progression of a *BPM Initiative* within an organisation and to test the extended conceptual model within a practical setting.

The chapter commenced with details of the case design. This included setting the unit of analysis as the *BPM Initiative* and selecting Company M as suitable for the study. Next, the Researcher detailed the design of a number of data collection instruments including an *Interview Guide*, a *Workshop Guide*, a *Background Survey* and the revised *Maturity Surveys*. The following sections detailed participation in the case, including the participants and the data collection in which they participated.

The following sections detailed key aspects of the progression of the *BPM Initiative* within Company M. This included how Company M took a long-term approach to continually developing its *BPM Initiative*. Consequently, the *BPM Initiative* included a series of projects that arose from a combination of contextual influences and drivers for change within Company M. Key aspects such as the *One-Company M* concept and the increasing role of Company P had significant influence over the progression of the *BPM Initiative*, showing that progression was not necessarily linear or always in a forward direction.

[69]Chapter 2 provides additional details on the selection of Longitudinal Case Studies for this stage of the research.

Application of the *Maturity Surveys* highlighted the consequences of progression on measurement, showing first, how factors displayed less variation than did the capability areas. Furthermore, this study showed that the contextual and temporal aspects of progression combines and creates the potential for dynamic causal relationships at both the factor and capability area level. The static and singular point of data capture in the case study made views on the change in factors and capability areas an assumption that required further investigation.

The next chapter details the design of the longitudinal case studies undertaken with five companies to build upon the conceptual theory emerging from Stage 1 of this study.

STAGE 2

BUILDING BPM THEORY

7 Longitudinal Case Studies

The focus of this study thus far has been on the exploration of *BPM Initiatives* within organisations. In the previous chapter, the Researcher explored the *BPM Initiative* in a large mining organisation using the *BPM Capability Framework* developed from the Delphi Studies. This study showed variation in the development of the capability areas over time. Consequently, to refine and confirm the emerging theory on progression, the Researcher conducted a series of longitudinal case studies centred on the capability areas. These cases enabled the Researcher to study the extent to which the emphasis organisations placed on the capability areas changed between two defined points in time. Pettigrew (1990, 269) states:

> *"…For the analyst interested in the theory and practice of changing, the task is to identify the variety and mixture of causes of change and to explore through time some of the conditions and contexts under which these mixtures occur…"*

Studying the change in emphasis over time enabled the Researcher to explore which capability areas organisations focus on, to what extent and when, while also gaining an understanding of the context in which the change occurred. Furthermore, the use of multiple studies enabled investigation of the potential for patterns in the selection of capability areas across companies, thereby increasing the generalisability of outcomes.

7.1 Chapter Overview

The structure of this chapter is as follows. Section 2 details the design of the longitudinal case studies including the definition of the unit of analysis and the use of sampling when selecting cases. Section 3 details the data collection instruments including the design of the interview and workshop guides and the so-called *BPM Evolution Survey*. Section 4 discusses the data collection process including the scheduling of the cases, inviting participants and the approach taken to collecting data. Section 5 details the approach to calculating the change in emphasis between the two data points included in the longitudinal study. Section 6 concludes with a summary of the chapter and an outline of the forthcoming chapters that present the within case and cross case analysis and propose the refined theory arising from this study.

7.2 Multiple Case Study Design

The earlier case study with Company M highlighted the temporal implications of progressing *BPM Initiatives*, showing that an organisation will potentially focus on developing different capabilities at different points in time. Consequently, the response to questions about a *BPM Initiative* is likely to vary, dependent on the stage of progression. Furthermore, as the interpretation and understanding of BPM can vary (both within the domain and within an organisation) a single point of reference for data collection, be it time or participant based, has the potential to bias data. Bowen and Wiersema (1999) suggested that to conduct cross-sectional studies in such circumstances, without understanding the import of these aspects would potentially result in spurious outcomes.

An alternative approach is to undertake a longitudinal study that captures data at more than one point in time. A longitudinal case study enables the investigation of change over time allowing for greater identification and understanding of the relationships between variables, whilst also enabling the capture of views from multiple informants within an organisation (Bergh & Holbein 1997; Hill & Hansen 1991). Furthermore, the conduct of multiple longitudinal case studies would improve the generalisability of outcomes by enabling cross case analysis. Pettigrew (1990) referred to this approach as a *"longitudinal comparative case study method"*.

One approach to a longitudinal study is to investigate a number of companies closely over an extended time. A potential limitation of this approach is the time and commitment required. An alternative approach is to have a single data collection point that captures data for more than one time point. A potential limitation of this approach is the historic recollection of the informants with regard to past events[70].

In this study, the Researcher utilised the second of these two approaches due to the desire to improve the generalisability of the theory by conducting multiple studies, and the time constraints of the study. This means that the Researcher captured *quantitative* data for two points during the single case study. The data points selected by the Researcher were the *first year* and the *last year* of the *BPM Initiative* within each company. The *first year* referred to the year participants of each company recognised as the starting point of the *BPM Initiative*. The *last year* referred to the most recent year of the *BPM Initiative*.

The Researcher supplemented the quantitative data collected at these two points by collecting *qualitative* data in interviews, workshops and documentation reviews. This qualitative data related to the entire journey of the *BPM Initiative* within the organisation, including the time immediately prior to commencing the *BPM Initiative*. The Researcher used the qualitative and quantitative data to triangulate findings regarding the progression of the *BPM Initiatives*[71].

7.2.1 Approach to Sampling

Yin (2003) distinguished between *literal* and *theoretical* replication. According to Yin, literal replication aims for similar results from different sites to confirm the circumstances in which the expected outcome will hold. Theoretical sampling however, aims to show that the absence of certain conditions within cases will result in different outcomes thus confirming the importance of the condition to the

[70] To minimise the effect of historical recollection, the Researcher used a combination of multiple informants and complementary data collection instruments. There is a discussion of other limitations of this approach in Section 11.4.3.

[71] The research of Kim & Malhotra (2005); Leonard-Barton (1990); McPhee (1990); van de Ven & Huber (1990) informed the design and conduct of these longitudinal case studies.

theory. Eisenhardt (1989) recommended using theoretical sampling in order to select cases that will enable the extension or replication of theory.

Literal Replication

The emerging theory on *BPM Progression* suggests that, within their *BPM Initiative*, organisations focus on developing different BPM capability at different times. To achieve literal replication it is therefore necessary to show that the progression of *BPM Initiatives* (as evidenced by the emphasis placed on building capabilities) varies across different organisations, at the same point in time.

Theoretical Replication

With regard to theoretical replication, the Researcher contends that the *structure* of the *BPM Initiative* and the concept of *Executive Buy-In* are conditions that are likely to lead to different results in the progression of *BPM Initiatives*.

The basis for the contention about the *structure of the BPM Initiative* arises from the difference in interpretations of BPM as a management approach[72]. The contention with regard to the level of *Executive Buy-In* arises from the continual reference to the importance of *Executive Buy-In* to *BPM Initiatives* throughout this study and in extant literature[73]. Furthermore, the Researcher contends that the level of *Executive Buy-In* is likely to influence or perhaps determine the *structure* of the *BPM Initiative*.

By way of explanation, this study has shown that contextual variables such as *workforce demographics* and *legislation* are likely to affect how organisations do BPM (i.e. what the organisation does next and how). To this end, *Executive Buy-In* is a contextual variable as it affects which capability an organisation emphasises, to what extent and when. Low or isolated levels of *Executive Buy-In* for example, may cause an organisation to focus on building the capability area

[72] Refer to Chapter 3 for a discussion on the different interpretations including, technology, lifecycle and organisational management approaches.

[73] Case studies with Company A, B and M include reference to the importance of “leadership”, “executive support” and “executive commitment” as have researchers such as Pritchard and Armistead (1999) and Lee and Dale (1998).

Leadership Attention to Process sooner than later. Furthermore, the strategies selected for increasing leadership attention may depend on (among others) the types of leaders in the organisation.

The Researcher contends that the affect of *Executive Buy-In* is more significant to the progression of *BPM Initiatives* than other contextual variables. This is because *Executive Buy-In* has the potential not only to influence what happens within a *BPM Initiative* but also whether the organisation has a *BPM Initiative* at all and if so, what structure the *BPM Initiative* takes within the organisation. A lack of CEO support for example, may mean that an organisation does not have a *BPM Initiative*, or strong support from only a small number of executives may mean that the *BPM Initiative* only applies to a defined area of the organisation. Consequently, the *structure* of the *BPM Initiative* and the level of *Executive Buy-In* have the potential to extend the emerging theory by enabling exploration of the role and relationship of these two concepts.

7.2.2 Change in Emphasis

To date this study has focused on measuring *BPM Maturity*. One could therefore ask why the Researcher elected to measure the *change in emphasis* (as opposed to the *change in maturity*) of the capability areas. The Researcher contends that the level of emphasis placed on the capability areas was more appropriate for these longitudinal studies due to the focus on investigating the progression of the *BPM Initiatives*. As defined in this study, *BPM Maturity* was a static concept designed to capture progression of the *BPM Initiative* at a given point in time. Therefore, it aims to measure the consequence of progression. In the longitudinal studies, the Researcher wanted to investigate the way in which progression of the *BPM Initiative* occurred and to study what affected this journey, not measure the result of its occurrence[74].

[74] The Researcher recognises that emphasis does not equate with success, nor does it mean that the emphasis given was the best course of action. Furthermore, an organisation may place high emphasis on an area but not achieve a positive result, the expected result or the same result as another organisation placing the same emphasis. Investigating such issues however requires further research and Chapter 11 provides additional insights into this.

7.2.3 Case Selection

To address both theoretical and literal replication in the multiple case studies some companies needed to be similar enough in the characteristics of both the company and the *BPM Initiative*, whilst some needed to be sufficiently different. Thus, it was important to include organisations from a range of industries, known to have made progress with their *BPM Initiatives*, where the initiatives had a range of start dates, differing levels of *Executive Buy-In*, and differing structures of their *BPM Initiatives*. Furthermore, the accessibility of the organisation and to appropriate individuals within the organisation was also a criterion for the selection of cases due to time and budget constraints.

In selecting potential cases, the Researcher presented an outline of the planned study to the companies participating in the Australian BPM Roundtable[75]. The membership requirements of this forum meant that the basic criteria of having an active *BPM Initiative* and organisations with different demographics were satisfied. Following this presentation, 15 companies expressed an interest in participating and the Researcher subsequently provided them with additional documentation as shown in:

Appendix 13.4.1 – Expression of Interest in BPM Evolution Case Studies

Appendix 13.4.2 – Information Sheet and Informed Consent.

Four of the 15 companies were able to secure agreement to participate. Subsequently, another company approached the Researcher and agreed to participate in the study resulting in five cases participating in the final study. Table 51 shows the demographics of participating companies that the Researcher collected using the *BPM Evolution Survey* discussed in the next section[76].

[75] The Australian BPM Roundtable is a collaborative BPM forum, founded by Professor Michael Rosemann of QUT. Participating companies must have an active BPM initiative, representation from senior management and executive levels, and membership is subject to approval.

[76] The iterative use of case studies in this study, each with a different purpose, has led the Researcher to distinguish clearly between the names given to each group. To this end, the names given to the companies participating in the longitudinal studies are Company S, T U V and W.

Company Details	Company S	Company T[77]	Company U	Company V	Company W
Headquarters	Bathurst	Brisbane	Canberra	Clearwater USA	Brisbane
Industry	Education	Logistics	Innovation, Science and Technology	Aviation	Community Services
Turnover	$A300 million	$A2 billion	$A115 million	$A200 million	N/A
Employees	2,000	13,000	1,000	1,000	1200
Sector	Public	Public	Public	Private	Public
Ownership Structure	Education Facility (funded by Federal Government)	(State) Government Owned Corporation	(Federal) Government Agency	Wholly Owned Subsidiary	(State) Government Department
BPMI Structure[78]	Project Based / Enterprise Wide Program	Pockets of Excellence / Enterprise Wide Program	Project Based / Pockets of Excellence	Pockets of Excellence	Pockets of Excellence / Enterprise Wide Program
Executive Buy In[79]	FY: 3.4 LY: 4.8	FY: 2.5 LY: 3.2	FY: 4.1 LY: 4.3	FY: 5.0 LY: 5.0	FY: 1.9 LY: 5.7

Table 51: Summary of Company Demographics at time of Case Study

[77] Company T also participated in the initial case studies investigating the conceptual model (see Chapter 4). In the earlier case study, the Researcher called this company, Company B. The Researcher collected data for each of these case studies separately and the participants within each case study were different. Furthermore, the analysis of data from the longitudinal case study included only the data collected with regard to that case. For these reasons, the Researcher has distinguished the company name between the case studies.

[78] When selecting cases it was only possible to assess the prima facie levels of *executive buy-in* and the structure of the *BPM Initiatives*. However, prior knowledge of the organisations and their BPM Initiatives assisted the Researcher to make informed decisions with regard to this. The Researcher collected information to determine the *BPM Initiative* structure and *executive buy-in* levels shown here during the case studies.

[79] Participants rated the level of *executive buy-in* in the first year (FY) and the last year (LY) of the *BPM Initiative* using a - point scale where 1 was low and 7, high.

7.3 Data Collection Instruments

The Researcher designed a number of complementary data collection instruments including an *Interview Guide*, a *BPM Evolution Survey* and a *Workshop Guide*. In addition, the Researcher reviewed relevant documentation within each organisation. Consistent use of these instruments through all studies improved the comparability of data, enabled triangulation between data sources and improved the generalisability of findings.

7.3.1 Interview Guide

The purpose of the interview was to capture views on the *BPM Journey* within the organisation, from a range of individuals within each company. The Researcher designed an *Interview Guide* to direct the interviews and ensure a level of consistency in interviews within and across companies.

The Researcher used a semi-structured approach to the interviews, identifying the key areas of discussion but enabling each participant to determine the approach taken when responding. Some participants chose to describe the *BPM Journey* using a chronological approach. Others chose to follow the order of the key areas as reflected on the *Interview Guide*, addressing the key points in turn and describing how they had changed over time. The Researcher interjected with questions throughout the interview. A copy of the *Interview Guide* is in:

Appendix 13.4.3 – Interview Guide.

7.3.2 BPM Evolution Survey

The Researcher used an embedded survey, referred to as the *BPM Evolution Survey*, to supplement and quantify the qualitative data gathered during the interviews and workshop. This survey aimed to enable (1) the assessment of a change emphasis on capability areas within each organisation over time and (2) the subsequent comparison of a change in emphasis across the organisations. Additional aims of the survey were to measure the levels of *Executive Buy-In* and to capture details of the *BPM Initiative*.

There were two versions of the survey, one for the participants and one for the Key Contact. The only difference between the two versions was that the Key Contact version contained an additional section requesting company demographics. The remainder of the survey was consistent between the two versions, including five sections. A copy of the *BPM Evolution Survey* is in:

Appendix 13.4.4 – BPM Evolution Survey.

Section 1 provided participants with a summary of the study, a reiteration of the ethics requirements, and a number of key definitions used in the survey. In doing this, all participants had a consistent view of what the terms BPM, *BPM Initiative* and end-to-end process meant, prior to completing the survey.

Section 2 captured the demographics of the participant, including the individual's experience with the *BPM Initiative* and length of service with the company. This provided support for the suitability of individuals for participating in the survey.

Section 3 asked participants about the *BPM Initiative*, including the structure, key objectives and their perception of the success and maturity of the initiative. This enabled the Researcher to improve the quality of data by:

- Checking the consistency of data between participants within a company (e.g. that they all had the same 'start date' for the initiative)
- Allowing for more complete collection of historic data as one participant may recall an event or item that another failed to recollect
- Enabling comparison of data between companies (e.g. what structures of *BPM Initiative* existed within each company).

Section 4 captured the level of emphasis placed on the capability areas at two points in time being the *first year* and the *last year* of the *BPM Initiative*[80]. To ensure consistency in which year participants viewed as the *first year*, a question regarding the start date of the *BPM Initiative* was also included in Section 3 of the survey. When a participant did not have knowledge of the first year of the *BPM*

[80] The *last year* was not to imply that the BPM Initiative was no longer current but referred to the most recent year of the BPM Initiative.

Initiative either, because they were not involved with it or because they did not work for the company at the time, they responded to only the *last year* questions.

The questions in **Section 4** related to the 30 capability areas of the extended conceptual model (i.e. the so-called BPM Capability Framework). Using the experience and data gathered in the Delphi studies and a further literature review, the Researcher derived a single question for each capability area, to encompass its meaning and intent. A 7-point scale provided a rating mechanism, with 1 – Little or No Emphasis through to 7 – Strong Emphasis. The Researcher included A *Don't Know* option to discourage participants from providing ratings where they were uncomfortable in doing so. Where a participant selected the *Don't Know* option, the Researcher questioned whether this was because they did not understand the question or because they did not feel they could provide a valid response. In all cases, participants selected this option because they did not feel they could provide a valid response.

Section 5 measured the levels of *Executive Buy-In* and Organisational Support for BPM. The Researcher derived questions in this section from literature in related fields including studies to assess employee empowerment, top management support and key aspects of BPM. As with Section 4 of the survey, the Researcher used the *Don't Know* option and a 7-point scale. In this section however the options for the scale were, 1 – Strongly Disagree through to 7 – Strongly Agree. Again, upon questioning, participants only used the *Don't Know* option when they felt they could not provide a valid response to the question.

7.3.3 Workshop Agenda

The workshop occurred after the Researcher had conducted all interviews for the company and had undertaken a first analysis of the interview and survey data. Consequently, the purpose of the workshop was twofold. On the one hand, the workshop served as an opportunity to present the early stage, data analysis for review and comment. On the other hand, the workshop provided an avenue to collect additional information about the practices and issues within the capability areas in a group setting. The Researcher used a *Workshop Agenda* to guide the conduct the workshop a copy of which is in:

Appendix 13.4.5 – Workshop Agenda.

In line with its dual purpose, the workshop format had two major components. In the first part of the workshop, the Researcher presented the preliminary analysis of the interview and survey data. Consequently, this section of the workshop followed a similar format to the *Interview Guide*, covering the same key areas. The remainder of the workshop was dedicated to the identification and discussion of key practices that the company used within each of the capability areas. This component was broken into six segments – one for each of the factors.

7.3.4 Document Review

To supplement the data collected during the interviews, workshop and surveys a review of relevant documentation occurred where possible[81]. The specific documents varied between organisations but, in general, this included reviewing:

- The BPM component of corporate intranet sites and/or portals
- Corporate documents such as business cases and proposals for the *BPM Initiative*, organisation charts reflecting the BPM positions and structure
- Corporate presentations conducted both internally and externally that articulate the progression of BPM or some aspect of it
- Project specific documentation to support progress.

7.4 Data Collection

A consistent approach to data collection across the organisations improves the ability of the Researcher to compare results between them. Similarly, within each case, collecting data from appropriate individuals is important as it improves the validity of data captured. Consequently, this section details the approach to data collection and the selection and invitation of participants.

[81] The documentation reviewed is subject to confidentiality agreements and some documentation was only available to the Researcher to view whilst on Company premises. Consequently, this thesis does not include reproduction of any of the reviewed documentation.

7.4.1 Scheduling and Timing of Case Studies

The duration and timing of the case studies varied dependent on the location of the case organisation and the availability of participants. Two of the cases (Company S and Company U) were located interstate, requiring the Researcher to travel to reach them. In these cases, the Researcher and the Key Contact worked to schedule data collection and the first round of data analysis over the course of a week to minimise the associated travel and accommodation costs. The remaining companies were local to the Researcher, having offices in Brisbane. The Researcher scheduled the data collection with participants from these companies primarily to fit the availability of participants. Table 52 shows the periods over which the case studies occurred.

Company	Case Conducted
S	November 2007 – January 2008
T	August 2007 – December 2007
U	May 2007 – August 2007
V	December 2007 – February 2008
W	February – June 2008

Table 52: Conduct of Longitudinal Cases

7.4.2 Selecting and Inviting Participants

Following agreement from the companies with regard to participation, the Researcher met with the Key Contact to arrange the conduct of the study. In all cases, the Key Contact held a critical BPM role in the company. Furthermore, a number of the Key Contacts had been with the company for an extended time and thus had a solid knowledge of the history of the company, its people and its *BPM Journey*. The Researcher worked with the Key Contact from each company to identify the most appropriate people to invite to participate in the study.

To gather a range of views, the aim was to have between six and eight participants from each organisation. In doing so, the reliance on any one participant for the historical view of the *BPM Initiative* was minimised, with the multiple views acting to provide a more complete and comprehensive view of the

BPM Journey. It was preferable for participants to contribute to all data collection sessions including interviews, workshops and completion of the survey, however, the Researcher recognised that this was not always possible due to the work commitments of some participants[82].

A principal aim was for participants to have a high degree of knowledge and/or involvement in the *BPM Initiative*. Furthermore, a cross-section of employee levels (i.e. executives, management and other key staff) was preferable in order to limit potential bias in responses. Due to the purpose of the studies however, this was secondary to the individual being knowledgeable about the *BPM Initiative*. Similarly, due to the different interpretations of BPM and the potential for both management interpretations to exist within an organisation, consideration of which area of the business the participants were from was also important. Again, a mix of views would act to minimise potential bias from either area, but limited knowledge of the *BPM Initiative* would not provide the insights required for this stage of the research. Consequently, this requirement was also secondary to the level of knowledge the individuals had of the *BPM Initiative*.

Following the identification of potential participants, the Key Contact invited individuals to participate, and provided them with an outline of what participation would entail. Usually, this meant that the *Information Sheet* was, sent directly, or content from the *Information Sheet* formed the basis of the communication between the Key Contact and potential participants. Participants were able to refuse the invitation without any recourse. Table 53 provides a summary of participation for each of the five companies.

[82] Chapter 8 provides further details regarding participation for each company.

Company	Number of Participants	Experience of Participants in BPM Initiative[83]	
		Extensive	Limited
S	7	7	-
T	5	4	1
U	7	6	1
V	7	3	4
W	9	8	2

Table 53: Summary of Participants for all Companies

7.4.3 Approach to Data Collection

The approach to data collection was consistent across all case studies. The majority of interviews occurred at the premises of each company. A small number (5 from 32) however, occurred via telephone due to the location and/or availability of key individuals[84]. The remaining interviews occurred, either in the office of the participant, or in a designated interview room arranged by the Key Contact. All workshops occurred at the premises of the company, in a room coordinated by the Key Contact.

The Researcher received agreement for recording interviews and workshops from all companies. The Researcher also sought individual consent from all participants prior to recording sessions. One participant from Company U did not consent to having the interview recorded. Consequently, the Researcher did not record the workshop for Company U either, as the participant was also present. The Researcher recorded all other interviews and workshops.

Following the interviews and surveys, the Researcher did a preliminary analysis of the data, prior to conducting the workshops. In doing this, the workshops acted to validate the Researcher's interpretation of the interview data.

[83] Chapter 8 provides further details regarding participant demographics.

[84] The location of one participant from Company V was the United Kingdom and a key participant from Company U (located interstate) had resigned and was leaving the company prior to the commencement of the scheduled case study and thus was unable to participate in the interview at the scheduled time of the study and did not participate in the workshop.

Furthermore, the consolidation and representation of data at this point enabled the workshops to become an opportunity to contribute further data in the event that key facts were missing. This ensured a more comprehensive and complete set of data (Pettigrew 1990). An example of the key activities extracted from interview data and presented in the workshop is in:

Appendix 13.4.6 – Mapping Activities to Factors: Company S & U.

A further purpose of the workshops was to identify key practices and issues for each of the capability areas enabling triangulation with the quantitative data gathered during the survey and other qualitative data gathered during the interviews. The Researcher provided participants with a document that contained the definitions of the capability areas for each factor. Using this document as a guide, participants identified the company's major practices, activities or issues in each of the areas. In this section of the workshop, the Researcher captured data directly to a laptop that projected onto a screen within the workshop room. In this way, participants were able to immediately read what the Researcher was recording, providing validation at the point of data capture. By audio recording the workshops, the Researcher was able to revisit any corresponding discussions at a later stage. A copy of the definitions document provided to participants and an example of key practices collected during the workshops is in:

Appendix 13.4.7 – BPM Capability Area Overview

Appendix 13.4.8 – BPM Capability Areas: Key Practices (Sample).

Following the collection of data, the Researcher undertook a period of data analysis. The Researcher collated the data collected from the survey in MS-Excel spreadsheets. This enabled subsequent calculation of descriptive statistics including averages and standard deviation in responses, the calculation of change between the two data points and the graphical depiction of this data for subsequent comparison[85]. The Researcher transcribed the qualitative data collected during the interviews and workshops and subsequently analysed these

[85] The next section provides details on the method of calculating change that the Researcher adopts in this study.

transcriptions for themes and concepts[86]. Following the completion of data analysis, the Researcher prepared a report for each case study organisation. The report provided details of the conduct of the case study, together with a consolidation and interpretation of the data collected throughout the study. The company received the report in draft form, with a request to review and verify the contents and interpretation of the data, prior to the Researcher issuing the final report. An example of the content from a BPM Case Study Report is in:

Appendix 13.4.9 – BPM Case Study Report

7.5 Measuring Change in the Capability areas

The basis of the longitudinal studies was to collect data at more than one point in time to enable the calculation of change between points. In this case, the Researcher collected data (on one occasion) for two defined time points – the *first year* and the *last year* of each organisation's *BPM Initiative*.

Within extant literature, there is debate over the measurement of change with some suggesting that it should not occur at all. Cronbach and Furby (1970, 68) infer four instances where extant studies have historically calculated gains. These include:

(1) Providing a dependent variable for a study

(2) Measuring growth or learning rate that is to be predicted (e.g. what kinds of persons grow (learn) fastest)

(3) Identifying individuals for study or special treatment

(4) Operationalising constructs thought to be significant in a theoretical network.

[86] Chapters 8 and 9 present the outcomes of this data analysis including the use of rich text descriptions, tabulated data, graphical representation and descriptive data.

As proponents of not using change measurement, Cronbach and Furby (1970, 68) suggested that[87]:

> *"…raw change or raw gain scores formed by subtracting pre test scores from post test scores lead to fallacious conclusions, primarily because such scores are systematically related to any random error of measurement..."*

Advocates of measuring change challenge the shortcomings perceived by detractors[88]. In particular, Gottman and Rushe (1993) articulated a number of fallacies about measuring change, based on Rogosa (1988) including:

1) Regression toward the mean is an unavoidable law of nature
2) The difference score between pre and post measurement is unreliable
3) Analysis of covariance is the way to analyse change
4) Correlation between change and initial level is always negative.

According to Bergh and Fairbank (2002), there are a number of ways in which to measure change. The most common of which is the *simple difference approach* that computes the difference between separate instances of the same variable[89]. Other measures include residual scores, component scores and growth curves (Bergh & Fairbank, 2002; Linn & Slinde, 1977). Table 54 (reproduced from Bergh & Fairbank, 2002, 362) reflects the use, strengths and limitations of these methods. The highlighted section of Table 54 indicates the method applied to this study.

[87] Other proponents of not using change measurement as it has been used in the past, or limiting or modifying its use include Edwards (1994), Johns (1981), Linn and Slinde (1977) and Lord (1963).

[88] Other proponents of using change measurement include Allison (1990), Rogosa and Willett (1993), and Zimmerman (1994).

[89] Bergh and Fairbank (2002, 360) show this as "$C_x = X_1 – X_2$, whereby C_x is called a 'change score' and variable X is measured at time period 1 (X_1) and time period 2 (X_2)".

Method	When Used	Strengths	Limitations
Simple difference	High reliability, low correlations.	Intuitive, conceptually simple.	Vulnerability to errors.
Residuals	Predicted change is focus rather than actual change.	Partials correlation between *C* and X_1.	Not measuring actual change.
True change	Conceptual change is in simple difference and *C* and X_1 are correlated highly.	Partials correlation, conceptually intuitive.	Requires high reliabilities and large *n.*
Components	Testing components, not a change in score.	Overcomes problems of simple difference approach.	May not align with some conceptual logics.
Growth curves	Mapping Change.	Form and type of change.	Not applicable to two-wave data.

Table 54: Alternative Methods of Measuring and Testing Change

Thus, whilst not addressing all possible arguments against measuring change, when combined with the purpose of the measurement (i.e. to investigate the role of temporal and contextual issues on *BPM Progression*), taking a *simple difference approach* to measuring change is deemed appropriate for this study.

Consistent with the work of Bergh (1995), in this study the Researcher used the formula $(mean_{year\ 2} - mean_{year\ 1}) / mean_{year\ 1}$ to calculate change in emphasis in capability areas. Calculation of change was between the two data points being the first and the last year of the *BPM Initiative*. This formula allowed the calculation of the *relative* change in emphasis, enabling comparison of change between the companies.

7.6 Chapter Summary

This chapter included details of the design of a series of longitudinal case studies undertaken to refine and confirm the emerging theory of *BPM Progression*. The case studies were longitudinal in order to study the *BPM Journey* over time, allowing comparison of the emphasis an organisation placed on capability areas during the first and last years of the *BPM Initiative*. The inclusion of multiple organisations aimed to increase the generalisability of key findings.

The Researcher designed a number of data collection instruments for use in the longitudinal studies. *Interview Guides* provided the Researcher with a consistent means of interviewing key personnel across the organisations to elicit a chronological view of the *BPM Journeys*. The aim of the *BPM Evolution Survey* was to quantify the level of emphasis the organisation placed on the individual capability areas at two points in time (i.e. the *first year* and the *last year* of the *BPM Initiative*). The *Workshop Guide* on the other hand was to assist the Researcher in presenting first analysis on the interview and survey data and collecting further data regarding the BPM practices in the organisations.

Analysis of the interview and survey data prior to conducting the workshops provided the Researcher with an opportunity to validate and refine the findings arising from the data. During the workshop, in addition to providing feedback and clarification on early data analysis, participants identified the major practices, activities and issues the company had within each capability area. This provided support for the quantitative data captured through the *BPM Evolution Survey*. In analysing the change in emphasis between the first and last years of the *BPM Initiatives*, the Researcher elected to use a simple difference approach.

Whilst this chapter has provided details on the design of the longitudinal studies, the following chapters detail their conduct and outcomes as follows:

Chapter 8 provides a summary of each case, including within case analysis and presentation of key findings from each case.

Chapter 9 presents an in-depth cross case analysis investigating the similarities and differences between the five cases.

Chapter 10 consolidates key findings, integrating them with earlier research and extant literature. From this, the Researcher proposes theory on *BPM Progression* and a conceptual model for measuring *BPM Maturity*. Furthermore, from the experience and insights gained throughout this study, the Researcher proposes a typology for classifying *BPM Initiatives*.

8 Within Case Analysis

The preceding chapter detailed of the design of the longitudinal case studies undertaken to refine the emerging theory on *BPM Progression*. Five companies participated in the longitudinal studies. The aim of this chapter is to present the details of each case, including the progression of their *BPM Initiatives* and the key insights arising from each study in turn. In the subsequent chapter, cross-case analysis will investigate similarities and differences between the companies.

8.1 Chapter Overview

To provide a level of consistency in the presentation of the five cases, the Researcher has chosen to present details for each case using a similar structure. To this end, each company is in a separate section (see Sections 8.2 – 8.6) and each section follows a similar structure being:

8.*n*.1 – Participants in Study
8.*n*.2 – Demographics of the BPM Initiative
8.*n*.3 – First Year of the BPM Initiative
8.*n*.4 – Changes from First to Last Year
8.*n*.5 – Discussion on Progression of the BPM Initiative
8.*n*.6 – Company Summary.

Section 7 provides a summary of the chapter.

8.2 Case 1 – Company S

Company S was a large educational institution with campuses in various Australian cities and towns as shown in Figure 33. Company S also had an

international campus in Ontario, Canada. In 2006, Company S had almost 35,000 students, of which approximately 20,000 studied via distance education and 9,000 attended the main campus. The remaining 6,000 students attended regional campuses. Approximately 5% of graduands over the past 10 years were international students.

Figure 33: Geographical Dispersion of Company S

As an Australian educational facility, Company S received a level of funding from the Federal Government. Due to changes to the funding model, greater competition for students, and a growing number of external students, Company S was looking for alternative ways of operating to improve its sustainability over the next ten years. Table 55 summarises the demographics of Company S.

Company S	Details
Headquarters	Bathurst
Industry	Education
Turnover	$300 million
Employees	3000
Sector	Public
Ownership Structure	Government Funded

Table 55: Company S – Company Demographics

8.2.1 Participants in Study

The case study with Company S occurred from November 2007 to February 2008. The Key Contact from Company S (i.e. the Program Manager) invited participants to the study based on knowledge of the individuals and their involvement and understanding of the *BPM Initiative*. Table 56 shows details of the seven participants from Company S.

Participants	Position	Position Level[90]	Years of Service	Involvement with BPMI
Participant 1	Director – Organisational Development	S,T,O	13	Current, since beginning
Participant 2	Executive Director - ICT	S	25	Current, strong knowledge of history
Participant 3	Deputy Vice Chancellor (Administration)	S	26	Current, strong knowledge of history
Participant 4	Manager – Culture and Change	S	5	Current, strong knowledge of history
Participant 5[91]	Program Manager – Workplace Productivity Program	S	5	Current, since beginning
Participant 6	Director – Service Alignment	S	7	Current, strong knowledge of history
Participant 7	Deputy Vice Chancellor (Academic)[92]	S	25	Current, strong knowledge of history

Table 56: Company S – Participant Details

All seven participants held strategic positions within Company S. One participant had additional tactical and operational roles. All seven participants had a strong knowledge of the *BPM Initiative*, with two participants being involved in the *BPM Initiative* since it began.

[90] S=Strategic, T=Tactical, O=Operational.

[91] Participant 5 was the Key Contact for the case study with Company S.

[92] The Deputy Vice Chancellor (Academic) participated in a one-on-one interview but did not complete the survey or participate in the workshop.

8.2.2 Demographics of the BPM Initiative

The *BPM Initiative* at Company S commenced in 2005 and was ongoing at the time of the case study. Key demographics of the *BPM Initiative* at Company S since its inception are set out in Table 57.

BPMI	Details
Year Commenced	2005
Plans for Continuation	Difficult to gauge real commitment
Structure	
At Beginning	Enterprise Wide Program / Project Based
At Time of Case Study	Enterprise Wide Program / Project Based
Responsibility	
At Beginning	Institutional Development Committee – Vice Chancellor
At Time of Case Study	Institutional Development Committee – Vice Chancellor
Executive Buy-In	
At Beginning	3.4
At Time of Case Study	4.8

Table 57: Company S – BPM Initiative Details

Participants classified the *BPM Initiative* as an enterprise wide program. The Key Contact however, who was also the Program Manager, added further comment suggesting that, whilst the scope of the program was (and always had been) enterprise wide, its execution was predominantly:

> *"...project based, in that we are running a program of projects that include, establishment of a BPM framework, an overall change and renewal framework and an enterprise model. It is an Enterprise wide program, in that we have conducted a review of work processes across the organisation to determine the as-is situation and in that, that effort has involved the development of artefacts that form, at least, the basis of a process architecture..."*

The details in Table 57 showed that the structure and responsibility for the *BPM Initiative* had not changed since the Initiative began. At commencement, the

BPM Initiative had a medium level of *Executive Buy-In*, rating 3.4 on a 7-point scale. Over time, this increased to a rating of 4.8.

During interviews, participants indicated the strategic support for the Initiative stating:

> *"...there was a strategic imperative identified by the university..."*

This indicated that, independent of the level of *Executive Buy-In*, there was an overriding mandate for the *BPM Initiative* within Company S.

The *BPM Initiative* commenced for Company S with a project called the Work Process Improvement (WPI) project. Company S had received external funding from the Australian Federal Government for this project following the successful submission of a grant application. Due to the success of the WPI project, the WPI team applied for additional funding to continue and expand process work within Company S. Subsequent approval of the second funding application saw the commencement of the Workplace Productivity Program (WPP). This WPP enabled the continuation and expansion of the WPI program.

8.2.3 First Year of the BPM Initiative

At the commencement of the *BPM Initiative*, the goals and objectives of the WPI were the improvement of work processes, specifically:

- *"…Intra Faculty, Division or otherwise constituted functions of Company S, i.e., where the contributors to and key stakeholders of a process lie within that organisation.*
- *At the level of interactions among Faculties, Divisions and otherwise constituted groups, where processes cross-organisational boundaries.*
- *At Company S Level, where processes are directly controlled at the executive level..."*

The emphasis Company S placed on capability areas during the first year of the *BPM Initiative* is below in Figure 34.

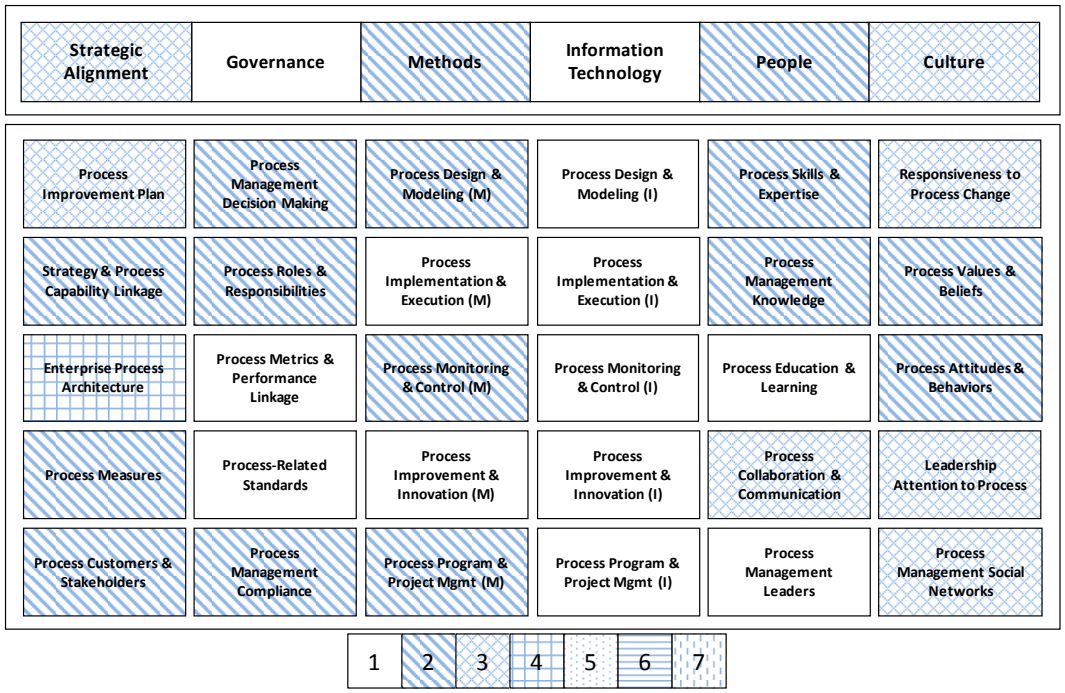


Figure 34: Company S – Emphasis during First Year (2005)

This figure shows that capability areas in the *Information Technology* factor, on average, received lower emphasis than the capability areas from other factors. Conversely, capability areas for *Strategic Alignment* and *Culture* received, on average, higher emphasis than other capability areas. The range in emphasis across the capability areas for each factor is below in Table 58.

Factor	Average Score	Range in Emphasis on Capability Areas	Least Emphasised Capability Area	Most Emphasised Capability Area
Strategic Alignment	3.1	2.3	2.3	4.6
Governance	1.9	1.3	1.2	2.5
Methods	2.0	1.5	1.3	2.8
Information Technology	1.3	0.5	1.0	1.5
People	2.4	1.6	1.8	3.4
Culture	3.0	1.8	2.0	3.8
Range in Factors	**1.8**			

Table 58: Company S – First Year Range in Emphasis

The data in Figure 34 and Table 58 shows that although *Strategic Alignment* and *Culture* had a similar average emphasis, the range in emphasis across the capability areas was higher for *Strategic Alignment* areas. Furthermore, the *Strategic Alignment* capability area of *Enterprise Process Architecture* received the highest emphasis of all capability areas in the first year. The interview data provided additional insights into the higher emphasis on these two areas during the first year.

With regard to increasing the strategic focus of process, participants stated:

> *"...the relatively new Director of Facilities Management had come from an outside environment and wanted to bring a more strategic focus to process management..."*

> *"...it was linked very heavily to the university strategy and in terms of processes..."*

Another participant alluded to an emphasis on developing an overarching process architecture or framework early in the project with the comment:

> *"...we'd never reviewed processes before (...) things were being duplicated in the existing processes and we needed a way to actually see if we could eliminate that duplication..."*

According to one participant, the arrival of a new Vice Chancellor wanting to promote a one-University culture provided momentum and a link between strategy and culture, stating:

> *"...particularly with the arrival of the new Vice Chancellor and his considerable emphasis on one-university as a really important part of our mode of operating, that's given a lot of momentum to this. That whole notion of one-university was really crucial within the current strategy..."*

The emphasis on organisational development and cultural aspects was evident in participant comments including:

"...there's a very strong connection between organisational development and BPM, philosophically and in our outcomes orientation..."

"...the other factor in pushing this was our organisational development unit..."

The next section considers the changes that occurred from the first to the last year of the *BPM Initiative*.

8.2.4 Change from First to Last Year of the BPM Initiative

The second data collection point for the longitudinal studies was the last year of the *BPM Initiative*. Figure 35 shows the emphasis Company S placed on the capability areas in the last year of the *BPM Initiative*.

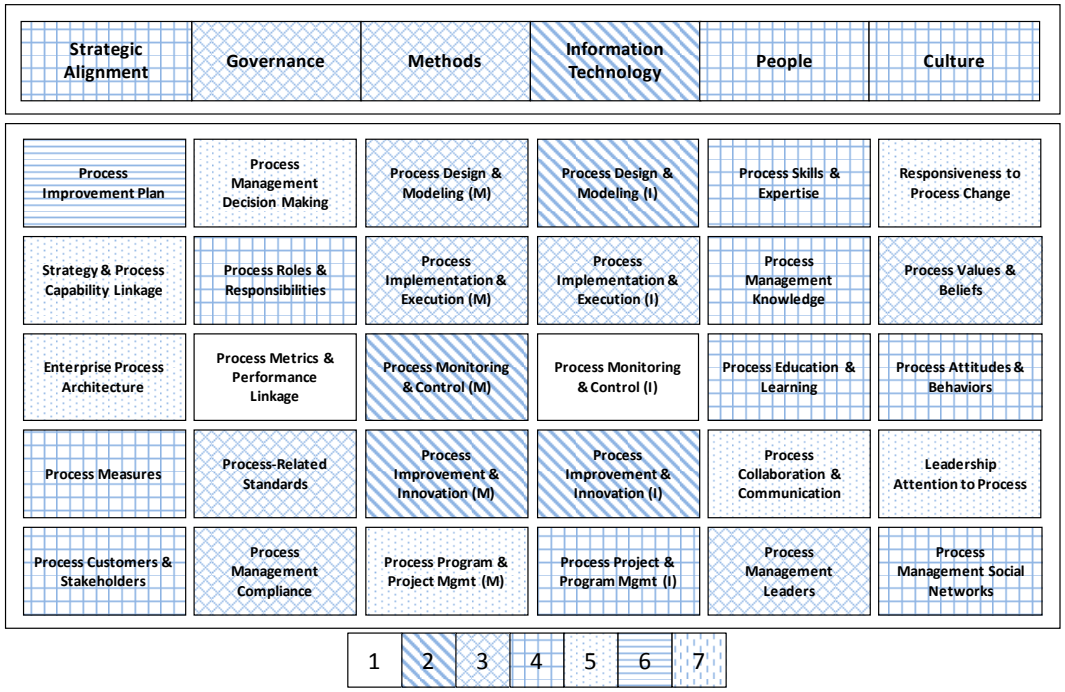


Figure 35: Company S – Emphasis during Last Year (2007)

Figure 35 shows that the higher emphasis on capability areas from the *Strategic Alignment* and *Culture* factors was also evident in the last year, however, there was also a higher emphasis on capability areas from the People factor. The capability areas from the *Information Technology* factor were still, on average, the least emphasised of all capability areas. The data in Table 59 also shows

that the highest range in emphasis was in the capability areas of *Governance* and *Information Technology*.

Factor	Average Score	Range in Emphasis on Capability Areas	Least Emphasised Capability Area	Most Emphasised Capability Area
Strategic Alignment	4.3	1.7	4.3	6.0
Governance	3.0	3.3	1.7	5.0
Methods	3.5	2.5	2.5	5.0
Information Technology	2.5	3.2	1.0	4.2
People	4.4	1.9	3.3	5.2
Culture	4.8	1.7	3.8	5.5
Range in Factors	**2.3**			

Table 59: Company S – Last Year Range in Emphasis

The continuing higher emphasis on *Strategic Alignment* was evident in comments from participants including:

> *"...the whole idea of process aligned to overall strategy within the university has really gained momentum in the last couple of years and it's really been consolidated now..."*

Similarly, comments from participants reflected the increase in emphasis placed on *People* capability areas:

> *"...there was an underlying challenge of how do we get the overall university buy in for this? How do we bring people along and get them to appreciate it..."*

> *"...there's a deep, quite a deep psychological impediment to people working on collaboration organisation wide projects..."*

Comments from participants also reflected the need to increase emphasis placed on *Culture* capability areas over the course of the *BPM Initiative*:

"...every time we tell people they need to change we encounter resistance because it's painful for them..."

"...there was this big gorge between the people who were trying to do the advocating for business process management and the people who were really our main client base..."

"...the inhibitors were more on the organisational development side of things (...) like what has been people's inherent training and understanding and knowledge base..."

The effect of this increase in emphasis was evident in comments including:

"...more and more there's a great deal of support (…) originally we had to struggle to get people to accept the notion of WPI..."

"...the Organisational Development unit was very important with that in terms of communicating it and building a common shared understanding..."

Change in Emphasis

Figure 36 shows the change in emphasis from the first year to the last year.

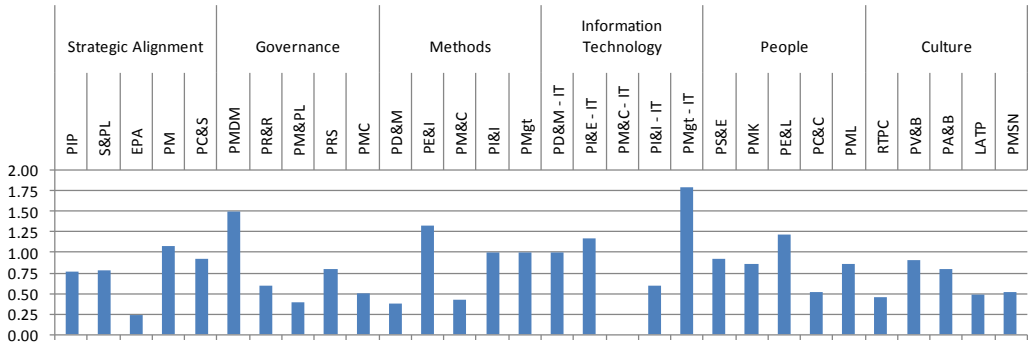


Figure 36: Company S – Change in Emphasis on Capability Areas

The change in Figure 36 shows that the areas reflecting the greatest increase in emphasis were *IT – Project and Program Management* and *Governance – Process Management Decision Making*. The impetus for increasing attention on

building capability to support a systemic approach to managing projects was evident in comments including:

> *"...things having been crystallised in the WPI project, stimulated by the previous executive director DIT (…) had quite a role in drawing attention to some of that sort of holistic project focussed work that needed to be done..."*

> *"...there was an emphasis from the senior management wanting to get more effective management systems..."*

> *"...there was a sense that we needed to have a more systematic approach to these sort of major projects..."*

These comments alluded to a need to increase the overall approach to the management of process projects, including decision-making and the management of information. The high emphasis given to capability areas of *Strategic Alignment – Process Improvement Planning*, which received the highest level of emphasis, and *Methods – Process Project and Program Management* (see Figure 35) supported this view.

8.2.5 Discussion on Progression of the BPM Initiative

In discussing the progression of the *BPM Initiative*, participants made key points regarding:

- Matching progression strategies to organisational context
- Negative affect of contextual variables
- Positive affect of contextual variables.

Further details are in the following sections.

Match Progression Strategies to Organisational Context

During the *BPM Initiative*, there were a number of influences on progression. With regard to the actual progression of the *BPM Initiative*, one participant indicated:

> *"...some parts of the sequence have been very determined, but that doesn't mean that they've been sequential (...) it is very much more like one step forward, two steps back, one step forward, two steps back..."*

This indicated that Company S recognised the need to accept that progression was not always going to be in a forward direction. Furthermore, this statement indicated that even with deliberate planning, there was an element of progression that was reactive.

Another key insight from Company S was with regard to the adoption of best practice. During an interview, a participant indicated:

> *"...an organisation needs to be very careful in assessing the applicability of things (…) it doesn't matter whether it's the business world or industry or management theory or whatever (...) it doesn't mean that there aren't a lot of things that you can benefit from but you've got to put time into thinking how the things would actually operate in a university setting..."*

Another participant stated:

> *"...you need to understand the strengths and weakness of the thing otherwise you do find yourself in the situation of trying to use it in situations where it is not appropriate or not understanding that this isn't the absolute solution to all life's problems..."*

These statements showed the importance of adapting practices to the organisational context. Such statements challenge, or at least qualify, the application of best practice, with regard to progressing *BPM Initiatives*.

Negative Affect of Contextual Variables

Within Company S, participants highlighted the impact of two contextual variables being the geographic dispersion of the company and the availability of suitable resources. Participants stated that there was a relationship between the two variables, indicating that:

> *"...the disparate nature of the organisation, its regional nature, has a direct influence from a logistical perspective in terms of resources, and we certainly had direct problems in resourcing the whole project..."*

With regard to the availability of suitability of staff resources, participants stated:

> *"...there's a much more pragmatic factor and that is the university found it very hard to employ, on a permanent basis, people with some of the expertise we needed to undertake these projects..."*

> *"...the biggest constraint was staff resources (...) the demands on the specialist staff in particular areas, who have the systems knowledge, the technical skills and the organisational knowledge (...) that's a major problem (...) so we're now trying to develop strategies for addressing that in 2008..."*

The impact of the lack of staff resources was also evident in a comment by one participant who indicated:

> *"...we've had to scale back or reprioritise work because we haven't got enough people to do what was on the original list..."*

This showed that the progression of the *BPM Initiative* could be constrained by the contextual environment in which a company operates. In this case, the regional dispersion of the company resulted in difficulty attracting appropriately skilled resources, leading to a reduction in the progression.

Positive Affect of Contextual Variables

A number of aspects assisted the progression of the *BPM Initiative* including the availability of funds and the dedication of leaders. With regard to the availability of funds, participants made two points. One was that Company S was choosing to undertake the *BPM Initiative* while they were in a solid financial situation. For example, participants stated:

> *"...the other obvious factor is the university is in a very healthy financial position (...) achieving all these things when you're doing it in order to dig yourself out of some sort of financial hole is completely different from choosing to do it when you're in a strong financial position..."*

> *"...we are in a position of being able to be proactive because we were making decisions from a position of relative strength, particularly financial strength (...) we're not doing this because we're facing bankruptcy or because we haven't been doing well, we're actually building on the fact that we have done well..."*

These comments showed that participants saw the timing of the *BPM Initiative* as a positive aspect. The other funding aspect was in relation to the dedicated funding available through the WPI and WPP projects, with a participant stating:

> *"...not many people get the level of support to do what we've done. To pack this much money into it is unbelievable..."*

With respect to the commitment of the leaders of the program, participants made a number of comments about both the specific leadership of the program and immediate implementation team including:

> *"...it could've been a challenge, if we didn't have a good facilitator or someone to put this together, we wouldn't have been able to do it. You need a good facilitator or a good person to collect it and understand it..."*

> *"...it had to have people in the middle, and they were about leadership and management development, organisational and staff performance, and continual professional development..."*

> *"...just the way that we came together as a crew and that synchronicity..."*

At a more general level, it was about the executive support for the program, included in statements such as:

"...the whole thing about senior management buy-in and then that filtering down is critical..."

"...it was driven by the executive so it was going to happen..."

These statements show the necessity of both a general commitment from executives to the Initiative as well as to the dedicated management of the implementation.

8.2.6 Company S Summary

The *BPM Initiative* within Company S commenced in 2005 with an enterprise wide scope, using a project-based approach to implementation. From 2005 to 2007, the structure of the *BPM Initiative* had not changed, although the emphasis on capability areas had shifted, over this time.

In the first year of the *BPM Initiative*, a desire to create a one-University culture and to align process and strategy reflected in an emphasis on *Strategic Alignment* and *Culture* capability areas. Over time, the emphasis on *Strategic Alignment* and *Culture* capability areas remained high and the emphasis on developing *People* capability areas had increased, potentially in relation to a recognised issue with attracting suitably skilled staff. Due to the cultural impediments to process change that existed, Company S recognised that the *BPM Initiative* shared a close relationship with the Organisational Development area. Throughout the *BPM Initiative*, the emphasis on *IT* was consistently low.

The highest rating capability areas in the *last year* and the biggest movement in capability areas over time, was in those areas affecting the management of process projects and information. This was in response to senior management wanting to improve the systemic management of process information and projects.

Progression of the *BPM Initiative* was constrained at times by the geographic dispersion of Company S and the availability of suitably skilled staff. The availability of funding and the dedication and support of leadership was important to the progression of the *BPM Initiative*.

8.3 Case 2 – Company T

Company T was a large provider of transportation to both individuals and businesses within Australia. Although predominantly Queensland based, with a myriad of centres throughout regional Queensland, Company T had a presence in all states of Australia. Company T was a Government Owned Corporation (i.e. a GOC), being owned by the Queensland State Government but having a commercial focus. In 2007, Company T had a turnover of over $2 billion dollars and a workforce of more than 13,000 employees. The demographics of Company T are set out in Table 60.

Company T	Details
Headquarters	Brisbane
Industry	Transport
Turnover	$A2 billion
Employees	13,000
Sector	Public
Ownership Structure	Government Owned Corporation

Table 60: Company T – Company Demographics

8.3.1 Participants in Study

The case study with Company T occurred over the period of August 2007 to February 2008. The Key Contact from Company T invited participants for the study based on knowledge of the individuals and their involvement and understanding of the *BPM Initiative*. Table 61 shows the details of the five participants from Company T.

Participants	Position	Position Level[93]	Years of Service	Involvement with BPMI
Participant 1[94]	Business Architect / Process Design Adviser	S/O	10	Current, since beginning
Participant 2	General Manager	S	15	Current, limited knowledge of history
Participant 3	Business Process Analyst	O	9	Current, strong knowledge of history
Participant 4	Manager – Six Sigma	S/O	16	Current, strong knowledge of history
Participant 5	Risk & Compliance Coordinator	O	15	Current, strong knowledge of history

Table 61: Company T – Participant Details

Table 61 shows the five participants from Company T were from two levels of the organisation, strategic and operational. All five participants were currently involved in the *BPM Initiative*. Four of the five participants had a strong knowledge of the history of the *BPM Initiative* and one had a limited knowledge of its history. One of the participants had been involved with the *BPM Initiative* since its inception in 2000.

8.3.2 Demographics of the BPM Initiative

Company T commenced its *BPM Initiative* in 2000. Table 62 shows the key demographics of the *BPM Initiative* at Company T since its inception.

[93] S=Strategic, T=Tactical, O=Operational.

[94] Participant 1 was the Key Contact for the Case Study.

BPMI	Details
Year Commenced	2000
Plans for Continuation	Ongoing
Structure	
At Beginning	Enterprise Wide Program / Project Based
At Time of Case Study	Enterprise Wide Program / Pockets of Excellence
Responsibility	
At Beginning	Strategy Unit – Chief Strategy Officer
At Time of Case Study	Shared Services Unit – Group General Manager Shared Services
Executive Buy-In	
At Beginning	2.5
At Time of Case Study	3.2

Table 62: Company T – BPM Initiative Details

The details in Table 62 show that the structure and responsibility for the *BPM Initiative* changed over time.

Company T's impetus for implementing a *BPM Initiative* was a significant change in its mode of business operation brought about by a change in legislation in 1999. Until this time, the company operated as a monopoly provider of transportation services for the Queensland State Government. This change in legislation had resulted in the introduction of competition to this market. This meant the company became a Government Owned Corporation (GOC) required to operate as a commercial entity within the deregulated marketplace. Consequently, Company T underwent a significant change in the strategic and operational foundations of the organisation. According to participants:

> *"...that was their whole movement from a monopoly into a competitive market. That required I guess the process architecture (...) or the start of a process architecture..."*

The subsequent internal reorganisation led to the instigation of the *BPM Initiative*. As one participant explained:

"...from there, the quality unit had a bit of a revamp and it became the Improvement Unit and it started to look at a bit broader, it started to look at end to end process..."

Over time, the scope of the *BPM Initiative* remained as an *enterprise-wide program.* The approach to implementation, however, changed from being project based to having a recognised centre of excellence. Furthermore, the responsibility of the *BPM Initiative* moved from within the Strategy Unit to being within the Shared Service Unit.

Executive Buy-In at the beginning of the *BPM Initiative* was low, being 2.5 on a 7-point scale. Despite this, there was a recognised mandate to implement a *BPM Initiative*, as indicated by a participant's comment:

"...that was around 2000 (…) we had a new chief strategist starting with us and he was given the mandate from the CEO to change the organisation towards a more process centric organisation..."

The level of *Executive Buy-In* increased marginally to a level of 3.2 during the last year. There was a feeling by participants that the mandate for the *BPM Initiative* no longer existed however, seen in comments such as:

"...it's definitely not pushed from the top level down (...) not any more..."

"...unless it's actually mandated on the corporate level (…) it will never be picked up properly..."

8.3.3 First Year of the BPM Initiative

The emphasis Company T placed on capability areas during the *first year* of the *BPM Initiative* is set out in Figure 37.

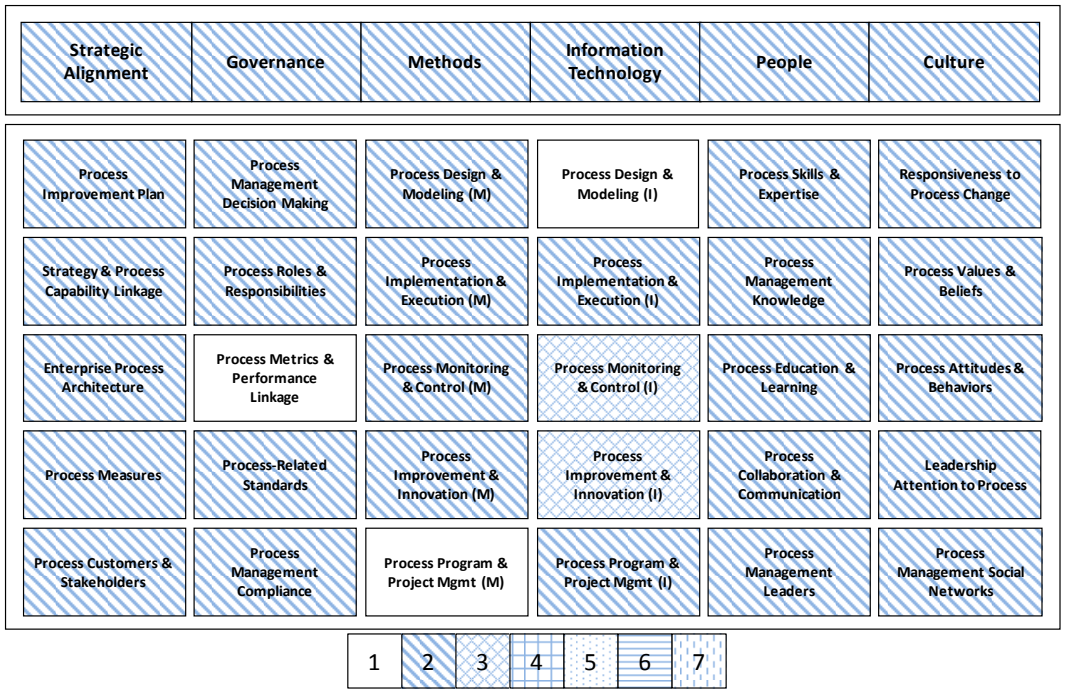


Figure 37: Company T – Emphasis during First Year (2000)

This figure shows little variation in the emphasis placed on the capability areas across different factors during the first year. Only two capability areas outside of *IT* reflected an emphasis other than a 2 on a 7-point scale with 7 being high emphasis. Conversely, three capability areas of IT had a score other than two giving this factor the greatest variation across the capability areas and the greatest range in emphasis as seen in Table 63.

Factor	Average Score	Range in Emphasis on Capability Areas	Least Emphasised Capability Area	Most Emphasised Capability Area
Strategic Alignment	2.1	0.9	1.8	2.7
Governance	2.3	0.7	1.8	2.5
Methods	2.2	0.7	1.8	2.5
Information Technology	2.4	2.0	1.0	3.0
People	2.4	0.7	2.0	2.7
Culture	2.6	0.4	2.3	2.7
Range in Factors	**0.5**			

Table 63: Company T – First Year Range in Emphasis

Insights into the early focus on *IT – Process Implementation and Execution*, and *IT – Process Monitoring and Control* came from participants and the early drivers of the *BPM Initiative*. In addition to building a framework, the *BPM Initiative* was also output driven due to the heavy compliance focus of the organisation although this had moved more toward being driven by performance and profit in recent times. According to participants:

> *"...it was output driven, it was about putting in place a business process enterprise (...) it was tool driven..."*

> *"...compliance is losing its shine. It's really now performance, that's really, profit and performance is now, is the thing..."*

8.3.4 Change from First to Last Year of the BPM Initiative

Looking at the data from the *last year* of the *BPM Initiative* (i.e. 2007), Figure 38 again shows a greater level of volatility at a capability area level, despite seeming consistency at a factor level.

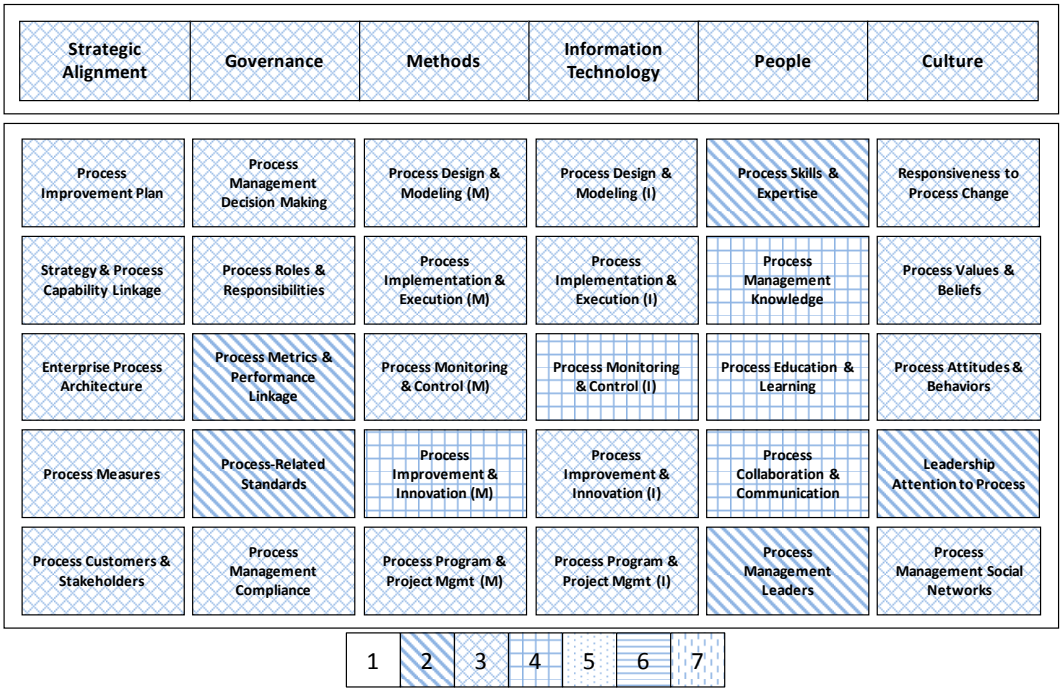


Figure 38: Company T – Emphasis during Last Year (2007)

This figure shows that three of the most emphasised areas were from the *People* factor. Conversely, two of the least emphasised areas were also from the *People* factor. Participants reflected on the higher emphasis when discussing the internal BPM community, stating the purpose of the group as being:

> *"...to knowledge share, to feedback what, how well they are going within their businesses with implementing business process management or business process improvement..."*

This comment indicated that Company T was actively trying to use a distributed internal structure to spread knowledge of BPM throughout the company. In discussing enablers of progression, participants also indicated:

> *"...we established the different training courses, the modelling training courses and the business process review training courses, the Six-Sigma training courses and the Lean manufacturing training courses..."*

Statements such as this showed that developing and conducting training courses was important to the *BPM Initiative*. At the same time, they showed the use of complementary process improvement methods, including Lean and Six Sigma, within Company T.

Participants, when discussing the enablers of progression, also mentioned collaboration, stating:

> *"...and then collaboration was a big one..."*

The higher emphasis on some of the capability areas from the *People* factor resulted in this factor having the greatest range in emphasis as seen in Table 64.

Factor	Average Score	Range in Emphasis on Capability Areas	Least Emphasised Capability Area	Most Emphasised Capability Area
Strategic Alignment	3.4	0.5	3.0	3.5
Governance	3.0	1.2	2.3	3.5
Methods	3.4	1.0	3.0	4.0
Information Technology	3.5	1.0	3.0	4.0
People	3.6	2.0	2.5	4.5
Culture	3.4	1.0	2.8	3.8
Range in Factors	**0.6**			

Table 64: Company T – Last Year Range in Emphasis

The low emphasis on the capability areas of *People – Process Leaders* and *Culture – Leadership Attention to Processes* was consistent with further changes in the executive and senior management ranks. This was evident in comments such as:

> *"...other than Executive X they don't have a deep understanding of process, the importance of managing processes (…) some of the new people coming in seem to be fairly non process oriented, which is horrifying because you'd think we'd get better, not worse..."*

> *"...it's going to be very interesting to see what the new CEO is like, because the chairman of the board doesn't understand it..."*

These statements show the inability to progress the capability areas due to changes occurring within Company T.

Change in Emphasis

Figure 39 shows the change in emphasis across the capability areas from the first to the last year.

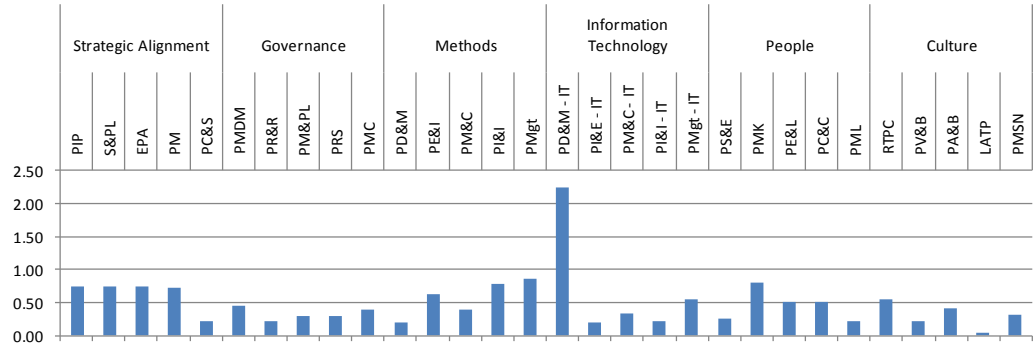


Figure 39: Company T – Change in Emphasis on Capability Areas

This figure shows the highest change in emphasis on *IT – Process Design and Modelling*. This change reflected the acquisition and implementation of System Architect for process modelling within Company T.

Select capability areas from the *Strategic Alignment*, *Methods* and *People* factors also showed a high change in emphasis relative to other capability areas. The emphasis on *Strategic Alignment* reflected on-going changes to the business model. This was evident in comments such as:

> *"...we are still doubting ourselves and each other because we're now reshaping the whole organisation again..."*

> *"…we'll see if all of the work, which has been done in the last five years, is going to be undone (...) I have fears that it will be..."*

The changes in the business model linked to the recent changes in the executive within Company T. This shows that changes within the environment can have the affect of creating a forward and backward momentum to progression.

8.3.5 Discussion on Progression of the BPM Initiative

In discussing the progression of the *BPM Initiative*, participants made key points regarding:

- Iterative approach to BPM
- Short-term Gain versus Long-term Sustainability
- Information Technology versus Business.

Further details are in the following sections.

Iterative Approach to BPM

Within Company T, participants indicated the need to take an iterative approach to progression, stating:

> *"...we can see where it needs to go, but the journey is very stressful (...) to try and get to a point where you get all the parties working together (...) and get them all thinking the same way..."*

This statement showed that one difficulty to overcome is having people within the company thinking in the same manner. There was also difficulty in the ability of individuals to digest the changes however, indicated in comments such as:

> *"...get ready to wean them onto the next step, but don't give them too much too soon (…) you've got to be able to take a piece, think about it, have a go at using it, and it might be two years later before the penny drops..."*

> *"…the second time around you actually get a lot further, you can tell that they've learned, but if you give them too much too soon it's no good..."*

These comments showed that it was necessary to have people thinking the same way, but it was also necessary to break the journey down into small steps so that there was only a small amount of change within any given period. These last statements also indicated that the actual step taken might not be one that Company T ultimately needed to take but rather that the step was in the right direction and of a magnitude that was digestible to people within Company T.

Short-term Gain versus Long-term Sustainability

Company T commenced its operations due to a change in legislation changing the company from a monopoly government provider to being required to operate within a commercial market. Consequently, there was a focus within Company T on gaining short-term financial improvements. Participants indicated:

> *"...all the pressure is on immediate, bottom line returns (…) managers are under intense pressure to drive down costs immediately, with no view of the output delivered for that cost reduction..."*

> *"...the other challenges for any BPM focus, is the focus on short term gains only (...) quick wins (...) we've got to satisfy that need for ROI..."*

These statements highlighted the driver within Company T, namely, to focus on short-term financial gains. Despite this, participants within Company T recognised a conflict between making sustainable progress with the *BPM Initiative* and achieving the short-term gains. One participant indicated:

> *"…they don't understand that if you want financial outcomes you have to manage the lead processes that deliver those outcomes…"*

Another participant indicated a further consequence of the short-term focus for Company T was:

> *"...the process to deliver long term sustainable performance is disappearing, so you get a culture that is adverse to creativity. It's adverse to process management and improvement, except in the lowest level of risk aversion..."*

These comments showed that within Company T the short-term focus on outcomes reduced the sustainable performance of processes over time. This was due to the increased risk aversion leading to a lack of management around the core processes and the future improvement and innovation of the processes.

Information Technology versus Business

Within Company T, there was a recognised tension between IT and Business with regard to the ownership and understanding of BPM. Participants indicated:

> *"...we said it's business architecture, but the business didn't take any ownership of it because they thought it was purely IT (...) they didn't understand really what it was..."*

"...we had to stop (…) even calling it, Staffware or whatever, because they just related it back to IT too..."

A consequence of the lack of ownership was evident in the assignment of business staff to projects. Participants indicated:

"…we got given people who were not wanted, you know, nobody would miss them for four weeks. Instead of getting the right ones…"

These comments showed the difficulty the BPM team faced in getting the business areas to commit to process improvement projects. Consequently, the BPM team within Company T focused on developing ways of getting support from the business, including:

"…we tried anything and everything (…) the tool was owned by ISD and we went as far as moving it out of ISD ownership into the business improvement ownership and people still didn't get it…"

"...we developed a glossary of BPM definitions. We put together what we mean by business improvement, including how many types of projects of business improvement are there in the organisation (…) we also defined business process management. The concept, what it is all about, its relationships with all the other management concepts in the organisation, so that we were able to communicate to the business what BPM is all about and where it fits..."

This showed the necessity within Company T of communicating the BPM concept and the role the Initiative played within the organisation.

8.3.6 Company T Summary

During the time from 2000 to 2007, Company T's *BPM Initiative* changed in structure and responsibility. The scope of the initiative remained as an enterprise wide program however the implementation approach changed from being project based to being a centre of excellence. Furthermore, the responsibility moved from the Strategy Unit with a mandate for implementation, to the Shared Service Unit where the mandate for implementation was not as notable as previously.

During early stages of implementation, Company T consistently distributed emphasis applying similar levels to over 80% of the capability areas. Early emphasis was on *IT* for the execution and control of processes, stemming from a compliance background. Over time however, Company T targeted emphasis to specific areas, in response to changes in the needs of the organisation.

Capability areas in the *People* factor received higher emphasis due to the constraints placed on progression. This reflected in the need to overcome issues between the business and *IT* areas, and the iterative approach to implementation of the *BPM Initiative*.

Company T also found their move from a monopoly to a competitive environment led to a short-term focus that acted to counter the long-term sustainability of the initiative. Changes to the executive and another subsequent organisational structure were a further consequence of the move. These changes reflected in the level of *Executive Buy-In* increasing only marginally and participants raising concerns about the affect on the progression of the *BPM Initiative*.

8.4 Case 3 – Company U

Company U was a stand-alone agency within a large federal government portfolio providing four key services to individuals and companies from within Australian and abroad[95]. Within Australia, Company U was a monopoly service provider however, due to increasing global demands Company U worked closely with similar centres in other countries including the United States, the United Kingdom, Korea, China and New Zealand. Increasingly these international offices, that offered the same services for different countries, were becoming competition to Company U.

Company U was located in Canberra. In addition to the four key business units, Company U had an IT department and a Customer Operations Group that dealt with common administrative processes for the four business units. There was also a small team of human resource and finance staff (although this team had a

[95] Conceptually this structure is similar to a subsidiary of a parent company.

largely facilitation role as the provision of human resource and finance services was outsourced). In 2006, Company U had a turnover of $115 million and a staff of approximately 1,000. The demographics of Company U are summarised in Table 65.

Company U	Details
Headquarters	Canberra
Industry	Innovation, Science and Technology
Turnover	$A115 million
Employees	1,000
Sector	Public
Ownership Structure	Agency in Federal Government Portfolio

Table 65: Company U – Company Demographics

8.4.1 Participants in Study

The case study with Company U occurred over the period of May 2007 to August 2007. The Key Contact from Company U invited participants to the study based on knowledge of the individuals and their involvement and understanding of the *BPM Initiative*. The details of participants are set out in Table 66.

Participants	Position	Position Level[96]	Years with Company	Involvement with BPMI
Participant 1[97]	Business Process Architect	O	1	Current, limited knowledge of history
Participant 2	Director, BIMS Project Delivery	S,O,T	18	Current, strong knowledge of history
Participant 3	Business Analyst	S,T	10	Current, since beginning
Participant 4	Director, Strategic Development and Quality Management	S	5	Current, strong knowledge of history

[96] S=Strategic, T=Tactical, O=Operational.

[97] Participant 1 was the Key Contact for the case study with Company U.

Participants	Position	Position Level[96]	Years with Company	Involvement with BPMI
Participant 5	Assistant Director, BPM	S,T	9	Current, since beginning
Participant 6	Solutions Delivery Manager	S,O	11	Current, since beginning
Participant 7	General Manager - COG	S	4	Current, since beginning

Table 66: Company U – Participant Details

Participants came from the two areas of the organisation involved with the *BPM Initiative* – the IT department and the Customer Operations Group (COG). Table 66 shows that one participant held roles that were strategic, operational and tactical, two held strategic and tactical roles, one held roles that were strategic and operational, two held only strategic roles and one held an operational role. Four of the participants had been involved with the *BPM Initiative* since it started. Another two were actively involved in the Initiative and had a strong knowledge of its history. The remaining participant was involved with the initiative but had a limited knowledge of its history, having been with the company for only a year.

8.4.2 Demographics of the BPM Initiative

Company U commenced its *BPM Initiative* in 2003. Prior to this time, the company had dabbled in continuous improvement projects from as early as 1995. Participants indicated:

> *"...way back when I first started with continuous improvement (CI) (...) the precursor of BPM, there was a lot of CI projects being conducted around the place (…) they looked at a very fine level, at specific processes. There wasn't the bigger picture view which is important (...) for some reason CI fell out of favour and seemed to disappear..."*

> *"...most of what we'd been doing before then was little bits of pieces, mapping the process looking for ways to improve things..."*

This showed that, within Company U, an ad hoc approach to continuous process improvement had not been sustainable.

Table 67 summarises the key demographics of the *BPM Initiative* at Company U.

BPMI	Details
Year Commenced	2003
Plans for Continuation	Ongoing
Structure	
At Beginning	Project Based
At Time of Case Study	Project Based/Pockets of Excellence
Responsibility	
At Beginning	Line of Business – General Manager: Customer Operations Group
At Time of Case Study	IT Department – Chief Information Officer
Executive Buy-In	
At Beginning	4.1
At Time of Case Study	4.3

Table 67: Company U – BPM Initiative Details

The details in Table 67 show modification to the structure and responsibility of the *BPM Initiative* since inception.

An internal management analysis of the operations of the company in 2002 recommended that the principle administrative areas should have a common base. Thus, the Customer Operations Group (COG) was formed in 2003 and with it came, the appointment in 2004 of a new General Manager (GM) from outside the company. This reflected in participant comments including:

> *"...the organisation has recognised that through a restructure a couple of years ago when we bought the customer operations group..."*

Consequently, the *BPM Initiative* within Company U was narrow in focus, applied to a single business unit (being COG) and not to the entire organisation. Participants involved in the *BPM Initiative* stated:

> *"...we don't have that overall, overarching BPM philosophy by any means (...) Executive X tried a number of times over his three years here to have a corporate BPM and had some direction coming out of that area and, but that's never got off the ground. I think even getting a COG BPM section called BPM is the biggest step in doing that..."*

> *"...because it's not an overt step outside of my group it doesn't happen corporately the same way it happens within my group..."*

Consequently, at the beginning of the *BPM Initiative*, responsibility for the Initiative lay with the General Manager of the applicable business unit. Shortly prior to the case study however, the departure of the GM had resulted in responsibility shifting to the IT Department in an attempt to progress the *BPM Initiative* in other areas of the business. The relocation to IT resulted from the high reliance on IT projects during the early stages of the *BPM Initiative*.

At the beginning, the *BPM Initiative* had moderate levels of *Executive Buy-In*, rating 4.1 on a 7-point scale. There was a slight increase in the level of *Executive Buy-In* over time.

The next sections detail the emphasis placed on the capability areas during the first and last year of the *BPM Initiative*, including the change between these two points.

8.4.3 First Year of the BPM Initiative

Figure 40 shows the level of emphasis that Company U placed on the capability areas in the *first year* of the *BPM Initiative*.

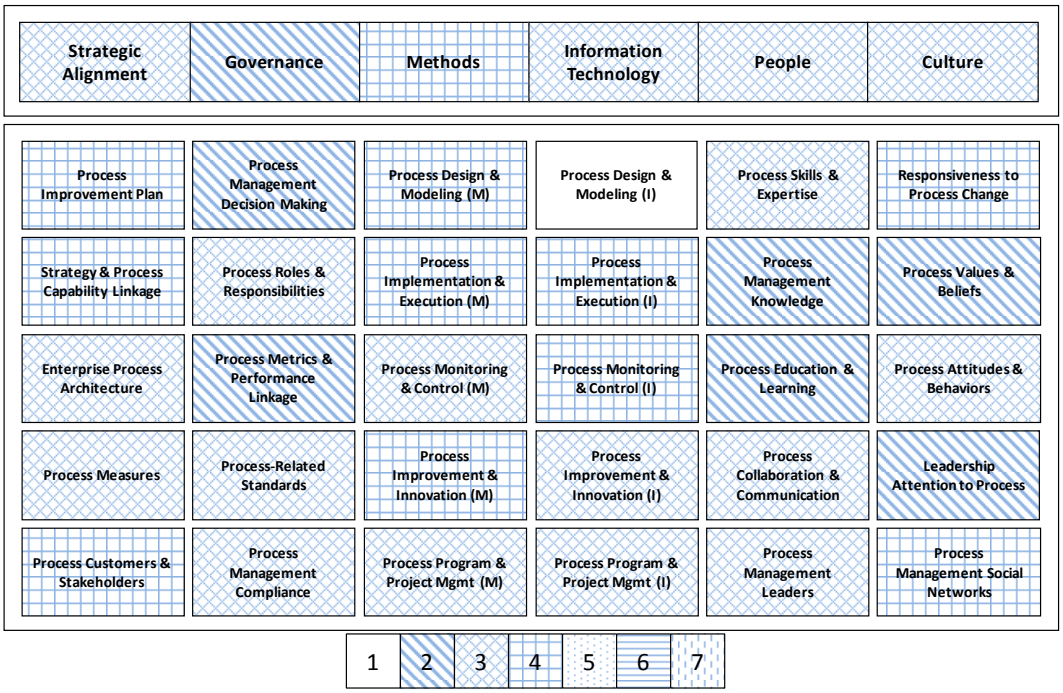


Figure 40: Company U – Emphasis during First Year (2003)

This figure shows that the capability areas in the *Methods* factors received, on average, more emphasis than those of other factors. This factor also included the most emphasised capability area in *Process Design and Modelling*. Participants supported the focus on the *Methods* factor, with comments including:

> *"...we are really driving ourselves hard to see how we can improve our processes..."*

The distribution of emphasis across the remaining factors was consistent except for the *Governance* factor, which received the lowest emphasis. Participants provided insights into this, indicating:

> *"...to make sure that you have the right processes, the right technology, the right tools, the right training, the right skills to be able to do your job effectively every day..."*

> *"...you confidently have to keep focus on balancing out people, process and technology..."*

These comments indicated a focus on balancing the attention given to capability areas across factors of *IT*, *People*, *Methods* and *Strategic Alignment* in particular. Table 68 showed the range in emphasis across the factors and capability areas.

Factor	Average Score	Range in Emphasis on Capability Areas	Least Emphasised Capability Area	Most Emphasised Capability Area
Strategic Alignment	3.7	1.2	3.0	4.2
Governance	2.8	1.2	2.0	3.2
Methods	4.1	1.1	3.5	4.6
Information Technology	3.3	3.4	1.0	4.4
People	3.0	1.6	2.2	3.8
Culture	3.2	2.0	2.2	4.2
Range in Factors	**1.3**			

Table 68: Company U – First Year Range in Emphasis

Table 68 shows that the range in emphasis within the *IT* capability areas had greater variance than did other factors. The capability area of *IT – Process Design and Modelling* received the lowest emphasis of all areas. Participants provided insights into the higher focus on other *IT* capability areas when discussing the drivers of the *BPM Initiative*, stating:

> *"...the electronic office technologies and trying to get some automated workflow as well, so that was really a very big move and a very big change management exercise for the organisation..."*

> *"...e-commerce was a very big driver and also leading to a paperless office, which was a big driver..."*

> *"...essentially moving to more of an electronic environment was a big driver..."*

These comments showed that investigating the automation and workflow of processes was a major impetus of early efforts of the *BPM Initiative*.

8.4.4 Change from First to Last Year of the BPM Initiative

Figure 41 shows the level of emphasis Company U placed on the capability areas in the *last year*.

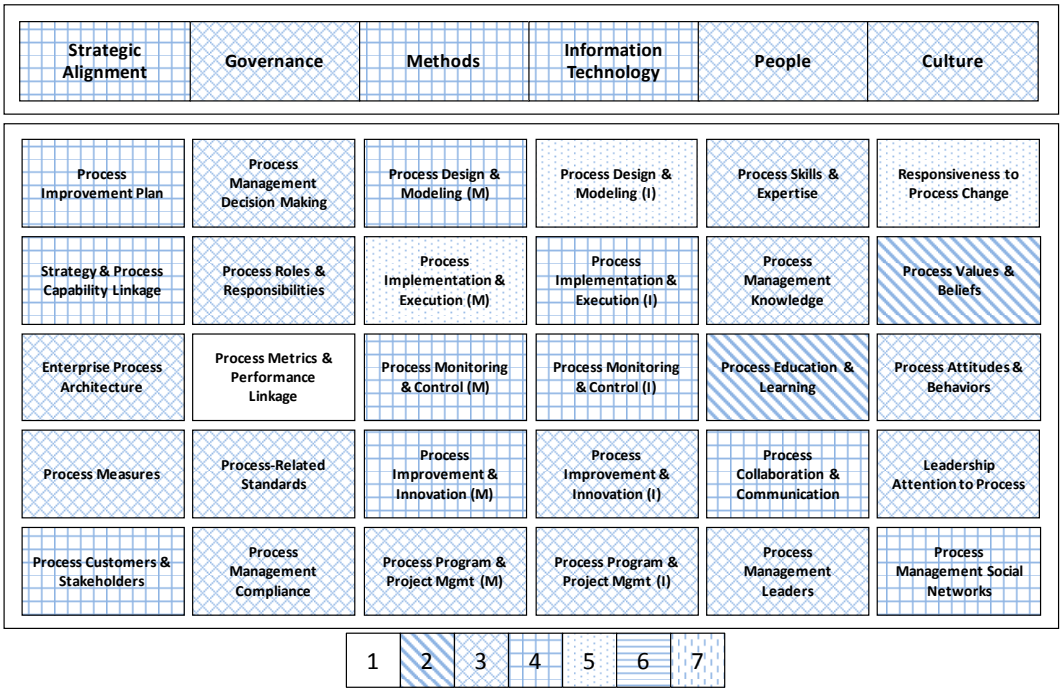


Figure 41: Company U – Emphasis during Last Year (2007)

This figure shows that a number of capability areas received higher emphasis than others including:

- Methods – Process Implementation and Execution
- Information Technology – Process Design and Modelling
- Culture – Responsiveness to Process Change.

The emphasis on having a repository for developing process models was evident in comments including:

> *"...repository based tools are important, otherwise you end up repeating, having multiple instances of business objects, that sort of thing. So I think you need good systems to maintain the quality of that repository..."*

This showed that participants saw value in having a common repository for storing and sharing the process models. The spread of emphasis across the factors was evidence of the balanced approach taken within the *BPM Initiative*, seen in comments such as:

> *"…you can have the best technology, you can have the best process in place, but if you haven't got your people trained and if they don't understand what's going on or why they're doing it, it's going to fail. It's an inevitable truth..."*

This statement highlighted again the belief within Company U that a balanced approach, including people, processes and technology was critical to progression. Table 69 shows the range in emphasis that Company U placed on the capability areas.

Factor	Average Score	Range in Emphasis on Capability Areas	Least Emphasised Capability Area	Most Emphasised Capability Area
Strategic Alignment	4.1	1.3	3.5	4.8
Governance	3.1	2.0	1.8	3.8
Methods	4.4	2.5	3.0	5.5
Information Technology	4.1	1.8	3.2	5.0
People	3.4	1.5	2.7	4.2
Culture	3.8	2.5	2.7	5.2
Range in Factors	**1.3**			

Table 69: Company U – Last Year Range in Emphasis

The range in emphasis on capability areas was highest for the *Methods* and *Culture* factors – the two factors that also had the most emphasised capability areas. *Governance* was the least emphasised factor during the last year.

Change in Emphasis from First Year to Last Year

Figure 42 shows the change in emphasis from the first to the last years.

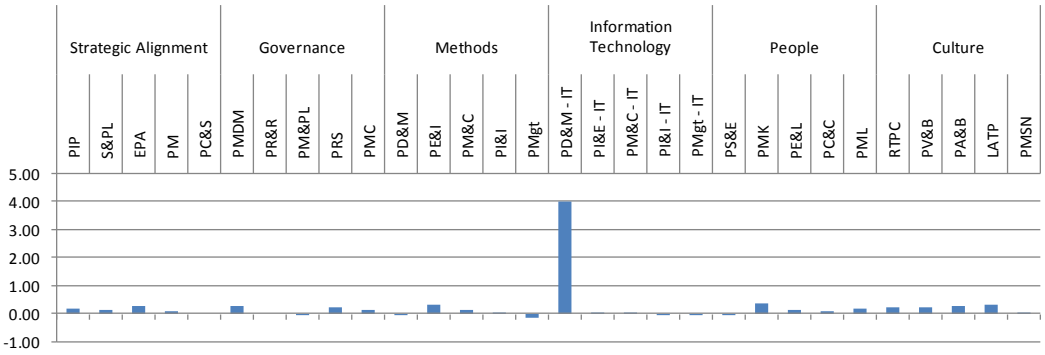


Figure 42: Company U – Change in Emphasis on Capability Areas

This figure showed little change in emphasis in all capability areas except for *IT – Process Design and Modelling*. Participants provided additional insights into this during the interviews. One participant indicated:

> *"...he'd been using ARIS and thought it was pretty good (…) and so we bought a few licences (...) but at the highest level of the organisation there mightn't have been the commitment to see it through..."*

This comment related to the Executive championing the *BPM Initiative*. During the last year of the *BPM Initiative*, this Executive left Company U and Company U transferred responsibility for the *BPM Initiative* to the IT Department. This resulted in the use of different process modelling software, seen in the comment:

> *"...we've just recently gone to using Holocentric as our process mapping tool and done that as a corporate product. Where ARIS was (…) never officially in our production environment, Holocentric is leveraged off a contract with our parent Department…"*

This statement explained the peak in the capability area in the *last year* and showed the impact contextual factors such as the *company ownership* or a change in *Executive Buy-In* can have on the progression of a *BPM Initiative*.

Another point of interest from Figure 45 is the negative change in some capability areas. Although the magnitude of change was minimal (ranging from -0.01 to -0.08) the change showed that the emphasis placed on capability areas for

Company U decreased over the duration of the *BPM Initiative*.

8.4.5 Discussion on Progression of the BPM Initiative

In discussing the progression of the *BPM Initiative*, Participants made key points regarding:

- Operating in a heavily legislated environment
- Strong but narrow *Executive Buy-In*
- Practical affect of BPM terminology.

Further details are in the following sections.

Operating in a Heavily Legislated Environment

Legislation or regulations acted to control the core processes within Company U, thus presenting a challenge to progressing the *BPM Initiative*. Participants articulated this in a number of ways, stating:

> *"...as much as we would like to significantly simplify our processes (...) we are to a large extent, hamstrung by the policy, legislation and international treaties that we are a party to..."*

> *"...there may well be something at the root of it like legislation (…) so if the legislation defines something then we have to do it otherwise we're breaking the law. You've got to take these things into account you can't just throw all that away and start with a clean slate..."*

In discussing the effects of the heavily legislated environment, participants highlighted the effects this had on the organisation, indicating:

> *"...this sort of leads you back to this silo mentality that we've had for a hundred years..."*

> *"...getting back to cultural inertia and things of that nature is probably one of the biggest issues that we'll face..."*

> *"...we've got a fair degree of inertia within the organisation..."*

These comments show that the existence of stable legislation governing the core processes of the organisation acted to limit the perceived opportunities for process change within Company U. One consequence of the inertia was the narrow scope of the *BPM Initiative* and the inability to progress the *BPM Initiative* into other areas of the business. Participants indicated:

> *"...I could see other parts of this organisation really struggling with it..."*

> *"...COG go well with it because I support it, corporately it doesn't have that same level of support so therefore it doesn't have that same connection..."*

This showed that different areas of Company U were more receptive to BPM thinking than others.

Strong but Narrow Executive Buy-In

The importance of having *Executive Buy-In* to the *BPM Initiative* was also evident in participant's comments, including:

> *"...management support is an important part of that. If you don't have support from the top it's not going to work across the board..."*

> *"...there needs to be a top level commitment (...) you've got to really capture the imagination of the exec and demonstrate how this thing is going to work..."*

> *"...more from the exec. The number one thing obviously, you can't do anything unless you've got their support to do it..."*

Despite recognising the importance of *Executive Buy-In* and having their *BPM Initiative* championed by an executive however, Company U was unable to progress well with the Initiative. As one participant indicated:

> *"...despite the fact one executive was one of the champions of it (…) it sort of died (…) that's a good example of how it can be quite difficult to implement this in an organisation such as ours, despite the fact there are people interested in it and even one of the executive members are interested in it..."*

This showed that within Company U, strong support from a single executive combined with support from other people within the company was insufficient for the progression of the *BPM Initiative*. There was further evidence of the effect of strong executive support from only isolated executives when the executive in question left the company. Participants indicated the effect of this change, stating:

> *"...one of the executives (...) he just left (...) he was championing it, but then for some reason it seemed to fall in a heap and we didn't go anywhere, and then we got caught up into specific projects and they took up a lot of our time. So I suppose we run the risk now that we're going to forget about all that good corporate thinking that we did and go back to our old traps..."*

> *"...there's a few of us around who had these concepts in our heads and any recommendation we put forward will still be in line with it, but you can see we've reverted to this ad hoc unstructured approach..."*

These comments showed the effect on the *BPM Initiative* within Company U when a key executive left the company. The point made by these comments was that Company U had not embedded a sufficiently coordinated approach to BPM such that BPM thinking could continue without the support of that key executive.

Practical Effect of BPM Terminology

Participants within Company U also discussed issues with BPM terminology and interpretation. Comments included:

> *"...it is program management versus project management (…) it's really in the technology stage, another truism that's not a truism is the number of IT people that think a workflow tool is BPM..."*

> *"...it's really easy to focus on your program management around your implementation of technology, but if you don't have the right people and the right processes, one of my favourite sayings in that space is, a fool with a tool is still a fool..."*

> *"...too many people think BPM and BPR are synonyms, when it's not..."*

> *"...we're developing a bigger-picture process orientated approach rather than just a technology orientated approach..."*

These comments show that within Company U the distinctions between the different interpretations of BPM were evident in practice[98].

8.4.6 Company U Summary

Company U commenced its *BPM Initiative* within a single line of business in 2003 – the COG. Since that time, attempts to expand the *BPM Initiative* to apply to a wider area of the business had been unsuccessful. Participants saw the lack of success in adopting a wider BPM view within Company U as stemming from core processes being the by-product of legislation. Participants credited the stability of this legislation, with it having remained largely unchanged for over 100 years, with creating a level of inertia within the company whereby there was little interest in process thinking.

[98] See Chapters 1 and 3 for discussion.

Within COG, Company U took a balanced approach to building BPM capability, striving to balance between people, process and technology. This reflected in relatively stable change across the capability areas. The one notable exception was with *IT – Process Design and Modelling*. This area had seen a significant increase in emphasis, with participants indicating a shift from one modelling tool to another in recent times. The reason for this was a change in the executive responsibility for the *BPM Initiative* and Company U being able to leverage licenses for process modelling software and support from their parent Department.

The departure of a key executive championing the *BPM Initiative* had resulted in a change in responsibility – from COG to the IT Department – in an effort to continue the *BPM Initiative* and to integrate it into other areas of the business. At the time of the case study, there was evidence that this change may be inhibiting the promotion of the *BPM Initiative* as being more than a technology approach.

8.5 Case 4 – Company V

Until shortly before the case study, Company V was a regional division of an international aviation company in the Asia-Pacific region, however, the parent company made a decision to sell this area of the business. Consequently, at the time of the case study, Company V was in the process of becoming a wholly owned subsidiary of a large multi-national conglomerate.

Company V provided services to the avionics industry. For the new parent company, Company V provided an extension to their aircraft engine supply chain. Company V was primarily Brisbane-based although head office under its new ownership arrangements was in the United States, and there was a small number of staff in Singapore. Operating within the avionics industry, Company V had to meet strict compliance requirements in order to operate. The legislation and regulations governing compliance however, vary dependent on the region in which the aircraft that is licensed. Services performed on aircraft registered in Australia, for example, are subject to CASA compliance whereas, for aircraft registered in Europe, work must comply with the EASA. In 2007, Company U

had a turnover of $200 million and a staff of approximately 1,000. Company demographics for Company V are summarised in Table 70.

Company V	Details
Headquarters	Clearwater USA
Industry	Transport (Aviation)
Turnover	$A200 million
Employees	1,000
Sector	Private
Ownership Structure	Wholly Owned Subsidiary

Table 70: Company V – Company Demographics

8.5.1 Participants in Study

The case study with Company V occurred from December 2007 to March 2008. The Key Contact from Company V invited participants to the study based on knowledge of the individuals and their involvement and understanding of the *BPM Initiative*. Details of the Company V participants are set out in Table 71.

Participants	Position	Position Level[99]	Years with Company	Involvement with BPMI
Participant 1	Finance Director – Asia Pacific	T	4	Not currently involved
Participant 2	Supply Chain Manager	O	6	Current, strong knowledge of history
Participant 3	Operational Director	O	3	Current, limited knowledge of history
Participant 4	Quality Manager	O	<1	Current, limited knowledge of history
Participant 5[100]	Global Business Process Manager (Client Service)	S,O	15	Current, since beginning
Participant 6	Repairs Manager	O	5	Current, limited knowledge of history
Participant 7	Lean Coach	O	13	Current, strong knowledge of history

Table 71: Company V – Participant Details

[99] S=Strategic, T=Tactical, O=Operational.

[100] Participant 5 was the Key Contact for the case study with Company V.

Table 71 shows that six of the seven participants from Company V were at an operational level. One of these participants also held a strategic position and the remaining participant held a tactical position. One participant had been involved with the *BPM Initiative* since it began, with an additional two participants involved with the *BPM Initiative* and having a strong understanding of its history. A further three participants were involved with the *BPM Initiative* but had a limited knowledge of its history and the remaining participant was not currently involved with the *BPM Initiative*.

8.5.2 Demographics of the BPM Initiative

Company V commenced its *BPM Initiative* in 2005 within its Customer Service Division. Key demographics of the *BPM Initiative* at Company V since its inception in 2005 are set out in Table 72.

BPMI	Details
Year Commenced	2005
Plans for Continuation	Ongoing (but on hold pending outcome of recent sale of the company)
Structure	
At Beginning	Ad Hoc/Project Based
At Time of Case Study	Centre of Excellence
Responsibility	
At Beginning	Executive
At Time of Case Study	President – Business Improvement Unit
Executive Buy-In	
At Beginning	5.0
At Time of Case Study	5.0

Table 72: Company V – BPM Initiative Details

The details in Table 72 show that, since its inception the structure and responsibility for the *BPM Initiative* had changed. At the beginning of the *BPM Initiative* an ad hoc, project based approach was taken to improving processes. During the early stages however, the *BPM Initiative* changed. According to one participant:

> *"…we were buying this tool, or evaluating a tool to design our processes but looking at it myopically from a very narrow point of view. We needed to understand the bigger picture..."*

The realisation that BPM was more than modelling and improving processes resulted in a wider, more co-ordinated approach to the *BPM Initiative*. This saw the establishment of a recognised Business Improvement Unit that operated as a centre of excellence and incorporated the Global Business Solutions Team (GBST).

The *Executive Buy-In* for the *BPM Initiative* at the beginning was moderately high, rating 5 on a 7-point scale. Over time, the level of *Executive Buy-In* remained unchanged.

According to the Global Process Owner, at the beginning of the *BPM Initiative*, the major drivers of the *BPM Initiative* were:

> *"...the need to understand, to have the consistency of processes and at least aligned to our business objectives and strategic processes..."*

The next sections detail the emphasis placed on the capability areas during the first and last years of the *BPM Initiative*.

8.5.3 First Year of the BPM Initiative

Figure 43 shows the emphasis placed on the capability areas during the first year of the *BPM Initiative*.

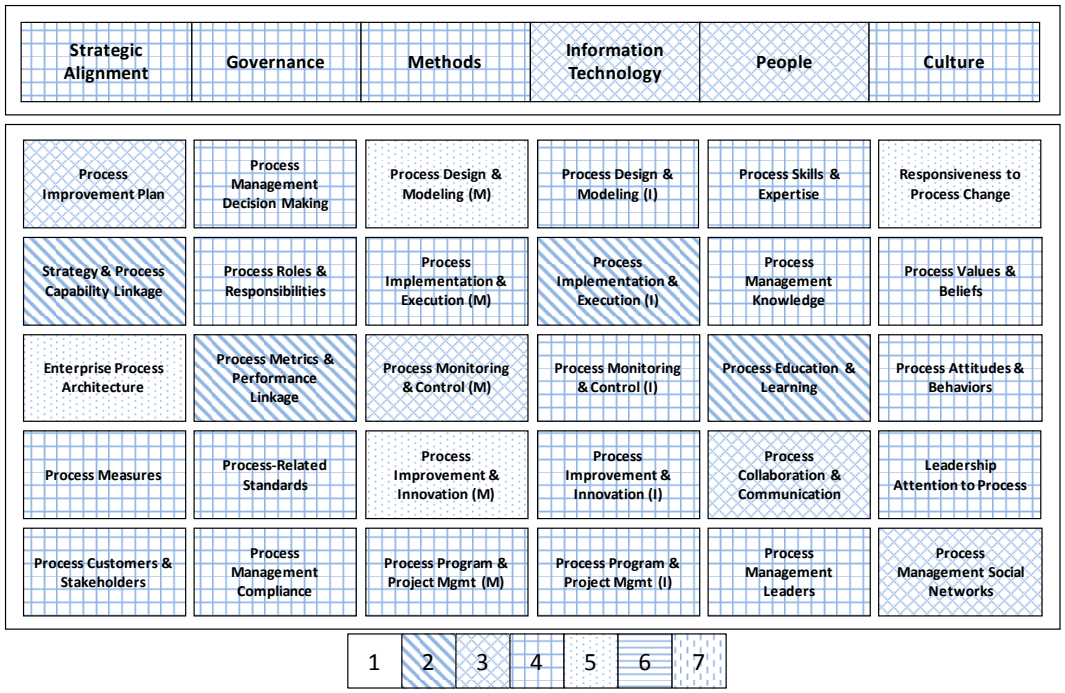


Figure 43: Company V – Emphasis during First Year (2005)

Figure 43 shows that select capability areas received higher attention including:

- Strategic Alignment – Enterprise Process Architecture
- Methods – Process Design and Modelling
- Methods – Process Improvement and Innovation
- Culture – Responsiveness to Process Change.

Supporting this early emphasis on process design and modelling, and process improvement, participants stated:

> *"…understanding our process design was another major factor…"*

> *"…we identified the need for common procurement, common management of, and control of our products and services, so therefore we were looking at a common business system..."*

> *"...we soon realised that business process management was a much bigger picture, the holistic view, of which the business process modelling is only a tiny little part..."*

These statements showed that although Company V focused early efforts on business process modelling and improvement activities they soon recognised that process modelling was only a part of what contemporary BPM practice could entail.

Figure 43 also shows that greater variance occurred at the level of capability areas than was evident at the factor level. In the *Strategic Alignment* factor, for example, the emphasis placed on the capability area of *Enterprise Process Architecture* was rated 5 on a 7-point scale with 7 being the highest level of emphasis. Conversely, within the same factor, the emphasis on the capability area of *Strategy and Process Capability Linkage* was lower, being just 2. Table 73 shows the difference in range within each factor and across the capability areas.

Factor	Average Score	Range in Emphasis on Capability Areas	Least Emphasised Capability Area	Most Emphasised Capability Area
Strategic Alignment	4.0	2.2	2.8	5.0
Governance	4.1	2.2	2.6	4.8
Methods	4.5	2.8	3.0	5.8
Information Technology	3.9	2.2	2.6	4.8
People	3.7	1.8	2.6	4.4
Culture	4.5	1.6	3.4	5.0
Range in Factors	**0.8**			

Table 73: Company V – First Year Range in Emphasis

This table confirms that the range across the factors (i.e. 0.8) was significantly less that the range evident within each of the factors, being between 1.6 and 2.8.

8.5.4 Change from First to Last Year of the BPM Initiative

Looking at the data from the last year of the *BPM Initiative* (i.e. 2007), Figure 44 shows the emphasis Company V placed on the capability areas.

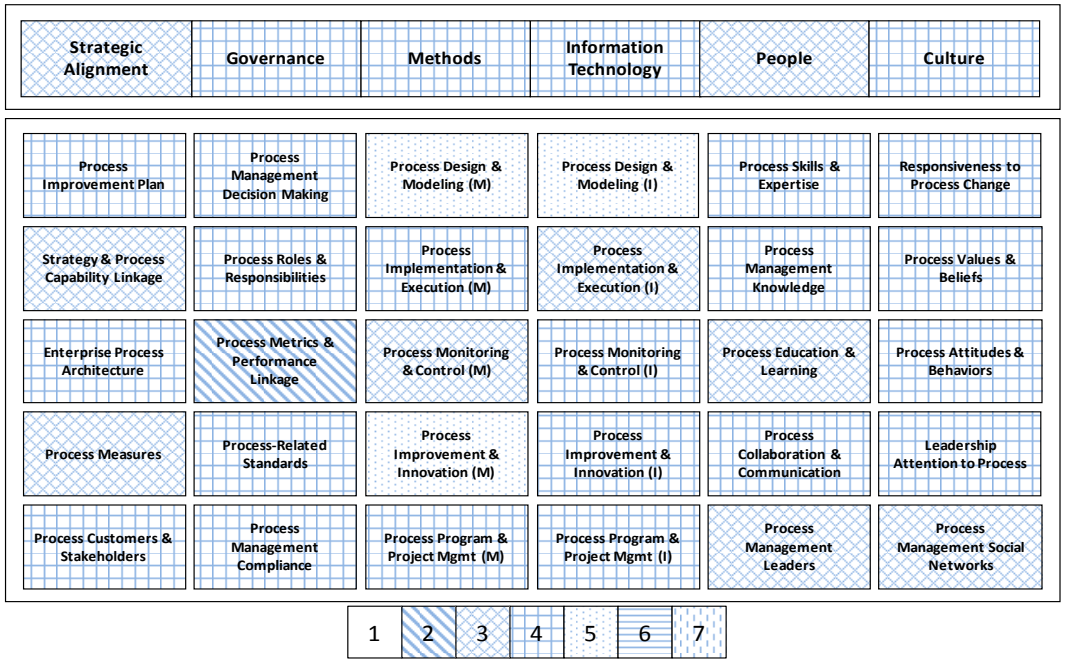


Figure 44: Company V – Emphasis during Last Year (2007)

This figure shows that Company V was still placing higher emphasis on the capability areas of *Methods – Process Design and Modelling*, and, *Process Improvement and Innovation*. The only other capability area to receive the same level of emphasis was *IT – Process Design and Modelling*. Participants supported the emphasis on Process Design and Modelling indicating:

> *"...we needed a tool that would capture our processes in a single repository across the globe, because we were doing things totally disparately..."*

The continuing emphasis on *Methods – Process Improvement and Innovation* was consistent with the *BPM Initiative* applying to the newly established Business Improvement Unit.

Furthermore, Table 74 shows that the range in emphasis across the capability areas was not as high as it had been previously.

Factor	Average Score	Range in Emphasis on Capability Areas	Least Emphasised Capability Area	Most Emphasised Capability Area
Strategic Alignment	3.9	1.5	3.0	4.5
Governance	4.2	1.9	2.8	4.7
Methods	4.5	2.4	3.3	5.7
Information Technology	4.6	2.0	3.7	5.7
People	3.9	1.5	3.0	4.5
Culture	4.0	1.2	3.3	4.5
Range in Factors	**0.7**			

Table 74: Company V – Last Year Range in Emphasis

This table shows that the range in capability areas for the *Methods* and *IT* factors varied more than for other factors. These two factors also included the most emphasised capability areas during the last year.

Change in Emphasis from First Year to Last Year

Figure 45 shows the change in emphasis in capability areas for Company V.

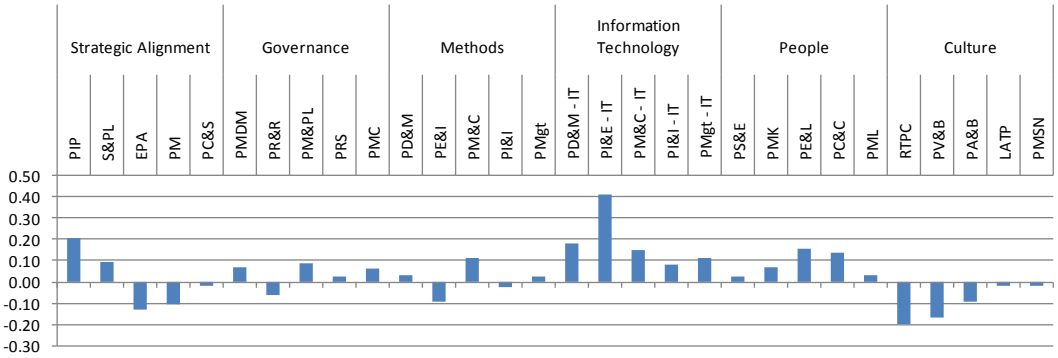


Figure 45: Company V – Change in Emphasis on Capability Areas

This figure shows that for a number of capability areas the emphasis decreased from the first year to the last year. One source of the decrease was the impending sale of the organisation. Participants commented on the effect of this sale in relation to the progression of the *BPM Initiative* stating:

> *"...because you've got this culture saying, we're getting bought and we don't even know if we keep modelling, we don't know if we're going to keep going forward with business process management and with process owners, the process owners were becoming very much disengaged and it was a waiting game in a way..."*

The *Strategic Alignment* capability area of *Process Improvement Planning* also received an increase in emphasis over time. Comments by participants that provided insights into this increase in emphasis included:

> *"...we looked to address issues such as how do we harness all of this, how do we bring this all together and using our limited resources to address these problems in a consistent manner..."*

> *"...but we prioritised them so that we could work on the first 4 or 5 so we wouldn't stretch our resources and we'd be able to go forward and rectify them..."*

These comments showed that Company V focused on improving the planning and prioritisation of their project in response to resource restrictions and the desire to balance resources with progression.

Other areas to receive increasing emphasis over time were education and communication. Participants stated:

> *"...we were trying to bring everything into one global organisation, so having seen that I realised that we needed to start educating the business..."*

> *"...motivation and communication was lacking and we needed to communicate it a lot more and lot clearer..."*

This highlighted the deliberate emphasis put on these areas and indicated that companies choose to place emphasis on particular capability areas based on the specific needs of the company and the views of decision makers at a given point in time.

8.5.5 Discussion on Progression of the BPM Initiative

In discussing the progression of the *BPM Initiative*, Participants made key points regarding:

- Change in company ownership
- Operating in a global environment
- Potential relationship between capability areas.

Further details are in the following sections.

Change in Company Ownership

In 2006, what was Company V in this case study was a stand-alone company with a team in the Asia-Pacific region undertaking a *BPM Initiative* with solid support from executives. Early in 2007, the owners of the company separated and sold the Asia-Pacific business. Thus, Company V became a wholly owned subsidiary of another company. This change in ownership affected the progression of the *BPM Initiative*. Participants indicated:

> *"...at this point that we knew we were being purchased, everything went on, I wouldn't say hold but, there was a drastic slow down..."*

> *"...how do you take on an acquisition? When somebody's acquiring you, you've got buy in, you've got momentum and all of a sudden it seems like they've got a different agenda and they're not sure of that agenda and uncertainty develops further uncertainty and you sit there waiting and playing a waiting game, not really going forward driving..."*

These statements showed that the impending change in ownership caused a significant period of instability and inactivity in what was an active *BPM Initiative*. This provided an example of how changes in the contextual environment of an organisation can influence progression.

Operating in a Global Environment

Company V was a global company operating in a legislatively controlled environment. With regard to locations, a participant indicated:

> *"...one of the huge, huge problems we've had is that we tried to be a global organisation, obviously we've got operations in Brisbane, we've got operations in Newcastle, Singapore. We've got operations in Cheltenham, Wolverhampton, Wellington. We've got operations in 7 US towns as well..."*

Within this geographic dispersion, common processes had to comply with different legislative requirements. Participants indicated that:

> *"...to get standard global processes would be very difficult not only due to a lack of a common business system but also due to the countries having different laws, different regulations, especially in the Aerospace industry (…) Europe is governed by a European Air Safety Agency and the US is governed by the Federal Aviation Authority, so to get common processes is very difficult..."*

> *"...issues we have like legal policies and things like FAA policies and CAA..."*

> *"...that's just part of the civil aviation regulations, so that presented its own problems in how we control this..."*

Such comments indicated the potential for differences in global organisations as they face increased complexity due to different legislation applying in different regions.

Potential Relationships between Capability areas

In addition to showing that the emphasis on capability areas could decrease, the case study with Company V provided evidence of the potential for a sequential relationship between the capability areas. One participant indicated:

> *"...some of the areas directly impacted on others (…) if you were focused on one particular area of IT (…) you also had to have some element of maturity within the people and your culture (…) which would make your implementation of the IT program a lot easier…"*

Comments such as this raise two points (1) that a temporal sequence may exist between some capability areas and (2) that a causal relationship may exist between some capability areas.

8.5.6 Company V Summary

Company V commenced its *BPM Initiative* in 2005 with a view to improving its service delivery processes. The initial *BPM Initiative* was an ad hoc, project base approach to improving processes. There was moderate-high *Executive Buy-In* to the *BPM Initiative*.

During early stages of the *BPM Initiative*, Company V realised that BPM could be more than just modelling and improving processes. Consequently, Company V established a recognised Business Improvement Unit operating as a specialist BPM team with a view to expanding the *BPM Initiative* within the company.

Early in 2007, Company V had a change in ownership structure that acted to slow down the progress of the *BPM Initiative*. At the time of the case study, the *Executive Buy-In* remained at the same level. The emphasis placed on a number of capability areas decreased however, as Company V put some BPM activities on hold during the buy-out of the company.

The case study with Company V showed the negative affect of a change in contextual variables, the potential for complexity introduced by global operations and the potential for sequential, temporal, and directional relationships between the capability areas within the *BPM Capability Framework*.

8.6 Case 5 – Company W

Company W was an operational area within a Department of the Queensland State Government that included administrative, technical and professional staff. The primary purpose of Company W was to provide services to the people of Queensland by managing operations effectively and efficiently whilst ensuring independence of information provision. The demographics of Company W are summarised in Table 75.

Company W	Details
Headquarters	Brisbane
Industry	Community Services
Annual Gross Turnover	N/A
Employees	1200
Sector	Public
Ownership Structure	Agency of State Government Department

Table 75: Company W – Company Demographics

8.6.1 Participants in Study

The case study with Company W occurred over the period from December 2007 to March 2008. The Key Contact from Company W invited participants to the study based on knowledge of the individuals and their involvement and understanding of the *BPM Initiative*. The details of participants for Company W are set out in Table 76.

Participants	Position	Position Level[101]	Years with Company	Involvement with BPMI
Participant 1[102]	Business Process Management Advisor	T	1	Current, strong knowledge of history
Participant 2	Business Process Expert	S	28	Current, strong knowledge of history
Participant 3	Business Expert	O	37	Current, since beginning
Participant 4	Information Architect	S	1.5 + prior	Current, strong knowledge of history
Participant 5	Business Expert	T	18	Current, strong knowledge of history
Participant 6	Deputy Director – Courts	S,T,O	2	Current, strong knowledge of history
Participant 7	Team Leader	O	18	Current, limited knowledge of history
Participant 8	Team Leader	O	14	Current, strong knowledge of history
Participant 9	Director of Courts	S	1 + 20yrs prior	Current, since beginning

Table 76: Company W – Participant Details

Table 76 shows that one of the nine participants held strategic, tactical and operational roles; three held strategic roles; three held operational roles; and two held tactical roles. All participants were involved in the *BPM Initiative* at the time of the case study, with two having been involved with the *BPM Initiative* since the beginning. All participants had a strong knowledge of the history of the *BPM Initiative* except for one. The remaining participant had a limited understanding of the *BPM Initiative*.

[101] S=Strategic, T=Tactical, O=Operational.

[102] Participant 1 was the Key Contact for the case study with Company W.

8.6.2 Demographics of the BPM Initiative

Company W commenced its *BPM Initiative* in 2005. Key demographics of the *BPM Initiative* at Company W since its inception are set out in Table 77.

BPMI	Details
Year Commenced	2005
Plans for Continuation	Ongoing
Structure	
At Beginning	Enterprise Wide Program / Project Based
At Time of Case Study	Enterprise Wide Program / Pockets of Excellence
Responsibility	
At Beginning	Executive – Program Director and Director of Courts
At Time of Case Study	Deputy Director General
Executive Buy-In	
At Beginning	1.9
At Time of Case Study	5.7

Table 77: Company W – BPM Initiative Details

The details in Table 77 showed that the structure and responsibility for the *BPM Initiative* had changed since inception. The scope of the *BPM Initiative* had remained as an enterprise wide program. The implementation approach had changed however, from being project based to becoming a pocket of excellence.

The responsibility for the *BPM Initiative* had also changed. The change in responsibility reflected a movement from the Director of one of the early projects (i.e. the Continuous Process Improvement Project) to the highest administrative level within the Department, being the Deputy Director General. This higher-level responsibility reflected the increasing importance Company W placed on adopting a BPM perspective throughout the enterprise.

The level of *Executive Buy-In* at the beginning of the *BPM Initiative* was low, rating 1.9 on a 7-point scale. Over the time of the Initiative, the *Executive Buy-In* had increased to a higher level of 5.7.

At the time of commencing its *BPM Initiative*, Company W was experiencing a range of issues including staff working in silos, not understanding how they fitted into the bigger picture, high error rate, significant duplication, limited (and at times unprofessional) service and had limited capability to grow or develop capability or capacity. When discussing the drivers of the *BPM Initiative*, one participant stated it was about:

> *"...getting honest with ourselves about the fact that there was a real need for substantial change, and that the way we were running our business at that point in time was unsustainable and making everybody pretty unhappy, there was low morale and the staff were working in some pretty unsatisfactory conditions. There was no thought to line management, our communications were a mess, our statistics were a mess..."*

Consequently, the goals of the *BPM Initiative* were to improve business processes and workflows, focus on customer service, improve internal and external communications, improve the use of information technology and management, amend legislation and policy (where necessary) and review the organisational structure to improve workflows.

The next sections detail the emphasis placed on the capability areas during the first and last years of the *BPM Initiative*.

8.6.3 First Year of the BPM Initiative

Figure 46 shows the emphasis placed on each capability area in the first year of the *BPM Initiative*.

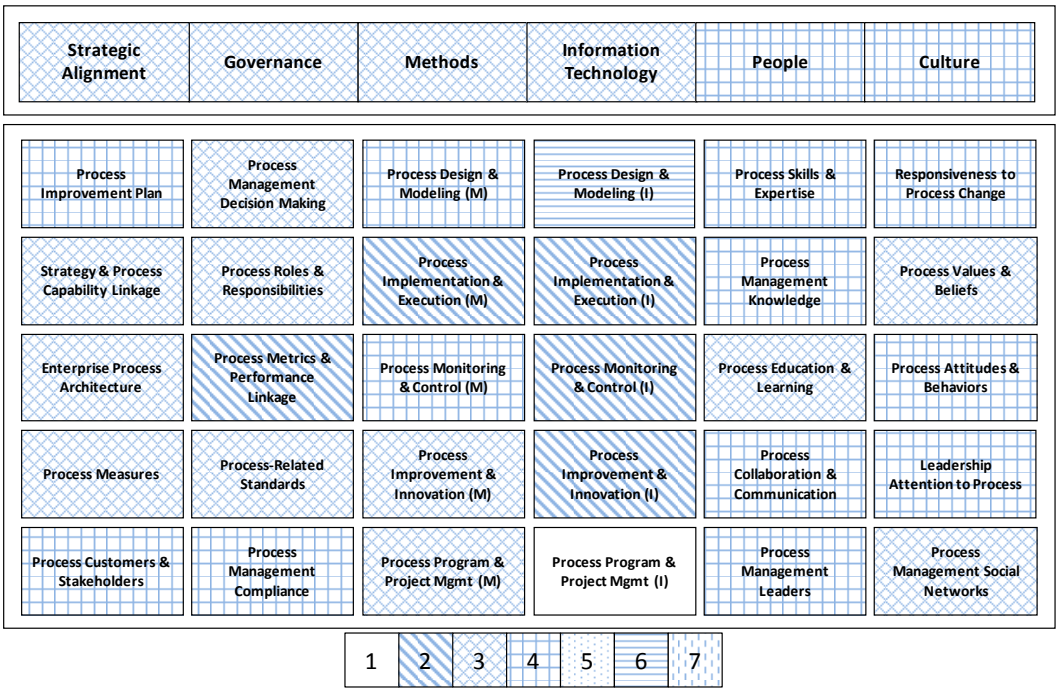


Figure 46: Company W – Emphasis during First Year (2005)

Figure 46 shows that during early stages of the *BPM Initiative* Company W placed its highest average emphasis on *People* and *Culture* capability areas. Table 78 shows that the *People* factor also had one of the lowest ranges in emphasis.

Factor	Average Score	Range in Emphasis on Capability Areas	Least Emphasised Capability Area	Most Emphasised Capability Area
Strategic Alignment	3.8	1.3	3.1	4.4
Governance	3.5	1.1	2.9	4.0
Methods	3.8	1.9	2.9	4.8
Information Technology	3.2	4.5	1.8	6.3
People	4.2	1.3	3.5	4.8
Culture	4.1	1.6	3.3	4.9
Range in Factors	**1.0**			

Table 78: Company W – First Year Range in Emphasis

Evidence from interviews supporting the early emphasis of *People* included comments such as:

> *"...without working up the people, without starting to develop the people, or making that a goal up front or making that a priority up front, I don't think it would ever have succeeded..."*

> *"...building capability within the organisation that again, such that the organisation could own its own growth and progress its own growth, and grow its own staff and grow its own expertise and professionalism up..."*

Participants indicated a necessity to overcome a lack of understanding about process in order to progress, making comments such as:

> *"...having to overcome a profound level of organisational immaturity..."*

> *"...lack of organisational understanding about business process improvement generally..."*

This reflected in the emphasis placed on developing capability areas in the *Culture* factor.

Despite the high emphasis on the *People* and *Culture* factors, Table 78 shows that the capability area receiving the greatest emphasis was from the IT factor, being *IT – Process Design and Modelling*. The early emphasis on IT for process modelling reflected in participants stating that the initial focus of the *BPM Initiative* was:

> *"...initially (...) doing some process modelling..."*

The emphasis on process modelling was also evident in the Continuous Process Improvement Project being the recognised starting point of the *BPM Initiative* within Company W.

8.6.4 Change from First to Last Year of the BPM Initiative

Figure 47 shows the emphasis placed on each capability area in the last year of the *BPM Initiative*.

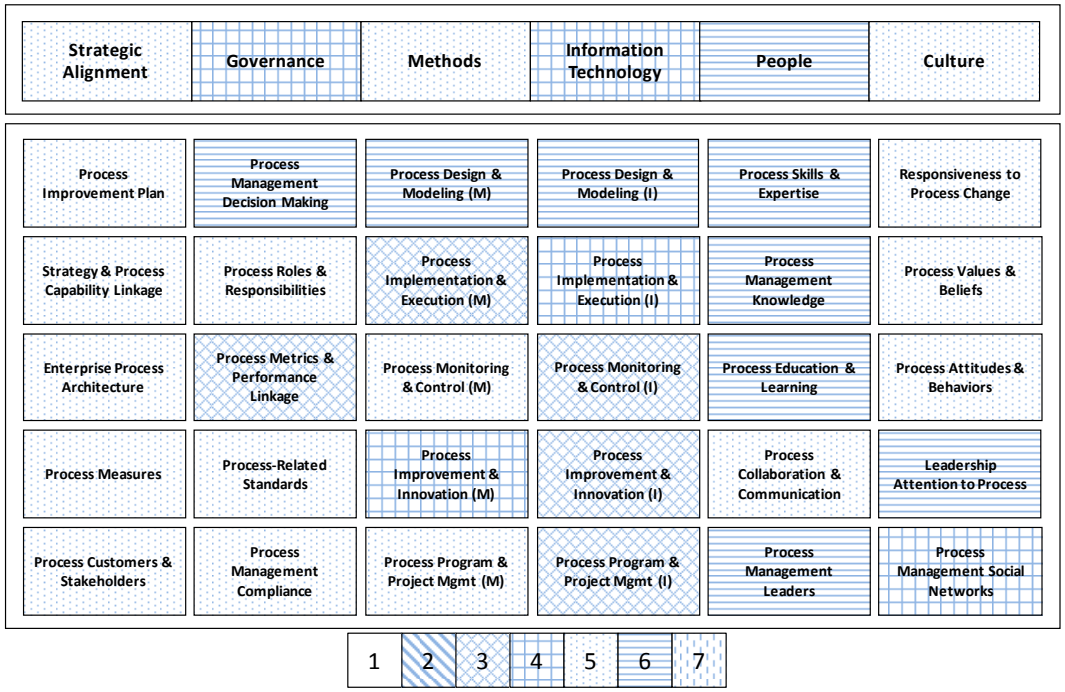


Figure 47: Company W – Emphasis during Last Year (2007)

Figure 47 shows a high emphasis on capability areas from the *People* factor with four of the five capability areas receiving an average emphasis of 6 on a 7- point scale. Other capability areas receiving an average emphasis score of 6 included:

- Governance – Process Decision Making
- Methods – Process Design and Modelling
- IT – Process Design and Modelling
- Culture – Leadership Attention to Process.

The *Strategic Alignment* factor was notable for the consistent emphasis placed on its capability areas with all five receiving an average emphasis of between 5.0 and 5.8. This reflected in the factor having the lowest range in emphasis during the last year, as seen in Table 79.

Factor	Average Score	Range in Emphasis on Capability Areas	Least Emphasised Capability Area	Most Emphasised Capability Area
Strategic Alignment	5.3	0.8	5.0	5.8
Governance	4.9	2.9	3.1	6.0
Methods	5.2	2.6	3.6	6.2
Information Technology	4.4	2.6	3.8	6.4
People	6.1	0.9	5.7	6.6
Culture	5.6	1.3	4.9	6.2
Range in Factors	**1.7**			

Table 79: Company W – Last Year Range in Emphasis

Supporting the continuing focus on the *People* factor, participants commented on the need to recognise process skills, indicating a focus on:

> *"...thinking carefully about how we recruited and what the skill base was and the aptitudes that we really needed..."*

> *"...giving staff skills to be able to know their own processes and do them..."*

Similarly, participants highlighted the role of training stating:

> *"...the mentoring of staff and staff training and having a cohesive management team here..."*

> *"…everything is incremental, even the training, the team leaders got on board, they got particular training up front (…) and there'll be more training later, so it's not trying to do everything with a big bang but just knowing that it takes time to grow a garden..."*

These statements show that Company W placed emphasis on continuing to develop staff internally, using iterative training and mentoring as a means of enhancing existing skills and expertise.

Participants indicated changes in the working environment, stating:

> *"...we're really supportive of each other, it's treated as a safe environment, so people can get up and say what they need to and they're not going to hear it somewhere else, so there's respect..."*

> *"...absolute honesty and integrity, our willingness to embrace what comes along (…) that sense of your co worker should be able to know that there is a degree of consideration and respect and reliability that they can have of you and that you bring to the table, and you should be able to understand the same is given to you..."*

Such statements were indicative of Company W's continuing emphasis on developing capabilities that supported working in a collaborative environment. The consequence of this emphasis on Company W was evident in comments including:

> *"...there is no way that it could go back to what it was. It couldn't, it actually couldn't. Like it's too different, the structure has altered..."*

> *"...there's been so much influx of new talent that I think it would be hard. I think that there has been an irrevocable change culturally..."*

These comments show that the high emphasis on the *People* and *Culture* factors resulted in significant changes to the working environment, with an aim to embed BPM within Company W.

Change in Emphasis from First Year to Last Year

The change in emphasis on the capability areas from 2005 to 2007 is set out in Figure 48.

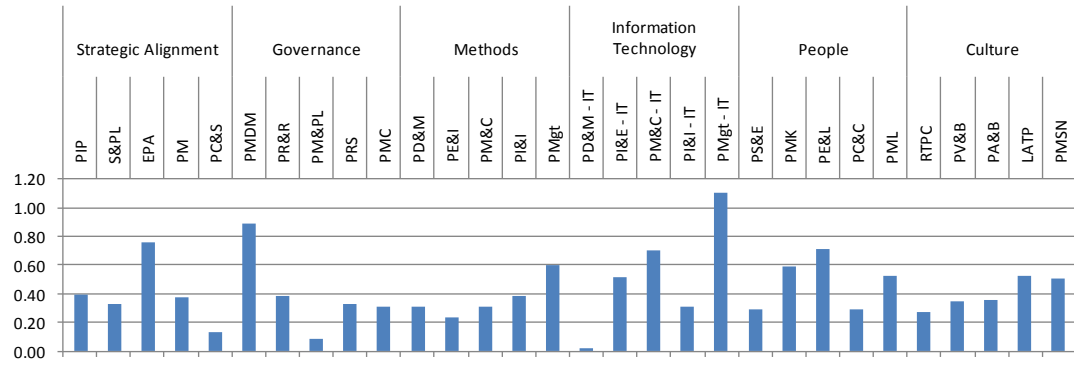


Figure 48: Company W – Change in Emphasis on Capability Areas

This shows that two capability areas (1) *IT – Process Project and Program Management* and (2) *Governance – Decision Making Processes* received the largest increase in emphasis. The capability area of *IT – Process Design and Modelling* consistently received high attention, being one of the most emphasised areas in the first and last year and reflecting little change over time.

8.6.5 Discussion on Progression of the BPM Initiative

In discussing the progression of the *BPM Initiative*, participants made key points regarding:

- Making deliberate choices to match progression to contextual environment
- Having periods of heightened activity amongst periods of stability
- Distinction between *Executive Buy-In* and Leadership.

Further details are in the following sections.

Matching Progression to Contextual Environment

When discussing the progression of the *BPM Initiative*, participants commented on the need to make choices to suit the needs and situation of the company, stating:

> *"...the choices that we made in terms of foundation decisions were the right ones, for us and I'd stand by them..."*

> *"...we were undertaking renovations such that a house couldn't be the same again and that by immediately changing your environment you were immediately laying a platform for your growth, so they were the choices we made. Other people would've made other choices depending on what their needs were, but they were our needs so that was one contextual issue..."*

These statements showed that, for Company W, progression of the *BPM Initiative* came from making deliberate choices that suited the contextual situation of the company. The comments also acknowledged that such choices might not have been appropriate for all companies.

Periods of Heightened Activity amongst Periods of Stability

Other participants reflected on the need to work continually to progress the *BPM Initiative*, stating:

> *"...it's not a risk but it certainly could be, that is not being complacent about it and ensuring that, even when we're tired, making sure we still take gentle steps, step by step by step by step and even when we're really stretched, making sure we're still making an investment in ourselves..."*

> *"...you still have to put your energy in, it's not just being carried along on a river, you actually have to put in energy and so there'll be times when you have to really swim fast and there will be times you will be carried (...) it's a multi-layered process…"*

These comments showed the necessity of applying the notion of continual improvement to the Initiative itself and not just to the processes to which BPM applied. They also show that, over time, there will be periods of heightened activity and other times when activity will slow down.

Executive Buy-In and Leadership

With regard to the impediments to the progression of the *BPM Initiative*, participants commented on the lack of experience and understanding from executives stating:

> *"...it was buy-in (...) but it was tacit support and encouragement as opposed to actual, real hands on rigour and vigour, so that was another really big, that was a really big problem for us..."*

> *"...A lack of buy in, in the sense that they did not, because of the lack of understanding they didn't have a really good feeling about what could've been achieved, so they (…) didn't take up the initiative they left it for others to do..."*

This showed that *Executive Buy-In* for the *BPM Initiative* was, by itself, insufficient for progression. Additional comments with regard to the leadership of the *BPM Initiative* showed however, that it was the ownership of the *BPM Initiative* implementation by individual executives that saw it progress. In support of this, participants indicated:

> *"...someone needed to own it and go, this is the direction and this is where we're moving, (…) without the executive being, and I mean in terms of the whole leadership team being absolutely zealous about pushing that forward, it would not have happened..."*

> *"...without the vigour and drive from this role (…) it's the fact that without it being driven from somewhere, and by someone, it would not have happened..."*

These comments showed that in itself *Executive Buy-In* was insufficient to progress the *BPM Initiative* within Company W. The combination of active and involved participation of executives, with the authority and power to instigate change, and the broader support from other executives enabled progression.

8.6.6 Company W Summary

Company W commenced its *BPM Initiative* in 2005 as an enterprise wide program in response to a need to improve information availability and use. Over the duration of the *BPM Initiative*, the implementation approach had changed from a project-based approach to one using a recognised BPM team as a centre of excellence. The progression of the *BPM Initiative* had seen movement of responsibility for the *BPM Initiative* to the highest administrative position within the Department. There had also been an increase in the level of *Executive Buy-In* to the *BPM Initiative,* from 1.9 to a higher level of 5.7 on a 7-point scale.

In the first year of the *BPM Initiative* Company W focused on building capability in the *People* and *Culture* factors, although the most highly emphasised capability area during this time was *IT – Process Design and Modelling*. This was consistent with the initial project that started the *BPM Initiative* being on the modelling of processes.

Over the course of the *BPM Initiative*, the higher focus on *People* and *Culture* capability areas continued. The areas receiving the largest change in emphasis however were *Governance – Process Management Decision Making* and *IT – Project and Program Management*.

The case study with Company W showed the need for *Executive Buy-In* but also the importance of having dedicated (executive) leaders to drive the implementation of the *BPM Initiative*. Other aspects that were important to the progression of the *BPM Initiative* within Company W were (1) the need to match progression to the specifics of company and (2) the ebb and flow of activity, with periods of stable progression interspersed with heightened periods of activity.

8.7 Chapter Summary

This chapter presented the *BPM Initiatives* of the five companies that participated in the longitudinal study. Presenting the cases separately provided a deeper understanding of the *BPM Initiatives* for each company.

The Researcher used a standard format across all five companies, first presenting the demographics of the company, the participants and the *BPM Initiative*. Next, there was a review of the emphasis placed on the capability areas of the *BPM Capability Framework* in the first and last years, and the change in emphasis between these two points. Following this there was a discussion of three key findings arising from each of the companies. The final section for each case concluded with a summary of *BPM Initiative*.

The subsequent chapter details the cross case analysis and findings from the longitudinal case studies with these five companies.

9 Comparative Case Analysis

When investigating the progression of BPM, it is important to consider how journeys compare and contrast across different organisations. This improves the generalisability of subsequent theory. Questions the Researcher will answer in this chapter include:

- What aspects are common among the five case studies?
- What is different?
- Where do the consistencies and inconsistencies come from?
- What do they mean?

These questions will be answered through the comparison and contrasting of the five case studies presented in the previous chapter.

9.1 Chapter Overview

The structure of this chapter is as follows. Section 2 presents a summary of the demographics of the five cases and their *BPM Initiatives*. Section 3 provides an in-depth investigation of the *first year* of the *BPM Initiatives*, using the emphasis the companies have placed on building capability as a basis of comparison and contrast. Section 4 includes a similar investigation of the *last year* of the *BPM Initiatives*. Section 5 considers the relative change in emphasis between the two points of *first* and *last year*. Section 6 summarises the key themes from the cross-case analysis. Section 7 concludes with a summary of the chapter.

9.2 Summary of Cases

As indicated in Chapter 7, this study aimed for both literal and theoretical replication in the longitudinal case studies. Within the confines of this study, the aspects that were important to achieve these aims include similarities in company details, the emphasis the companies place on the capability areas at different points in time, the structure of the *BPM Initiative* and the *Executive Buy-In* to the *BPM Initiative*. Chapter 7 provided further discussion on the selection of these points. Table 80 and Table 81 summarise the company demographics and the *BPM Initiative* demographics respectively.

Company Details	Company S	Company T	Company U	Company V	Company W
Headquarters	Bathurst	Brisbane	Canberra	Clearwater USA	Brisbane
Industry	Education	Transport (Rail)	Innovation, Science and Technology	Transport (Aviation)	Community Services
Turnover	$A300 million	$A2 billion	$A115 million	$A200 million	N/A
Employees	2,000	13,000	1,000	1,000	1200
Sector	Public	Public	Public	Private	Public
Ownership Structure	Government Funded Education Facility	Government Owned Corporation	Agency in Federal Government Portfolio	Wholly Owned Subsidiary	Government Owned Corporation

Table 80: Summary of Company Demographics

BPMI Details	Company S	Company T	Company U	Company V	Company W
Year Commenced	2005	2000	2003	2005	2005
Instigator	Institutional Development Committee	BPM Centre	Line of Business (Customer Operations)	Business Improvement Unit	Executives
Plans for Continuation	Difficult to gauge real commitment	Ongoing	Ongoing	Ongoing	Ongoing
Structure of the BPM Initiative					
At Commencement	Project Based / Enterprise Wide Program	Project Based / Enterprise Wide Program	Project Based	Ad Hoc / Project Based	Project Based / Enterprise Wide Program
At Time of Case Study	Project Based / Enterprise Wide Program	Pockets of Excellence / Enterprise Wide Program	Project Based / Pockets of Excellence	Pockets of Excellence	Pockets of Excellence / Enterprise Wide Program
Responsibility for the Structure of the BPM Initiative					
At Commencement	Institutional Development Committee	Strategy Unit	Line of Business (Customer Operations)	Executives	Executives
At Time of Case Study	Institutional Development Committee	Shared Services Unit	IT Department	Business Improvement Unit	Executives

BPMI Details	Company S	Company T	Company U	Company V	Company W
Responsibility for the BPM Initiative					
At Commencement	Vice Chancellor	Chief Strategy Officer	General Manager – Customer Operations	President	Program Director and Director of Courts
At Time of Case Study	Vice Chancellor	Group General Manager Shared Services	Chief Information Officer	President	Deputy Director General
Executive Buy-In to the BPM Initiative					
At Commencement	3.4	2.5	4.1	5.0	1.9
At Time of Case Study	4.8	3.2	4.3	5.0	5.7
Employee Support for the BPM Initiative					
At Commencement	4.1	3.0	4.6	4.6	2.4
At Time of Case Study	4.8	4.1	4.7	4.8	4.8

Table 81: Summary of BPM Initiative Demographics

In the longitudinal studies, the Researcher measured the level of emphasis the companies placed on the capability areas from the *BPM Capability Framework* at two points in time. These two points were, the first year of the *BPM Initiative* for each company, and the most recent year of the *BPM Initiative* at the time of the case study (i.e. the *last year*). The Researcher collected this data using a survey instrument completed by participants within each company[103]. Using this data, the Researcher calculated the capability areas in the top and bottom quartile of emphasis for each year, and the relative change in emphasis across the capability areas between these two points.

Sections 9.3 and 9.4 detail the key findings arising from this investigation. The structure of these two sections is as follows:

Section 9.x.1 provides a summary the capability areas appearing in the *top quartile* for the five companies during the year. Next, the Researcher highlights commonalities and differences between the companies and the capability areas appearing in the *top quartile*.

Section 9.x.2 provides a summary the capability areas appear in the *bottom quartile* for the five companies during the year. Next, the Researcher highlights commonalities and differences between the companies and capability areas appearing in the *bottom quartile.*

Section 9.x.3 analyses the commonalities and differences with regard to (1) the structure of the *BPM Initiatives* and the level of *Executive Buy-In* and (2) the factors and capability areas of the *BPM Capability Framework* during the year.

9.3 First Year Emphasis on Capability Areas

The Researcher selected the first year of each company's *BPM Initiative* in order to explore how they commenced their BPM journey.

[103] See Chapter 7 for further details.

9.3.1 Capability Areas in the Top Quartile

The shaded areas of Table 82 depict the capability areas that were in the top quartile for each company with regard to the level of emphasis received. The shaded areas with the bold black outline reflect the most highly emphasised capability area/s for each company.

Factor	Capability area	Company				
		S	T	U	V	W
Strategic Alignment	Process Improvement Planning	3.4		4.2		
	Strategy & Process Capability Linkage	2.8				
	Enterprise Process Architecture	4.6			5.0	
	Process Measures					
	Process Customers & Stakeholders		2.7			4.4
Governance	Process Based Decision Making					
	Process Roles & Responsibilities				4.8	
	Process Metrics & Performance Linkage					
	Process Related Standards					
	Process Based Compliance					
Methods	Process Design & Modelling	2.8		4.6	5.0	4.8
	Process Implementation & Execution			4.2		
	Process Control & Monitoring					4.3
	Process Improvement & Innovation			4.5	5.8	
	Process Project & Program Mgmt					
Information Technology	Process Design & Modelling				4.8	6.3
	Process Implementation & Execution			4.4		
	Process Control & Monitoring		3.0			
	Process Improvement & Innovation		3.0			
	Process Project & Program Mgmt					
People	Process Skills & Expertise					4.8
	Process Management Knowledge		2.7			
	Process Education & Learning		2.7			
	Process Collaboration & Communication	3.4	2.7			4.4
	Process Leaders					
Culture	Responsiveness to Process Change	3.8		4.2	5.0	4.9
	Process Values & Beliefs		2.7		4.8	
	Process Attitudes & Behaviours		2.7			4.3
	Leadership Attention to Process	3.6	2.7			
	Process Management Social Networks	3.2	2.7			

Table 82: First Year – Capability Areas in the Top Quartile

Eight capability areas (i.e. 27%), did not appear in the top quartile for any company. These areas were:

- Strategic Alignment – Process Measures
- Governance – Process Decision Making
- Governance – Process Metrics and Performance Linkage
- Governance - Process Related Standards
- Governance – Process Based Compliance
- Methods – Process Project and Program Management
- Information Technology – Process Project and Program Management
- People – Process Leaders.

Strategic Alignment and *Culture* were the only two factors to have capability areas appearing in the top quartile for all five companies. No single capability area appeared in the top quartile for all five companies. For four of the five companies (except Company T), two capability areas appeared in the top quartile:

- Methods – Process Design and Modelling
- Culture – Responsiveness to Process Change.

The most emphasised capability area for four of the five companies was from *Methods* or *Information Technology*. Company U and V were in *Methods*, and Company T and W were in *Information Technology*. Company S had its most emphasised capability area in *Strategic Alignment*.

Table 83 shows the distribution of capability areas in the top quartile across the factors.

Strategic Alignment	Governance	Methods	Information Technology	People	Culture
7	1	8	5	6	12

Table 83: First Year – Distribution of Capability Areas in the Top Quartile

Culture had the most capability areas in the top quartile accounting for 12 of the 39 capability areas (i.e. 31%). *Governance* had the least, with only one (i.e. 3%). The remaining capability areas spread across the remaining four factors with *Strategic Alignment* (7), *Methods* (8), *Information Technology* (5) and *People* (6).

The next sections highlight key aspects of the capability areas appearing in the top quartile for each factor and company.

Strategic Alignment

Table 84 is an extraction of the *Strategic Alignment* section of Table 82.

Factor	Capability area	Company				
		S	T	U	V	W
Strategic Alignment	Process Improvement Planning	3.4		4.2		
	Strategy & Process Capability Linkage	2.8				
	Enterprise Process Architecture	4.6			5.0	
	Process Measures					
	Process Customers & Stakeholders		2.7			4.4

Table 84: First Year – Strategic Alignment Top Quartile

Company S was the only company that had more than one *Strategic Alignment* capability area in the top quartile with three areas, including the highest ranked area in this quartile. All four remaining companies had only one *Strategic Alignment* capability area in the top quartile.

Process Measures did not appear in the top quartile for any company. *Strategy and Process Capability Linkage* appeared in the top quartile for only one company, Company S. *Process Improvement Planning*, *Enterprise Process Architecture*, and, *Process Customers and Stakeholders* were each in the top quartile for two companies.

Governance

Table 85 is an extraction of the *Governance* section of Table 82.

Factor	Capability area	Company				
		S	T	U	V	W
Governance	Process Based Decision Making					
	Process Roles & Responsibilities				4.8	
	Process Metrics & Performance Linkage					
	Process Related Standards					
	Process Based Compliance					

Table 85: First Year – Governance Top Quartile

Only one of the five companies had a *Governance* capability area in its top quartile, this being Company V.

Process Roles and Responsibilities was the only capability area in the top quartile for any company.

Methods

Table 86 is an extraction of the *Methods* section of Table 82.

Factor	Capability area	Company				
		S	T	U	V	W
Methods	Process Design & Modelling	2.8		4.6	5.0	4.8
	Process Implementation & Execution			4.2		
	Process Control & Monitoring					4.3
	Process Improvement & Innovation			4.5	5.8	
	Process Project & Program Mgmt					

Table 86: First Year – Methods Top Quartile

Four of the five companies had *Methods – Process Design and Modelling* in their top quartile, with the exception being Company T. Company T was also the only company not to have any *Methods* capability areas in the top quartile. Company S had only one capability area in their top quartile.

Process Improvement and Innovation was in the top quartile for Company U and Company V, being the highest ranked area for Company V and the second highest area for Company U, next to *Process Design and Modelling*. *Process Project and Program Management* was not in the top quartile for any company.

Information Technology

Table 87 is an extraction of the *Information Technology* section of Table 82.

Factor	Capability area	Company				
		S	T	U	V	W
Information Technology	Process Design & Modelling (IT)				4.8	6.3
	Process Implementation & Execution (IT)			4.4		
	Process Control & Monitoring (IT)		3.0			
	Process Improvement & Innovation (IT)		3.0			
	Process Project & Program Mgmt (IT)					

Table 87: First Year – Information Technology Top Quartile

Company S was the only company not to have any *IT* capability areas in the top quartile. Company T and W both had their most emphasised areas in *IT*.

IT – Process Project and Program Management was not in the top quartile for any company. *IT – Process Design and Modelling* was the only capability area to be in the top quartile for more than one organisation, being in the top quartile for Companies V and W.

People

Table 88 is an extraction of the *People* section of Table 82.

Factor	Capability area	Company				
		S	T	U	V	W
People	Process Skills & Expertise					4.8
	Process Management Knowledge		2.7			
	Process Education & Learning		2.7			
	Process Collaboration & Communication	3.4	2.7			4.4
	Process Leaders					

Table 88: First Year – People Top Quartile

Company U and Company V both had no capability areas from the *People* factor in the top quartile. Company T and W were the only two companies to have more than one capability area in the top quartile, with Company T having three and Company W, two.

Process Communication and Collaboration was in the top quartile for three companies, Companies S, T and W. *Process Leaders* was not in the top quartile for any company.

Culture

Table 89 is an extraction of the *Culture* section of Table 82.

Factor	Capability area	Company				
		S	T	U	V	W
Culture	Responsiveness to Process Change	3.8		4.2	5.0	4.9
	Process Values & Beliefs		2.7		4.8	
	Process Attitudes & Behaviours		2.7			4.3
	Leadership Attention to Process	3.6	2.7			
	Process Management Social Networks	3.2	2.7			

Table 89: First Year – Culture Top Quartile

Company S had three *Culture* capability areas in the top quartile and Company T, four. The remaining companies, Company U, V and W had one or two capability areas in the top quartile.

Responsiveness to Process Change was in the top quartile for four of the five companies, with the exception of Company T. All other capability areas were in the top quartile for two companies.

9.3.2 Capability Areas in the Bottom Quartile

The shaded areas of Table 90 depict the capability areas that were in the bottom quartile for each company with regard to the level of emphasis received during the first year. The shaded area with the bold black outline reflects the least emphasised capability area/s for each company.

Factor	Capability area	Company				
		S	T	U	V	W
Strategic Alignment	Process Improvement Planning		2.0		3.6	
	Strategy & Process Capability Linkage		2.0		2.8	
	Enterprise Process Architecture		2.0	3.0		3.1
	Process Measures		1.8			
	Process Customers & Stakeholders					
Governance	Process Based Decision Making		2.3	2.8		3.2
	Process Roles & Responsibilities		2.3			
	Process Metrics & Performance Linkage	1.2	1.8		2.6	2.9
	Process Related Standards					
	Process Based Compliance			3.0		
Methods	Process Design & Modelling					
	Process Implementation & Execution	1.5	2.0			2.9
	Process Control & Monitoring				3.0	
	Process Improvement & Innovation	1.3	2.3			3.9
	Process Project & Program Mgmt		1.8			
Information Technology	Process Design & Modelling	1.0	1.0	1.0		
	Process Implementation & Execution	1.5			2.6	2.8
	Process Control & Monitoring	1.0				2.3
	Process Improvement & Innovation	1.3				2.9
	Process Project & Program Mgmt	1.5				1.8
People	Process Skills & Expertise		2.0			
	Process Management Knowledge			2.2		
	Process Education & Learning			2.4	2.6	
	Process Collaboration & Communication					
	Process Leaders				3.5	
Culture	Responsiveness to Process Change					
	Process Values & Beliefs			2.2		
	Process Attitudes & Behaviours					
	Leadership Attention to Process			2.4		
	Process Management Social Networks				3.4	

Table 90: First Year – Capability Areas in the Bottom Quartile

Five capability areas (i.e. 17%) did not appear in the bottom quartile for any company, these areas being:

- Strategic Alignment – Process Customers and Stakeholders
- Governance - Process Related Standards
- Methods – Process Design and Modelling
- People – Process Collaboration and Communication
- Culture – Process Attitudes and Behaviours.

Governance, *Methods* and *Information Technology* have capability areas appearing in the bottom quartile for all five companies although no single capability area appeared in the bottom quartile for all companies. Two capability areas appeared in the bottom quartile for four of the five companies, being:

- Governance – Process Metrics and Performance Linkage (not Company U)
- Methods – Process Implementation and Execution (not Company V).

The least emphasised capability area for all five companies was from *Information Technology*. For Company V, capability areas from *Governance* and *People* shared this lowest ranking.

Table 91 shows the distribution of the capability areas in the bottom quartile across the factors.

Strategic Alignment	Governance	Methods	Information Technology	People	Culture
8	9	9	12	5	3

Table 91: First year – Distribution of Capability Areas in the Bottom Quartile

Culture had the least capability areas in the bottom quartile accounting for three of the 46 capability areas (i.e. 7%). *Information Technology* had the most, with 12 of the 46 capability areas (i.e. 26%). The remaining areas spread across the four factors of *Strategic Alignment* (8), *Governance* (9), *Methods* (9) and *People* (5).

The next sections highlight key aspects of the capability areas appearing in the bottom quartile for each factor and company.

Strategic Alignment

Table 92 is an extraction of the *Strategic Alignment* section of Table 90.

Factor	Capability area	Company				
		S	T	U	V	W
Strategic Alignment	Process Improvement Planning		2.0			
	Strategy & Process Capability Linkage		2.0		2.8	
	Enterprise Process Architecture		2.0			3.1
	Process Measures		1.8			
	Process Customers & Stakeholders					

Table 92: First Year – Strategic Alignment Bottom Quartile

Two of the five companies, Company S and U both had no *Strategic Alignment* capability areas in their bottom quartile. Company T had four, whilst the remaining two companies each had one capability area in the bottom quartile.

Process Customers and Stakeholders was the only *Strategic Alignment* capability area not to be in the bottom quartile for any company.

Governance

Table 93 is an extraction of the *Governance* section of Table 90.

Factor	Capability area	Company				
		S	T	U	V	W
Governance	Process Based Decision Making			2.8		
	Process Roles & Responsibilities					
	Process Metrics & Performance Linkage	1.2	1.8		2.6	2.9
	Process Related Standards					
	Process Based Compliance					

Table 93: First Year – Governance Bottom Quartile

Four of the five companies had *Process Metrics and Performance Linkage* in the bottom quartile, with the exception being Company U. Company U was the only company to have *Process Based Decision Making* appear in the bottom quartile.

Three *Governance* capability areas did not appear in the bottom quartile for any company, these being *Process Roles and Responsibilities*, *Process Related Standards* and *Process Based Compliance*.

Methods

Table 94 is an extraction of the *Methods* section of Table 90.

Factor	Capability area	Company				
		S	T	U	V	W
Methods	Process Design & Modelling					
	Process Implementation & Execution	1.5	2.0			2.9
	Process Control & Monitoring				3.0	
	Process Improvement & Innovation	1.3				
	Process Project & Program Mgmt		1.8			

Table 94: First Year – Methods Bottom Quartile

Three of the five companies, Company S, T and W, all had *Methods – Process Implementation and Execution* in their bottom quartile. Company U had no *Methods* capability areas in the bottom quartile.

Methods – Process Design and Modelling did not appear in the bottom quartile for any company.

Information Technology

Table 95 is an extraction of the *Information Technology* section of Table 90.

Factor	Capability area	Company				
		S	T	U	V	W
Information Technology	Process Design & Modelling	1.0	1.0	1.0		
	Process Implementation & Execution	1.5			2.6	2.8
	Process Control & Monitoring	1.0				2.3
	Process Improvement & Innovation	1.3				2.9
	Process Project & Program Mgmt	1.5				1.8

Table 95: First Year – Information Technology Bottom Quartile

Company S had all five *IT* areas in the bottom quartile and Company W had four. The remaining three companies had only one *IT* capability area in their bottom quartile but, in all cases, this was the least emphasised capability area for that company.

A capability area from *IT* was the least emphasised area for all companies with *IT – Process Design and Modelling* being the least emphasised for capability area for three of the five companies.

People

Table 96 is an extraction of the *People* section of Table 90.

Factor	Capability area	Company				
		S	T	U	V	W
People	Process Skills & Expertise		2.0			
	Process Management Knowledge			2.2		
	Process Education & Learning			2.4	2.6	
	Process Collaboration & Communication					
	Process Leaders				3.5	

Table 96: First Year – People Bottom Quartile

Company S and W were the only two companies not to have a *People* capability areas in their bottom quartile. Company T had only one, whereas Company U and V each had two.

Process Collaboration and Communication was the only *People* capability area not to appear in the bottom quartile for any company. *Process Education and Learning* was the only *People* capability area to be in the bottom quartile for two companies, being Company U and V.

Culture

Table 97 is an extraction of the *Culture* section of Table 90.

Factor	Capability area	Company				
		S	T	U	V	W
Culture	Responsiveness to Process Change					
	Process Values & Beliefs			2.2		
	Process Attitudes & Behaviours					
	Leadership Attention to Process			2.4		
	Process Management Social Networks				3.4	

Table 97: First Year – Culture Bottom Quartile

Company S, T and W had no *Culture* capability areas in their bottom quartile. Company V had only one and Company U had two.

Responsiveness to Process Change and *Process Attitudes and Behaviours* were not in the bottom quartile for any company. The remaining capability areas were in the bottom quartile for one company each.

9.3.3 Discussion of First Year

This section discusses the key points arising from the investigation of the first year of the *BPM Initiatives*. In keeping with the aims of the longitudinal study, this discussion focuses on (1) select demographics of the *BPM Initiative* being the structure and the level of *Executive Buy-In* and (2) the factors and capability areas from the *BPM Capability Framework*.

Structure of BPM Initiative and Level of Executive Buy-In

Company S, T and W shared similar structures for their *BPM Initiatives*. All three were intending to adopt BPM as an enterprise-wide initiative and commenced implementation using a project-based approach. *Executive Buy-In* for these companies was medium to low, ranging from 3.4 (S), 2.5 (T) and 1.9 (W) on a 7 point scale, with 7 – Very High.

The similarities in the *BPM Initiatives* during the first year for these companies included:

- Company T and W both had their most emphasised areas in *IT*. For Company T this was for *Process Control and Monitoring*, and *Process Improvement and Innovation*. For Company W this was for *Process Design and Modelling*
- Company S and Company W had a high proportion of *IT* capability areas in their bottom quartile with Company S having five and Company W, four
- Company S, T and W were the only companies to have *People* capability areas in the top quartile
- Company S and T had three and four *Culture* capability areas respectively, in their top quartile. This included the capability area, *Leadership Attention to Process*
- All three companies had *Process Metrics and Performance Linkage* in their bottom quartile, together with Company V
- All three companies had *Methods – Process Implementation and Execution* in their bottom quartile
- Company S and W both had no *People* capability areas in their bottom quartile and Company T had only one, being *Process Skills and Expertise.*

The following section highlights the key differences amongst these three companies.

Company S:

- Had three *Strategic Alignment* areas in the top quartile whereas all other companies had only one
- Was the only company ***not*** to have any *IT* capability areas in its top quartile
- Was one of only two companies with no *Strategic Alignment* areas in its bottom quartile, together with Company U.

Company T was:

- One of two companies with two *Culture* capability areas in its top quartile, the other being Company U
- The only company ***not*** to have *Methods – Process Design and Modelling* in its top quartile
- The only company ***not*** to have any *Methods* capability areas in the top quartile
- The only company ***not*** to have *Responsiveness to Process Change* in its top quartile
- The only company to have four *Strategic Alignment* capability areas in the bottom quartile.

Company W did not have any notable differences from other companies.

Company U and V also shared similar structures to their *BPM Initiatives*. Both were adopting BPM only within a defined customer facing area of their business and commenced implementation using a project-based approach. *Executive Buy-In* for these companies was medium to high, being 4.1 (U) and 5.0 (V) on a 7 point scale with 7 – very high.

The similarities in Companies U and V included:

- Both had *Methods – Process Design and Modelling* in their top quartile, together with Companies S and W
- They were the only two companies with no capability areas from the *People* factor in their top quartile
- They were the only two companies with only one *Methods* capability area in their bottom quartile
- They were two of the three companies with only one *IT* capability area in their bottom quartile, the other company being Company T. For all three companies the *IT* capability area was the least emphasised of all areas

- They were the only two companies to have more than one *People* capability area in their bottom quartile, each having two
- They were the only two companies to have *Culture* capability areas in their bottom quartile, having two and one respectively.

The next section shows the key differences between these two companies.

Company V was the only company that:

- Had any *Governance* capability areas in its top quartile, having one, being *Process Roles and Responsibilities*
- Had *Methods – Process Control and Monitoring* in its bottom quartile
- Did ***not*** have *Methods – Process Implementation and Execution* in its bottom quartile.

Company U was the only company that:

- Had *Governance – Process Based Compliance* in its bottom quartile
- Did ***not*** have the *Governance – Process Metrics and Performance Linkage* in its bottom quartile.

Factors and Capability areas

During the first year, across all companies there was a notable selection of capability areas relevant to undertaking process improvement/change projects (i.e. 36% of those areas in the top quartile). This reflected in two or more companies having in their top quartile, capability areas including:

- Strategic Alignment – Process Customers and Stakeholders (2)
- Methods – Process Design and Modelling (4)
- Methods – Process Improvement and Innovation (2)
- Information Technology – Process Design and Modelling (2)
- Culture – Responsiveness to Process Change (4).

At the same time, for companies with an enterprise-wide scope to their *BPM Initiatives*, there was also a notable selection of capability areas relevant to establishing a foundation for BPM thinking and co-ordination within an organisation (i.e. 39% of those areas in the top quartile, with 31% being from companies with an enterprise wide scope), including:

- Strategic Alignment – Process Improvement Planning (2)
- Strategic Alignment – Enterprise Process Architecture (2)
- People – Process Collaboration and Communication (3)
- Culture – Process Values and Beliefs (2)
- Culture – Process Attitudes and Behaviours (2)
- Culture – Leadership Attention to Process (2)
- Culture – Process Management Social Networks (2).

The exception to companies with an enterprise-wide scope was Company V being one of the companies emphasising *Strategic Alignment – Enterprise Process Architecture* and *Culture – Process Values and Beliefs*, and Company U being one of the companies emphasising *Strategic Alignment – Process Improvement Planning*.

Given the project-based approach to implementing the *BPM Initiatives* in all five companies, it was interesting that the capability areas of *Methods – Project and Program Management* and *Information Technology – Project and Program Management* did not appear in the top quartile for any company.

9.4 Last Year – Emphasis on Capability areas

This section considers the level of emphasis placed on different capability areas during the last year of the *BPM Initiatives*. All companies had active *BPM Initiatives* at the time of the case study. As the case studies occurred within a relatively short timeframe, the last year for all companies was 2007 (or some component thereof).

9.4.1 Capability Areas in the Top Quartile

The shaded areas of Table 98 depict the capability areas that were in the top quartile for each company with regard to the level of emphasis received. The shaded area with the bold black outline reflects the most highly emphasised capability area for each company.

Factor	Capability area	Company				
		S	T	U	V	W
Strategic Alignment	Process Improvement Planning	6.0		4.8		
	Strategy & Process Capability Linkage	5.0		4.5		
	Enterprise Process Architecture	5.7				
	Process Measures					
	Process Customers & Stakeholders					
Governance	Process Based Decision Making	5.0				
	Process Roles & Responsibilities					
	Process Metrics & Performance Linkage					
	Process Related Standards					
	Process Based Compliance				4.7	
Methods	Process Design & Modelling			4.5	5.2	6.2
	Process Implementation & Execution			5.5		
	Process Control & Monitoring					
	Process Improvement & Innovation		4.0	4.6	5.7	
	Process Project & Program Mgmt	5.0				
information Technology	Process Design & Modelling			5.0	5.7	6.4
	Process Implementation & Execution			4.5		
	Process Control & Monitoring		4.0		4.8	
	Process Improvement & Innovation		3.7			
	Process Project & Program Mgmt				4.7	
People	Process Skills & Expertise					6.1
	Process Management Knowledge		4.5			6.6
	Process Education & Learning		4.0			
	Process Collaboration & Communication	5.2	4.0			
	Process Leaders					6.1
Culture	Responsiveness to Process Change	5.5		5.2		6.2
	Process Values & Beliefs					
	Process Attitudes & Behaviours		3.8			
	Leadership Attention to Process	5.3				6.1
	Process Management Social Networks					

Table 98: Last Year – Capability Areas in the Top Quartile

Eight capability areas (i.e. 27%) did not appear in the top quartile for any company during the last year of the *BPM Initiative*. These areas were:

- Strategic Alignment – Process Measures
- Strategic Alignment – Process Customers and Stakeholders
- Governance – Roles and Responsibilities
- Governance – Process Metrics and Performance Linkage
- Governance - Process Related Standards
- Methods – Process Control and Monitoring
- Culture – Values and Beliefs
- Culture – Process Management Social Networks.

People and *Information Technology* were the only two factors with capability areas in the top quartile across all five companies. No single capability area appeared in the top quartile for all companies. Only four capability areas were in the top quartile of more than two companies during the last year, being there for three companies in each instance. These capability areas were:

- Methods – Process Design and Modelling
- Methods – Process Improvement and Innovation
- Information Technology – Process Design and Modelling
- Culture – Responsiveness to Process Change.

Table 99 shows the distribution across the factors, of capability areas in the top quartile.

Strategic Alignment	Governance	Methods	Information Technology	People	Culture
5	2	8	8	7	6

Table 99: Last Year – Distribution of Capability Areas in the Top Quartile

Governance had the least capability areas in the top quartile accounting for just two of the 36 capability areas (i.e. 6%). The remaining capability areas spread across the other five factors with *Strategic Alignment* (5), *Methods* (8), *Information Technology* (8), *People* (7) and *Culture* (6).

The next sections detail the capability areas appearing in the top quartile for each factor and company in more detail.

Strategic Alignment

Table 100 is an extraction of the *Strategic Alignment* section of Table 98.

Factor	Capability area	Company				
		S	T	U	V	W
Strategic Alignment	Process Improvement Planning	6.0		4.8		
	Strategy & Process Capability Linkage	5.0		4.5		
	Enterprise Process Architecture	5.7				
	Process Measures					
	Process Customers & Stakeholders					

Table 100: Last Year – Strategic Alignment Top Quartile

Only two of the five companies had capability areas from *Strategic Alignment* in the top quartile, being Company S with three and Company U with two.

Two *Strategic Alignment* capability areas were not in the top quartile for any companies, these being *Process Measures*, and *Process Customers and Stakeholders*.

Governance

Table 101 is an extraction of the *Governance* section of Table 98.

Factor	Capability area	Company				
		S	T	U	V	W
Governance	Process Based Decision Making	5.0				
	Process Roles & Responsibilities					
	Process Metrics & Performance Linkage					
	Process Related Standards					
	Process Based Compliance				4.7	

Table 101: Last Year – Governance Top Quartile

Only two of the five companies had a *Governance* capability area in the top quartile being Company S and Company V with one capability area each.

The capability areas of *Process Roles and Responsibilities*, *Process Metrics and Performance Linkage* and *Process Related Standards* were not in the top quartile for any company.

Methods

Table 102 is an extraction of the *Methods* section of Table 98.

Factor	Capability area	Company				
		S	T	U	V	W
Methods	Process Design & Modelling			4.5	5.2	6.2
	Process Implementation & Execution			5.5		
	Process Control & Monitoring					
	Process Improvement & Innovation		4.0	4.6	5.7	
	Process Project & Program Mgmt	5.0				

Table 102: Last Year – Methods Top Quartile

All companies had at least one *Methods* capability area in the top quartile in their last year. Company U had three and Company V had two. The remaining three companies each had one.

Two capability areas were in the top quartile for three companies being *Methods – Process Design and Modelling*, and *Methods – Process Improvement and Innovation*. *Methods – Process Control and Monitoring* was not in the top quartile for any company.

Information Technology

Table 103 is an extraction of the *Information Technology* section of Table 98.

Factor	Capability area	Company				
		S	T	U	V	W
information Technology	Process Design & Modelling			5.0	5.7	6.4
	Process Implementation & Execution			4.5		
	Process Control & Monitoring		4.0		4.8	
	Process Improvement & Innovation		3.7			
	Process Project & Program Mgmt				4.7	

Table 103: Last Year – Information Technology Top Quartile

Company S had no *IT* capability areas in the top quartile. Company V had three areas, Companies T and U had two and Company W, one.

All *IT* capability areas were in the top quartile for at least one company. *IT – Process Design and Modelling* was in the top quartile for three companies.

People

Table 104 is an extraction of the *People* section of Table 98.

Factor	Capability area	Company				
		S	T	U	V	W
People	Process Skills & Expertise					6.1
	Process Management Knowledge		4.5			6.6
	Process Education & Learning		4.0			
	Process Collaboration & Communication	5.2	4.0			
	Process Leaders					6.1

Table 104: Last Year – People Top Quartile

Company U and V had no *People* capability areas in the top quartile. Companies T and W each had three, and Company S had one. Companies T and W both had their most emphasised capability area from the *People* factor, *being Process Management Knowledge*.

All *People* capability areas were in the top quartile for at least one company. *Process Management Knowledge* was in the top quartile for two companies. *Process Collaboration and Communication* was in the top quartile for two companies.

Culture

Table 105 is an extraction of the *Culture* section of Table 98.

Factor	Capability area	Company				
		S	T	U	V	W
Culture	Responsiveness to Process Change	5.5		5.2		6.2
	Process Values & Beliefs					
	Process Attitudes & Behaviours		3.8			
	Leadership Attention to Process	5.3				6.1
	Process Management Social Networks					

Table 105: Last Year – Culture Top Quartile

Only two of the five companies had more than one *Culture* capability area in their top quartile. Company S and Company W both had two – *Responsiveness to Process Change* and *Leadership Attention to Process*. Company V was the only company with no *Culture* capability areas in its top quartile.

Two *Culture* capability areas were not in top quartile for any company, these being *Process Values and Beliefs*, and *Process Management Social Networks*. The capability area of *Process Attitudes and Behaviours* was in the top quartile of only one company.

9.4.2 Capability Areas in the Bottom Quartile

The shaded areas of Table 106 depict the capability areas that were in the bottom quartile of capability areas emphasised for each company. The shaded area with the bold black outline reflects the least emphasised capability area for each company.

Factor	Capability area	Company				
		S	T	U	V	W
Strategic Alignment	Process Improvement Planning					
	Strategy & Process Capability Linkage				3.0	
	Enterprise Process Architecture					
	Process Measures		3.0			
	Process Customers & Stakeholders					
Governance	Process Based Decision Making					
	Process Roles & Responsibilities		2.8	3.2		
	Process Metrics & Performance Linkage	1.7	2.3	1.8	2.8	3.1
	Process Related Standards	3.0				
	Process Based Compliance	3.0				
Methods	Process Design & Modelling		3.0			
	Process Implementation & Execution					3.6
	Process Control & Monitoring	2.8			3.3	
	Process Improvement & Innovation	2.5				4.7
	Process Project & Program Mgmt			3.0		
Information Technology	Process Design & Modelling	2.0				
	Process Implementation & Execution		3.0		3.7	4.2
	Process Control & Monitoring	1.0				3.8
	Process Improvement & Innovation	2.0		3.2		3.8
	Process Project & Program Mgmt					3.9
People	Process Skills & Expertise		2.5			
	Process Management Knowledge			3.0		
	Process Education & Learning			2.7	3.0	
	Process Collaboration & Communication					
	Process Leaders		2.8		3.6	
Culture	Responsiveness to Process Change					
	Process Values & Beliefs			2.7		
	Process Attitudes & Behaviours					
	Leadership Attention to Process		2.8	3.2		
	Process Management Social Networks				3.3	

Table 106: Last Year – Capability Areas in the Bottom Quartile

Six capability areas (i.e. 20%) did not appear in the bottom quartile for any company during the last year of the *BPM Initiative*, being:

- Strategic Alignment – Process Improvement Planning
- Strategic Alignment – Enterprise Process Architecture
- Strategic Alignment – Process Customers and Stakeholders
- Governance – Process Based Decision Making
- Culture – Responsiveness to Process Change
- Culture – Process Attitudes and Behaviours.

Governance, *Methods* and *Information Technology* all had capability areas in the bottom quartile, across all five companies. One capability area was in the bottom quartile for all five companies, this being:

- Governance – Process Metrics and Performance Linkage.

This capability area was the least emphasised area for four of the five companies and the second least emphasised for the remaining company.

Only one other capability area was in the bottom quartile for more than two companies during the last year of the *BPM Initiatives*, these companies being Companies T, V and W, and the capability area:

- Information Technology – Process Implementation and Execution.

Table 107 shows the distribution across the factors of capability areas in the bottom quartile during the latest year of the *BPM Initiatives*.

Strategic Alignment	Governance	Methods	Information Technology	People	Culture
2	9	7	10	6	4

Table 107: Last Year – Distribution of Capability Areas in the Bottom Quartile

Strategic Alignment had the least number of capability areas in the bottom quartile accounting for just two of the 38 capability areas (i.e. 5%). The remaining capability areas spread across the other five factors with *Governance* (9), *Methods* (7), *Information Technology* (10), *People* (6) and *Culture* (4).

The next sections consider the capability areas in the bottom quartile for each factor and company in more detail.

Strategic Alignment

Table 108 is an extraction of the *Strategic Alignment* section of Table 106.

Factor	Capability area	Company				
		S	T	U	V	W
Strategic Alignment	Process Improvement Planning					
	Strategy & Process Capability Linkage				3.0	
	Enterprise Process Architecture					
	Process Measures		3.0			
	Process Customers & Stakeholders					

Table 108: Last Year – Strategic Alignment Bottom Quartile

Only two companies had *Strategic Alignment* capability areas in the bottom quartile during the last year of their *BPM Initiatives*. This was Company T with *Process Measures* and Company V with *Strategy and Process Capability Linkage*.

Three capability areas were not in the bottom quartile for any company these being *Process Improvement Planning*, *Enterprise Process Architecture*, and *Process Customers and Stakeholders*.

Governance

Table 109 is an extraction of the *Governance* section of Table 106.

Factor	Capability area	Company				
		S	T	U	V	W
Governance	Process Based Decision Making					
	Process Roles & Responsibilities		2.8	3.2		
	Process Metrics & Performance Linkage	1.7	2.3	1.8	2.8	3.1
	Process Related Standards	3.0				
	Process Based Compliance	3.0				

Table 109: Last Year – Governance Bottom Quartile

All five companies had at least one *Governance* capability area in their bottom quartile. For four of the companies this was included their least emphasised capability area. Company S had three capability areas in the bottom quartile.

Process Metrics and Performance Linkage was in the bottom quartile for all five companies. With the exception of Company S, it was the least emphasised of all capability areas. *Process Based Decision Making* was the only *Governance* area not to be in the bottom quartile for any company. *Process Related Standards* and *Process Based Compliance* were only in the bottom quartile for Company S.

Methods

Table 110 is an extraction of the *Methods* section of Table 106.

Factor	Capability area	Company				
		S	T	U	V	W
Methods	Process Design & Modelling		3.0			
	Process Implementation & Execution					3.6
	Process Control & Monitoring	2.8			3.3	
	Process Improvement & Innovation	2.5				4.7
	Process Project & Program Mgmt			3.0		

Table 110: Last Year – Methods Bottom Quartile

All companies had at least one *Methods* capability area in the bottom quartile, with two companies (S and W) having two. No company had more than two capability areas in the bottom quartile.

All *Methods* capability areas were in the bottom quartile for at least one company. *Methods – Process Control and Monitoring*, and *Methods – Process Improvement and Innovation* were the only two capability areas that were in the bottom quartile for two companies.

Information Technology

Table 111 is an extraction of the *Information Technology* section of Table 106.

Factor	Capability area	Company				
		S	T	U	V	W
Information Technology	Process Design & Modelling	2.0				
	Process Implementation & Execution		3.0		3.7	4.2
	Process Control & Monitoring	1.0				3.8
	Process Improvement & Innovation	2.0		3.2		3.8
	Process Project & Program Mgmt					3.9

Table 111: Last Year – Information Technology Bottom Quartile

Company W had four *IT* capability areas in the bottom quartile, and Company S had three. Companies T, U and V each had one.

IT – Process Design and Modelling, and *IT – Process Project and Program Management* were the only *IT* capability areas to be in the bottom quartile of a single company. *IT – Process Implementation and Execution*, and *IT – Process Improvement and Innovation* were in the bottom quartile for three companies. *IT – Process Control and Monitoring* was in the bottom quartile for two companies.

People

Table 112 is an extraction of the *People* section of Table 106.

Factor	Capability area	Company				
		S	T	U	V	W
People	Process Skills & Expertise		2.5			
	Process Management Knowledge			3.0		
	Process Education & Learning			2.7	3.0	
	Process Collaboration & Communication					
	Process Leaders		2.8		3.6	

Table 112: Last Year – People Bottom Quartile

Companies S and W had no *People* capability areas in the bottom quartile during the last year of their *BPM Initiatives*. Companies T, U and V each had two.

Process Collaboration and Communication was the only *People* capability area not in the bottom quartile for any company. *Process Education and Learning*, and *Process Leaders* were in the bottom quartile for two companies.

Culture

Table 113 is an extraction of the *Culture* section of Table 106.

Factor	Capability area	Company				
		S	T	U	V	W
Culture	Responsiveness to Process Change					
	Process Values & Beliefs			2.7		
	Process Attitudes & Behaviours					
	Leadership Attention to Process		2.8	3.2		
	Process Management Social Networks				3.3	

Table 113: Last Year – Culture Bottom Quartile

Companies S and W had no *Culture* capability areas in the bottom quartile during the last year of their *BPM Initiative*. Company U had two and Companies T and V, one.

The capability areas of *Responsiveness to Process Change*, and *Process Attitudes and Behaviours* were not in the bottom quartile for any company. The capability area of *Process Values and Beliefs* was only in the bottom quartile of Company U and *Process Social Networks*, only for Company V.

9.4.3 Discussion of Last Year Emphasis

This section discusses the key points arising from the investigation of the last year of the *BPM Initiatives*. In keeping with the aims of the longitudinal study, this discussion focuses on (1) select demographics of the *BPM Initiative* being the structure and the level of *Executive Buy-In* and (2) the factors and capability areas from the *BPM Capability Framework*.

Structure of the BPM Initiative and the Level of Executive Buy-In

In the last year, Company S, T and W shared similar structures for their *BPM Initiatives*. All were adopting BPM as an enterprise-wide initiative. Whereas in the first year, all three of these companies commenced implementation using a project-based approach, in the last year two of the companies (T and W) had BPM teams operating as recognised centres of excellence.

In the last year, the *Executive Buy-In* for these companies had increased to medium through to high levels, ranging from 3.2 to 5.7 on a 7-point scale, with 7 – Very High. Company S and Company W had the highest *Executive Buy-In* at 4.8 and 5.7 respectively whilst Company T had the lowest *Executive Buy-In* for all companies at 3.2.

By the last year, the *BPM Initiatives* for Company U and V progressed from having a predominantly project-based approach to utilising pockets of excellence. The scope of the *BPM Initiative* for both companies was still restricted to a defined area of the business – the Customer Operations Group and the Global Business Solutions Team.

In the last year, the *Executive Buy-In* for Company U and Company V was 4.3 and 5.0 respectively, similar to the levels in the first year.

At the factor level, there were still notable similarities and differences between and within the two groups of companies. There was less distinction however, in the last year of the *BPM Initiatives* when considering individual capability areas.

In the companies with an enterprise wide scope (i.e. Companies S, T and W):

- Company S continued emphasising *Strategic Alignment* with three capability areas from this factor in their top quartile
- Companies T and W had a strong focus on *People*, each with three capability areas from this factor in their top quartile, including the capability area of *Process Management Knowledge* being the most emphasised capability area for both companies
- Company S and W had the strongest focus on *Culture*, each with the

same two capability areas from this factor in their top quartile

- Company S and W had a notable lack of emphasis on *IT*, each with three capability areas in the bottom quartile
- Company S and W both had no capability areas from *Strategic Alignment*, *People* and *Culture* in their bottom quartile. Companies T, U and V each had four capability areas across these factors.

The companies with a narrower scope (i.e. Companies U and V):

- Both continued to emphasise the *Methods* and *IT* factors, with these factors accounting for 63% (U) and 83% (V) of the capability areas in the top quartile.

Factors and Capability areas

During the last year, across all companies there was still a notable selection of capability areas relevant to undertaking process improvement/change projects (i.e. at least 33% of those areas in the top quartile). This reflected in at least three companies having in their top quartile capability areas including:

- Methods – Process Design and Modelling (3)
- Methods – Process Improvement and Innovation (3)
- Information Technology – Process Design and Modelling (3)
- Culture – Responsiveness to Process Change (3).

Only two capability areas from the *Governance* factor were in the top quartile: *Process Based Decision Making* for Company S and *Process Based Compliance* for Company V. The capability area of *Process Metric and Performance Linkage* however was in the bottom quartile for all five companies, being the least emphasised area for four of them.

The capability areas of *Methods – Process Design and Modelling* and *IT – Process Design and Modelling* were in the top quartile for the same three companies being T, U and V.

9.5 Change in Emphasis on Capability areas

Whilst a number of insights arose from considering where the companies placed emphasis in each of the years, there was also value in considering the change in emphasis and the variation in change, across time. Doing so enabled investigation of the reasons for variation in changes, a greater understanding of the nature and consequence of change, and consideration of questions such as:

- Does change occur uniformly across time or capability areas or a combination of the two, or does it vary?
- Where variance is noted, does it arise from the same influence or different influences?

9.5.1 Capability Areas with Greatest Change in Emphasis

The shaded areas of Table 114 depict the capability areas for each company that were in the top quartile for a change in emphasis over time. The shaded area with the bold black outline reflects the capability area for each company that showed the greatest amount of change from the first to the last year.

Factor	Capability area	Company				
		S	T	U	V	W
Strategic Alignment	Process Improvement Planning		0.8		0.2	
	Strategy & Process Capability Linkage		0.8			
	Enterprise Process Architecture		0.8	0.3		0.8
	Process Measures	1.1				
	Process Customers & Stakeholders					
Governance	Process Based Decision Making	1.5		0.3		0.9
	Process Roles & Responsibilities					
	Process Metrics & Performance Linkage					
	Process Related Standards					
	Process Based Compliance					
Methods	Process Design & Modelling					
	Process Implementation & Execution	1.3		0.3		
	Process Control & Monitoring					
	Process Improvement & Innovation		0.8			
	Process Project & Program Mgmt		0.9			0.6

Factor	Capability area	Company				
		S	T	U	V	W
Information Technology	Process Design & Modelling		2.3	4.0	0.2	
	Process Implementation & Execution	1.2			0.4	
	Process Control & Monitoring				0.2	0.7
	Process Improvement & Innovation					
	Process Project & Program Mgmt	1.8				1.1
People	Process Skills & Expertise					
	Process Management Knowledge		0.8	0.4		0.6
	Process Education & Learning	1.2			0.2	0.7
	Process Collaboration & Communication				0.1	
	Process Leaders					
Culture	Responsiveness to Process Change					
	Process Values & Beliefs					
	Process Attitudes & Behaviours			0.3		
	Leadership Attention to Process			0.3		
	Process Social Networks					

Table 114: Change in Emphasis – Top Quartile

Each company had at least one capability area from *Strategic Alignment*, *Information Technology* and *People* in the top quartile. For *Governance*, Companies T and V had no capability areas in the top quartile. For *Culture*, Company U was the only company with capability areas in the top quartile for change in emphasis.

No capability area appeared in the top quartile for all five companies, and only five capability areas were in the top quartile of change in emphasis for more than two companies, these being:

- Strategic Alignment – Enterprise Process Architecture
- Governance – Process Based Decision Making
- Methods – Process Design and Modelling
- People – Process Management Knowledge
- People – Process Based Education.

Table 115 shows the distribution of capability areas in the top quartile, across the factors.

Strategic Alignment	Governance	Methods	Information Technology	People	Culture
7	3	5	9	7	2

Table 115: Distribution of Capability Areas in the Top Quartile

Culture had the least capability areas in the top quartile for change, accounting for just two of the 33 capability areas (i.e. 6%). *Governance* also had a low number of areas included with only three of the 33 capability areas (i.e. 9%). The remaining capability areas spread across the other four factors with *Strategic Alignment* (7), *Methods* (5), *Information Technology* (9) and *People* (7).

The range of change in the top quartile across all companies was from 0.3 through to 3.7 on a 7-point scale, as shown in Table 116.

Company	Change in Capability Areas		
	Low	High	Absolute Range
Company S	1.1	1.8	0.9
Company T	0.8	2.3	0.5
Company U	0.3	4.0	3.7
Company V	0.1	0.4	0.3
Company W	0.6	1.1	0.5

Table 116: Range in Change – Top Quartile

The data in Table 114 and Table 116 shows that the amount of change for capability areas was variable across the companies. In Company V, the largest amount of change was quite low being no more than 0.4. For Company U however, the amount of change reached a high of 4.0, using a 7-point scale.

The data in Table 114 also showed that there was variability in the change within the capability areas, as shown in Table 117.

Amount of Change	Company				
	S	T	U	V	W
0 – 0.99	-	6	6	6	6
1 – 1.99	6	-	-	-	1
2 – 2.99	-	1	-	-	-
3 – 3.99	-	-	-	-	-
4+	-	-	1	-	-

Table 117: Variability between Companies – Top Quartile

Table 117 shows that, in many cases, the relative value of the change was consistent both across the companies and within the companies. This was evident with between 85 and 100% of capability areas for each company showing a level of change within one point (from a 7-point scale). There were notable differences within Companies T and U, however. For both these companies the capability area of *IT – Process Design and Modelling* reflected a higher change in emphasis than other capability areas over the same time. For Company T the change for this capability area was 1.4 points higher than the next highest and for Company U the change was 3.6 points higher.

Eleven capability areas (i.e. 37%) did not appear in the top quartile for any company with regard to a change in emphasis. These areas were:

- Strategic Alignment – Process Customers and Stakeholders
- Governance – Roles and Responsibilities
- Governance – Process Metrics and Performance Linkage
- Governance – Process Related Standards
- Governance – Process Based Compliance
- Methods – Process Design and Modelling
- Information Technology – Process Improvement and Innovation
- People – Process Skills and Expertise
- Culture – Responsiveness to Process Change

- Culture – Values and Beliefs
- Culture – Process Management Social Networks.

Capability areas for *Governance* and *Culture* were the most represented on this list, with four capability areas from *Governance* and three from *Culture* not included in the areas with the most change for any company.

The next section details the change in emphasis for capability areas in the bottom quartile across the five companies.

9.5.2 Capability areas with the Least Change in Emphasis

The shaded areas of Table 118 depict the capability areas that were in the bottom quartile for each company with regard to the change in emphasis given from the first year to the last year of the *BPM Initiative*. The shaded area with the bold black outline reflects the capability area with the least change in emphasis for each company.

Factor	Capability area	Company				
		S	T	U	V	W
Strategic Alignment	Process Improvement Planning					
	Strategy & Process Capability Linkage					
	Enterprise Process Architecture	0.2			(0.1)	
	Process Measures				(0.1)	
	Process Customers & Stakeholders		0.2	0.0		0.1
Governance	Process Based Decision Making					
	Process Roles & Responsibilities		0.2	0.0	(0.1)	
	Process Metrics & Performance Linkage	0.4		(0.1)		0.1
	Process Related Standards					
	Process Based Compliance					
Methods	Process Design & Modelling	0.4	0.2			
	Process Implementation & Execution				(0.1)	0.2
	Process Control & Monitoring	0.4				
	Process Improvement & Innovation					
	Process Project & Program Mgmt			(0.1)		

Factor	Capability area	Company				
		S	T	U	V	W
Information Technology	Process Design & Modelling					0.0
	Process Implementation & Execution		0.2			
	Process Control & Monitoring	0.0				
	Process Improvement & Innovation		0.2	(0.0)[104]		
	Process Project & Program Mgmt			(0.0)		
People	Process Skills & Expertise			(0.0)		0.3
	Process Management Knowledge					
	Process Education & Learning					
	Process Collaboration & Communication					0.3
	Process Leaders		0.2			
Culture	Responsiveness to Process Change	0.5			(0.2)	0.3
	Process Values & Beliefs		0.2		(0.2)	
	Process Attitudes & Behaviours				(0.1)	
	Leadership Attention to Process	0.5	0.0			
	Process Social Networks					

Table 118: Change in Emphasis – Bottom Quartile

Each company had at least one capability area from *Strategic Alignment*, *Governance* and *Methods* in the bottom quartile. For *People*, Companies S and W had no capability areas in the bottom quartile, whereas for *Culture*, Company U did not have any capability areas in the bottom quartile.

Information Technology was the only factor with every capability area in the bottom quartile for at least one company. No capability area appeared in the bottom quartile for all five companies.

Table 119 shows the distribution of the capability areas in the bottom quartile, across the factors.

[104] A (0.0) in this table recognises a reduction in emphasis on the capability area when calculated to two decimal places which is not apparent when the figure is rounded to one decimal point.

Strategic Alignment	Governance	Methods	Information Technology	People	Culture
6	6	6	6	4	8

Table 119: Distribution of Capability Areas in the Bottom Quartile

Culture had the most capability areas in the bottom quartile, accounting for eight of the 36 capability areas (i.e. 22%). The remaining capability areas spread across the other five factors with *Strategic Alignment* (6), *Governance* (6), *Methods* (6), *Information Technology* (6) and *People* (4).

The range of change in the bottom quartile across all companies was low, with the highest range being 0.5 from a 7-point scale, as shown in Table 120.

Company	Range in Change		
	Low	High	Absolute Range
Company S	0.0	0.5	0.5
Company T	0.0	0.2	0.2
Company U	(0.1)	0.0	0.1
Company V	(0.2)	(0.1)	0.1
Company W	0.0	0.3	0.3

Table 120: Range in Change – Bottom Quartile

The data in Table 118 and Table 120 also shows that the amount of change within the capability areas in the bottom quartile was low. To this end, of the 36 capability areas included in the bottom quartile:

- 17 capability areas (i.e. 47%) had a change of emphasis in the range from (0.1) to 0.1
- 12 capability areas (i.e. 33%) showed a *reduction* in emphasis over time[105]
- Only two capability areas (i.e. 6%) showed a change of 0.5, the highest amount of change.

[105] This includes those rounded to (0.0) from a negative figure at two decimal places.

Eight capability areas (i.e. 27%) did not appear in the bottom quartile for any company with regard to level of change over time. These areas included:

- Strategic Alignment – Process Improvement Planning
- Strategic Alignment – Strategy and Process Capability Linkage
- Governance – Process Related Standards
- Governance – Process Based Compliance
- Methods – Process Improvement and Innovation
- People – Process Management Knowledge
- People – Process Education and Learning
- Culture – Process Management Social Networks.

The only factor that had all capability areas in the bottom quartile for at least one company was *Information Technology*.

9.6 Discussion on Key Themes

In keeping with the aims of the longitudinal study, this section summarises the key points arising from the investigation of the change in emphasis from the first to the last year of the *BPM Initiatives*. This summary focuses on (1) select demographics of the *BPM Initiative* including the structure of the Initiative and the level of *Executive Buy-In* and (2) on the factors and capability areas from the *BPM Capability Framework*.

9.6.1 Structure of the BPM Initiative

When designing the data collection instruments for the longitudinal case study, the Researcher proposed categories for classifying the structure of the *BPM Initiative*. It became apparent however that the proposed categories were not sufficient. Rather the Researcher found that there was *a scope to the BPM Initiative* (i.e. the area of the company it applied to) and an *approach to implementing the BPM Initiative* (i.e. the means by which the company was implementing it). Consequently, in this section the Researcher discusses findings based on both the approach and the scope.

Scope

During the first year, three of the five companies were adopting an enterprise-wide scope to their *BPM Initiative,* Companies S, T and W. The remaining two companies, U and V were adopting the *BPM Initiative* only within a defined area of their business – the Customer Operations Group and the Business Improvement Team. The scope of the *BPM Initiatives* did not change through the duration of the study.

Within the first year, the Researcher identified commonality in the companies adopting a *BPM Initiative* with an enterprise-wide scope with a notable selection of capability areas that contributed to establishing a foundation for building BPM capability across an organisation. These companies also displayed a higher emphasis on these capability areas in the last year of the study.

This shows the potential for common paths of progression dependent on the *scope* of the *BPM Initiative* during early stages of implementation.

Approach

At the commencement of the *BPM Initiatives*, all five companies were using a project-based approach to implementation. During the first year of the *BPM Initiatives*, the Researcher identified some areas of commonality between all companies. The project-based approach of all companies reflected in a high emphasis on capability areas with a focus on process modelling, improvement and change during this first year.

This shows the potential for common paths of progression dependent on the *approach* to the *BPM Initiative* during early stages of implementation.

The approach to implementation then changed for a number of companies. From the first to the last year, two of the three companies with an enterprise-wide scope (i.e. Company T and W) recognised a BPM team as a centre of excellence through which co-ordinated projects were run as a body of work. Company S, the remaining company with an enterprise wide approach also had a small team running a co-ordinated program of projects for its *BPM Initiative* but did not refer to this as a centre of expertise. One of the companies with a narrow scope (i.e. Company V) also progressed from having an ad hoc, project-based approach to having a centre of excellence. Company U remained with having a project-based approach throughout the study.

This shows the potential for companies to change the structure of their *BPM Initiative* over time.

Furthermore, it suggests a staged approach to progression may be identifiable.

In the first year, no company emphasised capability areas that supported the co-ordinated management of projects and programs, such as the *Method* or *IT* capability areas for *Process Project and Program Management* being in the top quartile. For some companies, these capability areas were actually in the bottom quartile during the first year. Over time however, the emphasis on these capability areas increased for a number of companies, with the capability areas making it to the top quartile for the level of emphasis in the last year and for a change in emphasis.

This suggests that, as companies become more co-ordinated in their implementation of a *BPM Initiative*, building capability in areas of Process Project and Program Management becomes a higher priority.

Level of Executive Buy In

At the beginning of their *BPM Initiatives*, the three companies with an enterprise wide scope (i.e. Companies S, T and W) had lower levels of *Executive Buy-In* than did the two companies that had *BPM Initiatives* applied only within a defined area of the company.

This shows that a high level of *Executive Buy-In* to a *BPM Initiative*, either at the beginning or at a later stage, does not necessarily equate with an enterprise-wide scope.

It also shows that a low level of *Executive Buy-In* to a *BPM Initiative* during the early stages of a *BPM Initiative* does not necessarily equate with the *BPM Initiative* having a limited scope.

Consequently, the level of *Executive Buy-In* may not be a good predictor of the scope of a *BPM Initiative*.

All three companies with an enterprise-wide initiative reported having a mandate to progress the *BPM Initiative* at the time of commencement. Despite this, all three reflected low levels of *Executive Buy-In* at the beginning of the *BPM Initiative*. Company T lost its mandate part way through the journey due to changes in the executive and board[106]. In later stages of the *BPM Initiative* Company T displayed increasing similarities with Companies U and V and decreasing similarity with Companies S and W.

[106] See Chapter 8 for details.

This indicates that having a CEO (or equivalent) mandate for a *BPM Initiative* is different to the level of *Executive Buy-In*.

It also indicates that having a CEO (or equivalent) mandate for the *BPM Initiative* may be necessary to progress the development of some capability areas.

The two companies that had a narrow scope for their *BPM Initiative* and high levels of *Executive Buy-In* (i.e. Company U and Company V) were the only two companies to show a reduction in the emphasis placed on capability areas.

This shows that higher levels of *Executive Buy-In* do not necessarily lead to sustainability of emphasis on capability areas.

The three companies with an enterprise wide scope (S, T and W) all had a notable change in the levels of *Executive Buy-In* from the first to the last year with increases over their starting levels of 45%, 26% and 203% respectively. Conversely, the two companies (U and V) where the scope was within a defined business unit had only a small change in *Executive Buy-In* with it increasing over the starting level by only 5% and less than 1% respectively.

The variation within the change in *Executive Buy-In* for the three companies with enterprise wide *BPM Initiatives* shows that companies may achieve different outcomes from emphasising the same capability area.

All three companies with low levels of *Executive Buy-In* emphasised the capability area of *Culture – Leadership Attention to Process*. This capability area was in the top quartile for Company S in both the first and last year and for Company W in the last year. It was in the top quartile for Company T during the first year but had dropped to the bottom quartile by the last year. For Company U it was in the bottom quartile in both the first and the last year.

This shows that companies progress capability areas based on their own contextual environment. Those with a low level of *Executive Buy-In* emphasised *Leadership Attention to Process* whereas those that already had high levels of *Executive Buy-In* did not.

9.6.2 Factors and Capability areas

The data showed that the emphasis placed on capability areas during a given year and the change in emphasis on capability areas over time was variable. There was variability between companies, variability in the magnitude of change (see Table 116 and Table 120) and variability within companies (see Table 117).

This indicates that companies make a conscious selection of (1) the capability areas on which to place emphasis and (2) choose the amount of emphasis they place on them, in response to their own needs.

The data also showed that the direction of a change in emphasis on a capability area was not always positive, with a few companies showing either no change or negative change. Companies U and V were the only two companies to have a reduction in emphasis in any capability areas from the first year to the last.

This indicates that progression of capability areas is not always linear nor always in a forward direction.

Strength of Relationships

Only three capability areas (i.e. 10%) were not in the top quartile in either the first or the last year for any company being:

- Strategic Alignment – Process Measures
- Governance – Process Metrics and Performance Linkage
- Governance – Process Related Standards.

Two of these capability areas were consistently in the bottom quartile for both years, as shown in Table 121.

Capability Area	First Year	Last Year
Strategic Alignment – Process Measures	T	T
Governance – Process Metrics and Performance Linkage	S,T, V and W	S, T, V, U and W

Table 121: Capability areas not in Top Quartile

This table shows that the area of *Governance – Process Metrics and Performance Linkage* had a consistent low emphasis for virtually all companies in both the first and the last years. Furthermore, the area of *Governance – Process Metrics and Performance Linkage* was the least emphasised of all capability areas in the last year for four of the five companies, and the second least emphasised capability area for the remaining company.

Four capability areas (i.e. 13%) were not in the bottom quartile in either the first or the last year, these being:

- Strategic Alignment – Process Customers and Stakeholders
- People – Process Collaboration and Communication
- Culture – Responsiveness to Process Change
- Culture – Process Attitudes and Behaviours.

Three of these capability areas were in the top quartile for both years, as shown in Table 122.

Capability Area	First Year	Last Year
People – Process Collaboration and Communication	S, T and W	S and T
Culture – Responsiveness to Process Change	S, U, V and W	S, U and W
Culture – Process Attitudes and Behaviours	T and W	T

Table 122: Capability areas not in the Bottom Quartile

This table shows a consistently higher emphasis on these capability areas for a number of companies.

These examples show that there is potential for the strength of relationships to vary across and within the capability areas.

9.7 Chapter Summary

This chapter detailed the cross-case analysis of data looking for commonality and distinction within the five longitudinal case studies.

This chapter first provided a summary of the demographics of the companies and their *BPM Initiatives*. The next sections presented the analysis of case study data for the first year, the last year and the change between the years with regard to the level of emphasis the companies placed on the capability areas. Furthermore, the sections for the first and last years summarised the key points within each area for the year.

The chapter concluded with a discussion on the key themes that emerged from the data with regard to the structure of the *BPM Initiatives*, including their scope and approach, the levels of *Executive Buy-In* and the potential for relationships between the capability areas.

Based on the findings of this study to date, the next chapter proposes theory on the progression and measurement of *BPM Initiatives*.

10 Theory Building

Chapter 6 presented a number of theoretical implications for *BPM Progression* based on findings from the exploratory case study. In light of these earlier findings, the Researcher conducted a series of longitudinal case studies to investigate the progression of *BPM Initiatives* with a view to improving the generalisability of subsequent theory. Consequently, Chapters 7, 8 and 9 presented the longitudinal case studies, undertaken with five organisations. The aim of this chapter is to integrate the key findings of the study into theory on *BPM Progression* and a measurement model for *BPM Maturity*.

10.1 Chapter Overview

Section 2 considers the classification of theory including Gregor's (2002 and 2006) *purpose* of theory, Sabherwal et al.'s (2001) *type* of theory and Edward and Bagozzi's (2000) *nature and direction* of relationships between constructs and measures. Using these classifications, the Researcher presents the theory supported by this study as follows. Section 3 positions the *BPM Capability Framework* and a typology for *BPM Initiatives* as theories for analysing (Gregor, 2006). Section 4 details an explanatory theory (Gregor, 2006) for *BPM Progression*. Section 5 positions the explanatory theory against Sabherwal et al.'s (2001) punctuated equilibrium theory. Section 6 details an explanatory and predictive (EP) theory (Gregor, 2006) for *BPM Maturity*. Section 7 positions the EP theory as a multi-dimensional, formative model. Section 8 provides a summary of the chapter.

10.2 Classification of Theory

Researchers including Sutton and Staw (1995) and Weick (1995) have discussed what does or does not constitute theory. In this study, the Researcher classifies the proposed theory based on its *purpose* (as defined by Gregor, 2002 & 2006), its *type* (as defined by Sabherwal et al., 2001) and the *nature* of its constructs (as defined by Edwards & Bagozzi, 2000).

10.2.1 Types of Theory

Gregor (2006) defines five theory types based on the *purpose* or *goals* of the theory these being analysing, explaining, predicting, explaining and predicting (EP theory), and design and action. According to Gregor (2006), classification by *purpose* depends on the underlying question of the research. Gregor (2006) indicates that, within IS, classification of theory by its *purpose* is appropriate, as it is an applied discipline. Furthermore, understanding the *purpose* of the theory defines what the theory aims to achieve and guides the basic elements that the theory should contain.

Sabherwal et al. (2001) provide an alternative means of defining the *type* of theory categorising IS Management theory into universalistic, contingency, lifecycle and punctuated equilibrium theories. The basis for their classification of theory is the underlying assumptions made with regard to the phenomenon under investigation and the environment in which the phenomenon occurs. Sabherwal et al. (2001) indicate that classification in this way is useful in studying strategic IS management as a dynamic concept rather than a static one.

Edwards and Bagozzi (2000) distinguish theory based on the *nature and direction* of the relationship between constructs and measures. To this end, Edwards and Bagozzi (2000) distinguish between *reflective* and *formative* measures. The basis for their classification lies in the causal direction of the relationship between the construct and measure.

Within this study, the Researcher sees value in applying each of these distinctive classifications of theory. Considering Gregor's (2002, 2006) *purpose* of the theory is useful because it defines what should be included within each theory

type. It also enables the identification of different types of theory that meet different purposes and contribute to building a cumulative body of knowledge. Considering Sabherwal et al.'s (2001) *types* of theory is useful as it contributes to defining the circumstances and assumptions under which the stated theory applies. In doing so, it defines the generalisability of the theory and increases its transferability. Furthermore, this classification acknowledges the temporal nature of progression. Considering Edwards and Bagozzi's (2000) *nature and direction* between constructs and measures is important as it contributes to the future testability of the theory.

10.2.2 Theory Supported by this Study

The theory supported by this study as categorised by Gregor's (2002, 2006) *purpose* is set out in Table 123.

Theory	Purpose (Gregor 2002 & 2006)
BPM Capability Framework	Theory for Analysing
Typology for *BPM Initiatives*	Theory for Analysing
Theory for *BPM Progression*	Theory for Explaining
BPM Maturity Measurement Model	Theory for Explaining and Predicting (EP Theory)

Table 123: BPM Theory supported by this Study

The following sections provide further insights into each of these theories. Subsequent sections position the proposed *explanatory theory* using Sabherwal et al.'s (2001) classification and the proposed *EP theory*, using Edwards and Bagozzi's (2000) distinction between formative and reflective constructs.

10.3 Theory for Analysing

According to Gregor (2006, 622):

> *"…Analytic theories analyse "what is" as opposed to explaining causality or attempting predictive generalizations..."*

Gregor (2002) defines two types of theory for analysing, including *naming* and *classification*. In particular Gregor (2002, 7) states:

> *"…A naming theory is a description of the dimensions or characteristics of some phenomenon. A classification theory is more elaborate in that it states that the dimensions or characteristics of a given phenomena are structurally interrelated. The dimensions may be mutually exclusive, overlapping, hierarchical or sequential..."*

Gregor (2006) extends earlier work, defining a *"Theory for Analyzing"*, indicating that this type of theory includes frameworks, taxonomies, typologies and classification schema. Gregor (2006) suggests analysing theory is valuable when the phenomenon under investigation is largely unknown. Furthermore, Gregor (2006) claims theory that provides clear definition of constructs is necessary for the development of all other theory types.

Within this study, the Researcher makes two contributions that satisfy as theory for analysing (as defined by Gregor, 2006) – a framework for classifying factors critical to progressing *BPM Initiatives* based on the capability areas that define them, and a typology for classifying *BPM Initiatives*. The following sections detail these contributions.

10.3.1 The BPM Capability Framework

The Researcher proposed the *BPM Capability Framework* following the Delphi studies in Chapter 5. Figure 49 reiterates this framework.

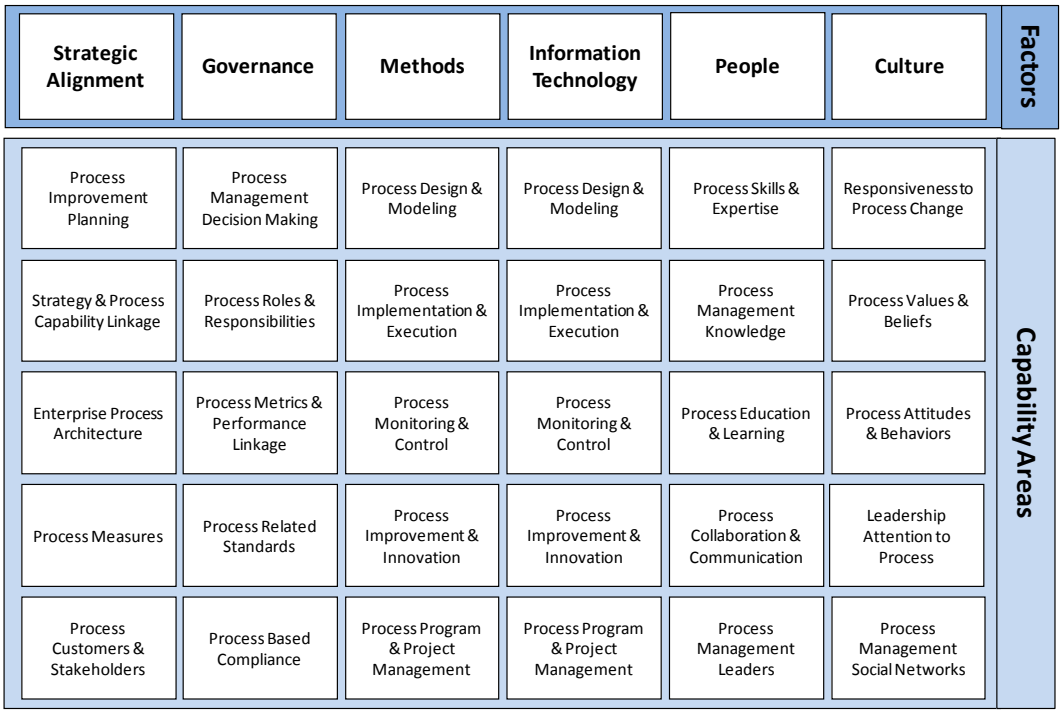


Figure 49: BPM Capability Framework

This framework satisfies Gregor's (2002, 2006) requirements of theory for analysing as shown in Table 124.

Theory Component	Instantiation
Means of Representation	Words, diagrams.
Primary Constructs	Factors and Capability Areas.
Statements of Relationships	Two tiers with six Factors, each further defined by five Capability Areas.
Scope	A means for understanding the important components of BPM and enabling the subsequent identification of measurement items.
Causal Explanations	Not present.
Testable Propositions	Not present.
Prescriptive Statements	Not present.

Table 124: The BPM Capability Framework as a Taxonomic Theory

The *BPM Capability Framework* was developed at a time when little was known about how the factors critical to the progression of *BPM Initiatives* might be measured and defined. The framework provides delineation between the constructs (i.e. the factors) and their associated measures (i.e. the capability areas). In so doing, this framework defines what is important in measuring the progression of *BPM Initiatives* but does not provide insights into the relationships between these components. Furthermore, the development of this framework enabled the conduct of further case studies that led to the subsequent development of explanatory and EP theory.

10.3.2 Typology of BPM Initiatives

In Chapter 1 and Chapter 3, the Researcher distinguished between three common applications of the term BPM that occur within extant literature. The basis for this distinction was BPM as a technology solution, BPM as a lifecycle approach to the management of processes, and BPM as an organisational approach focused on the management of the organisation using a process perspective, as opposed to the traditional functional view.

These differing views of BPM presented a challenge to this study. On the one hand, they made it difficult to compare and contrast existing literature, as it was not always clear to which BPM interpretation articles refer. On the other hand, in conducting case studies, the Researcher had to contend with the possibility that the *BPM Initiatives* within the participating organisations could vary, dependent on the interpretation of BPM adopted by each organisation. To address these issues, the Researcher used definitions of both BPM and *BPM Initiative* when collecting data in combination with a pre-defined list of BPM structures[107].

The definition of BPM separated the traits, characteristics and principles of BPM (i.e. the philosophy of BPM) from the structure of the *BPM Initiative* within an organisation. The pre-defined list attempted to capture different structures of *BPM Initiative* including categories of: *Ad Hoc, Project Based, Centre of Excellence* and *Enterprise-wide Program*. At the time, the intention was for

[107] Chapter 1 details these definitions.

companies to position their *BPM Initiative* against one of these categories.

During the longitudinal case studies however, it became apparent that the pre-defined list of structures was not sufficient, as the *BPM Initiatives* within companies did not fit into just one of the categories. In some cases, participants within a single company selected different options. In other cases, participants provided additional commentary with regard to their selection. Within Company V for example, three participants selected *Project Based*, two participants selected *Pockets of Excellence* and one participant selected both *Project Based* and *Pockets of Excellence*. Company T had a similar discrepancy between participants, as did Company W. In Company S however, all participants selected *Enterprise Wide Program* but the Key Contact, who was also the Program Manager for the *BPM Initiative*, provided further insight, stating:

> *"…we have an **enterprise-wide program** in that we have conducted a review of work processes across the organisation (…) but it's **project-based** in that we are running a program of projects that include, establishment of BPM framework, an overall change and renewal framework and an enterprise model."*

The practical insights and experiences gained during the case studies, combined with the conflicting interpretative aspects of the term BPM within the extant literature, led the Researcher to propose a typology for *BPM Initiatives*, as shown in Figure 50. In doing so, the Researcher aims to contribute to future research by providing an effective and consistent means of categorising *BPM Initiatives*.

Figure 50 shows the proposed typology, depicting the concept of the *BPM Initiative* as a combination of *scope* and *approach.* This typology integrates these elements with the three common interpretations of BPM from Chapter 1.

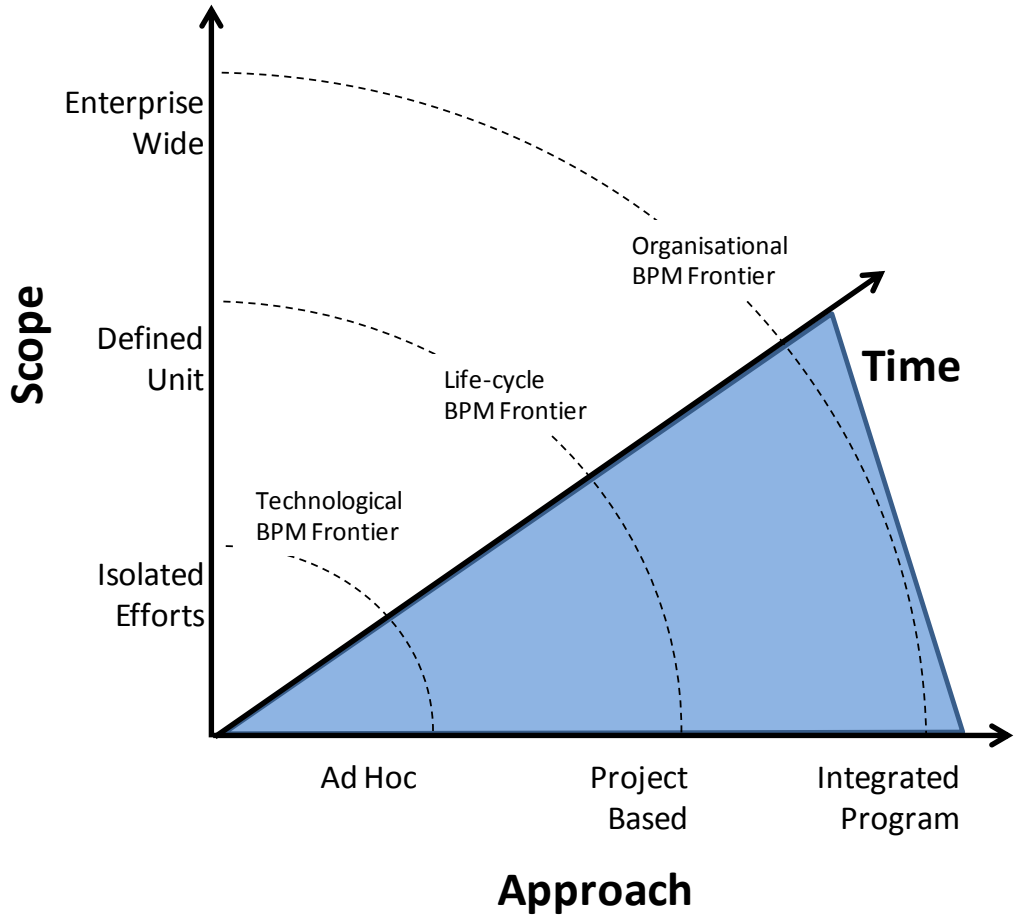


Figure 50: Typology for BPM Initiatives

In the context of the proposed typology:

Scope means the extent to which the *BPM Initiative* applies within an organisation (i.e. Does it apply to the entire organisation, only within a single business unit or some other defined component of the business?).

Approach refers to the manner in which the organisation operationalises the *BPM Initiative* (i.e. Is it an ad hoc approach to process improvement projects, a project-based process improvement program or a fully integrated program including process change and review projects?).

Time recognises the notion of time, being the passage of time from when an organisation begins to recognise process improvement or management within the organisation.

This depiction derives (in part) from Porter's (1996) concept of productivity frontiers in strategic management. When comparing operational effectiveness to strategic positioning, Porter (1996) saw the availability of processes, technologies and best practice as enabling an organisation to operate at maximum efficiency, while seeing the strategies for combining these as what differentiated organisations, enabling higher returns.

The Researcher contends that Porter's arguments can also apply to *BPM Initiatives*. The principles of BPM aim at maximising the efficiency and effectiveness of processes, technologies and best practice through the streamlining, standardisation, integration and automation of processes[108]. It is the manner in which each organisation applies BPM principles however, that will determine the consequences of their application. This is due, in part, to the varying definitions of BPM discussed earlier in Chapters 1 and 3 (i.e. Technology, Lifecycle and Organisational) and thus the different types of *BPM Initiatives* that can exist in an organisation.

By way of example: in Chapter 1 the Researcher proposed a definition for BPM including (among others) principles such as standardising and streamlining processes, eroding cross-functional boundaries, simplifying process work and defining the end-to-end processes of the organisation. The Researcher also recognised that the *BPM Initiative* within organisations could vary dependent upon the interpretation of BPM (i.e. Technology, Lifecycle and Organisational). In an organisation with a limited scope to their *BPM Initiative*, having it apply within a single technologically based project or business unit, the ability to erode cross-functional boundaries may be restricted to those that touch on the business unit in questions. Similarly, the ability to standardise and streamline processes may be limited to only those within the business unit. Alternatively, where a *BPM Initiative* encompasses the entire organisation such principles may apply more broadly within the organisation, and may even address external boundaries with customers and other stakeholders. The ability of the organisation to optimise process outcomes *across the entire organisation* is therefore greater.

[108] See the definition of BPM in Chapter 1 for further details of the BPM principles.

Consequently, the Researcher proposes that a company adopting an organisational BPM approach has the potential to achieve a higher level of organisational performance, *over time*, with a common bundle of processes, technologies and best practice, than those that adopt a lifecycle approach. In turn, those that adopt a lifecycle approach have the potential to achieve more, *over time*, than those that adopt a technological view of BPM.

Further research is required to substantiate this proposed typology. If substantiated, the typology would become an EP theory as the structure of the *BPM Initiative* would become predictive of the level of achievement, over time. This argumentation is consistent with Gregor's (2006) example of the categorisation of Miles and Snow's (1978) ideal organisation types by Doty and Glick (1994).

10.4 Theory for Explaining

Gregor (2006) indicates that theory for explaining does not have testable predictions as its primary focus. Rather, it looks to explain how and why the phenomenon occurs. To this end, Gregor (2002, 2006) defines two sub-types of theory for explanation being its use as a *"sensitising device"* and as *"conjectures"*.

With regard to being a *sensitising device*, Gregor (2006) positions the theory as a high-level theory that serves to enlighten. Consequently, the theory does not aim at high generalisability but rather, is paradoxical, complex and unfamiliar, seeking to challenge conventional notions.

With regard to *conjectures*, Gregor (2002, 8) states:

> *"…conjectures are drawn from a study of how and why things happened in some particular real world situation. These conjectures could form the basis of subsequent theory development, or be used to inform practice…"*

Gregor (2006) suggests that many case studies fall into this lower level category. Furthermore, with regard to theories of explanation, Gregor (2006, 624) states:

"…the theory itself is an end product and not expected to lead to predictive, deterministic theory…"

Within this study, the Researcher proposes explanatory theory on *BPM Progression*. This includes conjectures derived from the experiences within the various case studies.

10.4.1 Explanatory Theory of BPM Progression

Throughout this study, a number of themes emerged with regard to the progression of *BPM Initiatives* within organisations. These themes include:

- The scope and approach to the BPM Initiative
- Organisational Context
- Changes in Contextual Variables
- Level of Executive Buy-In.

These themes form the basis of the proposed theory on *BPM Progression*, articulated on the next page. The themes also combine with the experience gained through the study to enable the Researcher to present a number of conjectures in Table 125. These conjectures lay the foundation for future studies by way of presenting testable propositions and hypotheses arising from this study.

Section 10.5 then provides an evaluation of the proposed explanatory theory for *BPM Progression* against Sabherwal et al. (2001) theory types. In doing so, it demonstrates how the case study data from this study supports the proposed theory. Classification against Sahherwal et al. (2001) theory types is also important to the subsequent proposal of the EP theory for BPM Maturity in Section 10.6. This is because it highlights key issues from BPM Progression that a measurement model needs to incorporate in order to avoid spurious results.

BPM Progression is dynamic and varies between organisations and over time.

- Progression is not always linear nor in a forward-direction and does not universally follow the same stages.
- *Common progression paths* may be identifiable based on the:
    a) *scope* of the *BPM Initiative*
    b) *approach* to implementing the *BPM Initiative*
- The organisational context (including the *Executive Buy-In* at that time) at the commencement of the *BPM Initiative* will influence the scope of the *BPM Initiative* and the approach taken to implementing the *BPM Initiative*.
- Variation in the progression of *BPM Initiatives* can arise due to any combination of the:
    a) *scope* of the *BPM Initiative*
    b) *approach* taken to implementing the *BPM Initiative*
    c) changes in the *organisational context* arising from changes in *contextual variables*
- Changes to the structure of the BPM Initiative and the organisational context in which it occurs will advance and / or constrain progression over time by redirecting, inhibiting or enabling the development of BPM capability areas along the progression path. This may have a positive, negative or neutral impact on progression.
- Significant changes in contextual variables may result in revolutionary periods of activity. A more stable, evolutionary period of activity will precede and succeed such a revolutionary period.

10.4.2 Conjectures from the Theory of BPM Progression

Conjecture	Case Study Evidence	Further Comment
Variation in Progression		
During early stages of implementation, companies adopting a *BPM Initiative* consistent with a lifecycle approach are likely to display higher emphasis on the Methods and IT factors than companies adopting a *BPM Initiative* consistent with an organisational approach.	See Longitudinal Cases – Company S, T and W for organisational approach and Company U and V for lifecycle approach.	Requires further research to substantiate.
During later stages of implementation, companies adopting a *BPM Initiative* consistent with a lifecycle approach are less likely to make as much progress in factors of Strategic Alignment, Governance, People and Culture than companies adopting a *BPM Initiative* consistent with an organisational approach.	See Longitudinal Cases – Company S, T and W for organisational approach and Company U and V for lifecycle approach.	Requires further research to substantiate.
Distinctive stages of progression may be discernible over time.	See Longitudinal Cases.	Requires further research to substantiate.
Factors will reflect more stability and show less variance than their capability areas over the same time.	See Longitudinal Cases.	Important insights into progression maybe overlooked if research focuses only at a factor level.
Variance in factors and capability areas is likely to be greater during earlier stages of progression and is likely to reduce during later stages of progression.	See Longitudinal Cases.	Requires further research to substantiate.
Organisational Context		
Adopting *BPM Initiatives* with an enterprise-wide scope	See Longitudinal Cases - Company S and Company	During early stages of implementation, this may not

Conjecture	Case Study Evidence	Further Comment
requires executive mandate.	W.	necessarily reflect in high levels of *Executive Buy-In.*
Without an executive mandate for an enterprise-wide scope, a lifecycle approach to the *BPM Initiative* is more likely.	See Longitudinal Cases – Company U and V.	Such Initiatives may display high levels of *Executive Buy-In* during early stages of implementation if driven by a small number of highly committed executives.
Commencing a *BPM Initiative* with a limited scope (i.e. defined to a discrete business area) is more likely in areas where processes are heavily transactional or where significant advancement can arise from automation or improvement.	See Longitudinal Cases – Company U and V.	Requires further research to determine whether the different interpretations of BPM (i.e. lifecycle and organisational) are more or less common in different situations.
Changes Leading to Variation in Progression Paths		
Organisations will use different strategies to progress capability areas dependent on the specifics of the organisation and the contextual variables in effect at the time.	See Company A, B and M for early insights. See Longitudinal Cases and Appendix 13.4.7 for examples of variation in practices.	Requires further research to develop understanding of *how* and *why* different strategies are selected and what impact this has on the overall success of the *BPM Initiative.*
The origin of a contextual variable may be internal or external to the organisation.	See all Case Studies.	Examples of internal variables include: *Executive Buy-In*, Organisational Commitment, Organisational Ownership Structure, Technology. Examples of external variables include: Legislation / Compliance, Market Conditions, Unionisation. Requires further research to develop complete list of all major contextual variables.
The impact of a change in any given contextual variable is	See Longitudinal Case	Requires further research to understand impact and/or

Conjecture	Case Study Evidence	Further Comment
temporal, and is likely to rise and fall over time.	Studies.	duration of affect.
Contextual variables can have a positive (i.e. cause a deliberate increase in emphasis) or a negative (i.e. cause a deliberate reduction or avoidance of) influence.	See Longitudinal Case Studies – Company U and V.	Requires further research to gain a deeper understanding of the possible consequences of different contextual variables and the associated affect of a change.
The impact of a given contextual variable is not always in the same direction.	See Company U for an example of where legislation has a decreasing impact and Company M for an example of legislation having an increasing impact.	Requires further research to understand further implications.
Unionisation can inhibit progress in some capability areas e.g. Governance – Process Roles and Responsibilities and Process Metrics and Performance Linkage.	See Company A and B for evidence of limitations and Company M for evidence where lack of unionisation was credited with being able to achieve progression.	Requires further research to understand the implications including the impact of redirection and the adoption of strategies for progression in these areas.
The characteristics of a company's workforce can affect the progression of some capability areas.	See Company A discussion on having to overcome a "culture of engineers". See Company B discussion on the consequence of "having a predominantly male workforce over the age of 45".	Requires further research to understand the implications including the impact of redirection and the adoption of strategies for progression in these areas.

Table 125: Conjectures about BPM Progression

10.5 Classification of Explanatory Theory

When investigating the evolution of alignment over time, Sabherwal et al. (2001) discussed the classification of theory based on its *type*. This classification included universalistic, contingency, lifecycle and general theories such as the punctuated equilibrium model. The next sections discuss each of these categories with regard to further classifying the explanatory theory supported by this study.

Universalistic Theory

The first type of theory discussed by Sabherwal et al. (2001) was *universalistic* theory, a description of which is below in Table 126.

Theory Type	Description
Universalistic	Present one way of performing management.
	Focus on how this way can be improved.
	Provide valuable insights through this focus.
	View the same approach as useful in all situations.
	Don't examine multiple approaches in alternate context.
	More appropriate to relatively narrow domains.

Table 126: Description of Universalistic Theory

Researchers such as Ittner and Larcker (1997), and Pritchard and Armistead (1999) have previously shown that there is more than one-way in which to progress BPM and that the same approach is unlikely to be useful in all situations. Furthermore, the focus of this study has not been on how to improve the progression of BPM, but rather on understanding the progression of *BPM Initiatives* within organisations.

Consequently, the theory this study supports does not satisfy the requirements of universalistic theory, as defined by Sabherwal et al. (2001).

Contingency Theory

The second type of theory Sabherwal et al. (2001) discussed was *contingency* theory as described in Table 127.

Theory Type	Description
Contingency	Examine effects of the environmental organisation and context on management.
	Static in nature focusing on a single point in time.
	Focus on short-term performance indicators.
	Consider the alignment between certain aspects of management from two areas (e.g. IS and business).

Table 127: Description of Contingency Theory

The cases studies in this study have shown that the inclusion of environmental context was appropriate to the progression of *BPM Initiatives*. Furthermore, an aspect of the study, (i.e. measuring *BPM Maturity*) was also static in nature, investigating how to measure *BPM Progression* at a given point in time.

In this study, the Researcher was also investigating the progression of *BPM Initiatives* over time. The Researcher defined *BPM Progression* as a dynamic concept that included the consideration of temporal aspects of progression. From a theoretical perspective (see Figure 1, p 13), this study did not consider performance indicators. There was also no consideration of the alignment between aspects of management, such as between functional management and BPM or between IT and BPM.

Consequently, the theory this study supports does not satisfy the requirements of contingency theory, as defined by Sabherwal et al. (2001).

Lifecycle Theory

The third type of theory Sabherwal et al. (2001) discussed was *lifecycle* theory as described in Table 128.

Theory Type	Description
Life Cycle	Take a more dynamic view (e.g. Galliers & Sutherland, 1991; Hirschheim et al., 1988; van de Ven & Poole, 1995).
	Do not recognise different context as important.
	Usually assume changes in all organisations take place along the same path (or stages).
	Changes are linear and assume movement in a forward direction towards a desired end goal.

Table 128: Description of Life Cycle Theory

Within this study, taking a dynamic view was appropriate and recognised at the beginning of the study with the definition of the terms *BPM Progression* (dynamic) and *BPM Maturity* (static). A lifecycle theory may appear to suit at least one of the common interpretations of BPM covered in this study, the lifecycle approach – as this often assumes a best-practice way of managing processes. The evidence from this study does not support the remaining elements of a lifecycle theory however.

All of the case studies have shown the importance of context and in a number of companies, changes in the organisational context actually led to the adoption of *BPM Initiative*. For example:

- Company A commenced its *BPM Initiative* in response to issues arising from the merger of six companies into one and the need to establish a 'single source of truth'
- Company B commenced its *BPM Initiative* in response to a change in government legislation that moved the organisation from being a government monopoly to being a GOC, required to operate on a commercial basis in a competitive market.

Furthermore, the outcomes from the longitudinal studies showed that changes within the *BPM Initiatives* of different companies progress along different paths, and that they are not always linear nor in a forward direction.

Consequently, the theory this study supports does not satisfy the requirements of lifecycle theory, as defined by Sabherwal et al. (2001).

Punctuated Equilibrium Theory

The final type of theory Sabherwal et al. (2001) discussed was *punctuated equilibrium* theory as described in Table 129.

Theory Type	Description
Punctuated Equilibrium	Argues that periods of gradual evolution are "punctuated" by sudden revolutionary periods of rapid change (e.g. Elderidge & Gould, 1972; Gersick, 1991; Newman & Robey, 1992; Orlikowski, 1993; Porra, 1996; Romanelli & Tushman, 1994; Sastry, 1997; van de Ven & Poole, 1995).
	Does not imply a forward direction towards a desired end goal.
	Open to alternative ways of managing over time.
	Does not assume the same stages are universally followed.

Table 129: Description of Punctuated Equilibrium Theory

The following sections detail how the evidence from this study supports the classification of the proposed explanatory theory on *BPM Progression* as a punctuated equilibrium theory.

Periods of *Gradual* Change Punctuated by *Rapid* Change

This study has shown that within a company, periods of change occur because (1) of the implementation of the *BPM Initiative* and (2) throughout the life of the Initiative in response to changes in the contextual environment and variables.

In the first case studies with Companies A and B, there was evidence that companies react to changes in their contextual environment, causing periods of heightened change. As seen in the previous section, in these cases, the initial period of revolutionary change saw the introduction of the *BPM Initiative*.

In the case study with Company M, the introduction of a new business system led to a related increase in the focus on changing the purchasing activities within a business process. As one executive stated:

> *"…we're making some major changes to the way we're doing things and we're going from a global material master (…) we've got to work out how we manage that change, because that impacts our business process…"*

This showed that there are recognised periods of heightened activity, dependent on the activities occurring within the *BPM Initiative* from time to time.

Within the longitudinal case studies, there was also evidence that companies can have periods of heightened change and periods of more stable and consistent change. Company U provides an example of this, whereby the availability of new process modelling software caused a peak in activity within one of the capability areas. In comparison, during the same time (i.e. from the first year to the last year of the *BPM Initiative* – 2003 to 2007), the emphasis on the remaining capability areas was notably lower and relatively constant across all capability areas. Figure 51 shows the significance of the peak in activity within IT – Process Design and Modelling, comparative to the other capability areas.

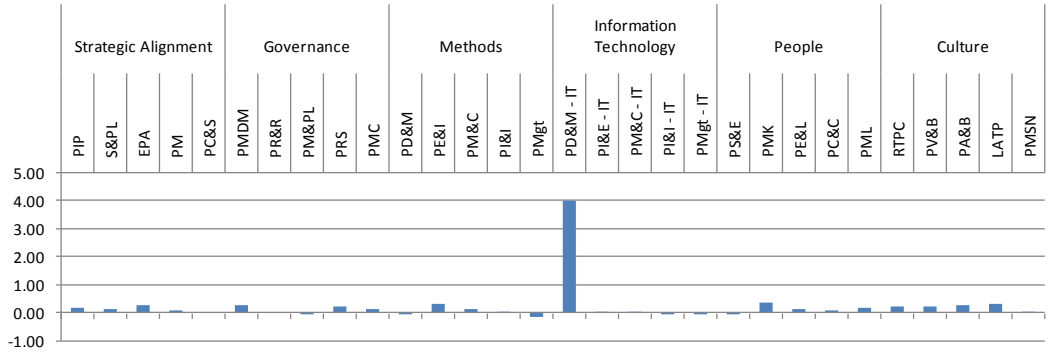


Figure 51: Example – Variability across Capability Areas (Company U)

Consequently, this study showed *BPM Initiatives* have periods of gradual evolution, punctuated by periods of heightened activity.

Moving Forward towards an End Goal

This study showed that the progression of BPM is not always in a forward direction. The first case study evidence supporting this notion came from Company M. When discussing the implementation of a new business system to

standardise a core process across multiple entities, an executive claimed:

> *"…we need to keep out of that 'valley of despair' as much as possible, so when you're planning for it and all of a sudden you do have that drop, you have to work hard just to get to where you were (…) we're trying to limit just how much of that 'valley of despair' we go into, so if we can keep it to just a little dip…"*

This showed that, whilst the intention was ultimately to move forward, there was recognition and acceptance that the realisation of benefits from some process improvement initiatives may not be realised immediately. Consequently, the effect on the progression of the BPM Initiative may be negative during that time. Furthermore, deliberate management action was required to minimise the magnitude of the backward movement.

The possibility of static or backward movement was also evident in the subsequent longitudinal case studies. A number of companies showed no change in some capability areas. Both Company U and Company V showed a reduction in the emphasis placed on some capability areas, over time, as seen in Figure 51 (above) and Figure 52 (below).

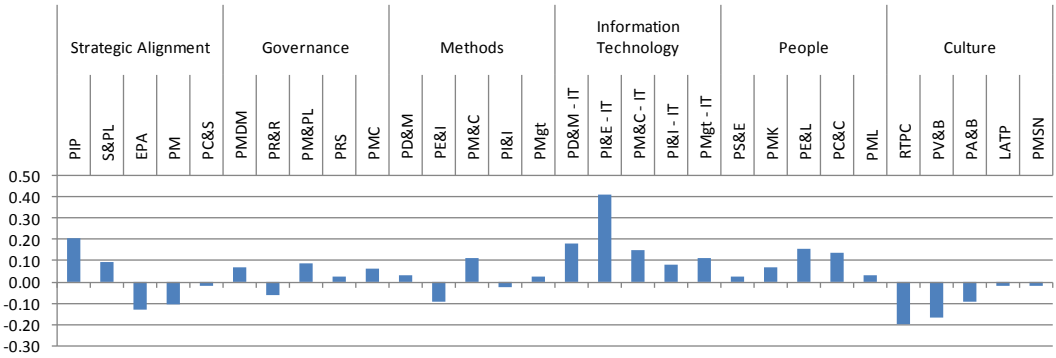


Figure 52: Example – Change in Capability Areas (Company V)

Consequently, this study showed that movement of the *BPM Initiative* is not always in a forward direction.

Alternative Ways of Managing Over Time

When looking at *BPM Initiatives*, this study showed that there could be variation in the approach to the management of the *BPM Initiative* and the practices adopted to manage and progress each capability area.

The demographics of the *BPM Initiatives* in the five longitudinal case studies provided evidence that there are alternative ways of managing *BPM Initiatives*. During the first year, the *BPM Initiatives* for three companies had an enterprise wide scope and a project-based approach to implementation. The remaining two companies had a narrower focus to their *BPM Initiatives* with them being applicable to only a defined area of the business.

Differences in demographics from the first year to the last year, provided evidence of a change in the approach to the management of the *BPM Initiatives* over time. When Company T commenced its *BPM Initiative*, responsibility for the *BPM Initiative* was with the General Manager of the Strategy Unit. The structure of the *BPM Initiative* was taking a project-based approach to implementing BPM throughout the enterprise. At the time of case study, the General Manager of the Shared Service Unit was responsible for the *BPM Initiative* and a *Centre of Excellence* had been established to manage and co-ordinate the activities of the *BPM Initiative* through a central area.

During the longitudinal case studies, the Researcher collected data regarding the management practices that companies adopted within each of the capability areas. The examples of these practices, contained in Appendix 13.4.7, show that companies adopt different practices to manage activities and progression in the capability areas.

Consequently, this study showed that companies use alternate ways of managing their *BPM Initiatives,* and the activities undertaken within the *BPM Initiatives*, over time.

Does not require Same Stages to be Universally Followed

In Chapter 9, the Researcher analysed the data from the longitudinal studies with regard to the demographics of the *BPM Initiatives*. In doing so, the Researcher separated the companies adopting a *BPM Initiative* as an enterprise-wide scope (i.e. Companies S, T and W), from those where the *BPM Initiative* had a narrower scope, applying only to a defined area within the business (i.e. Companies U and V). The subsequent analysis showed similarities in the progression of the *BPM Initiatives* within these groupings, as seen in Figure 53.

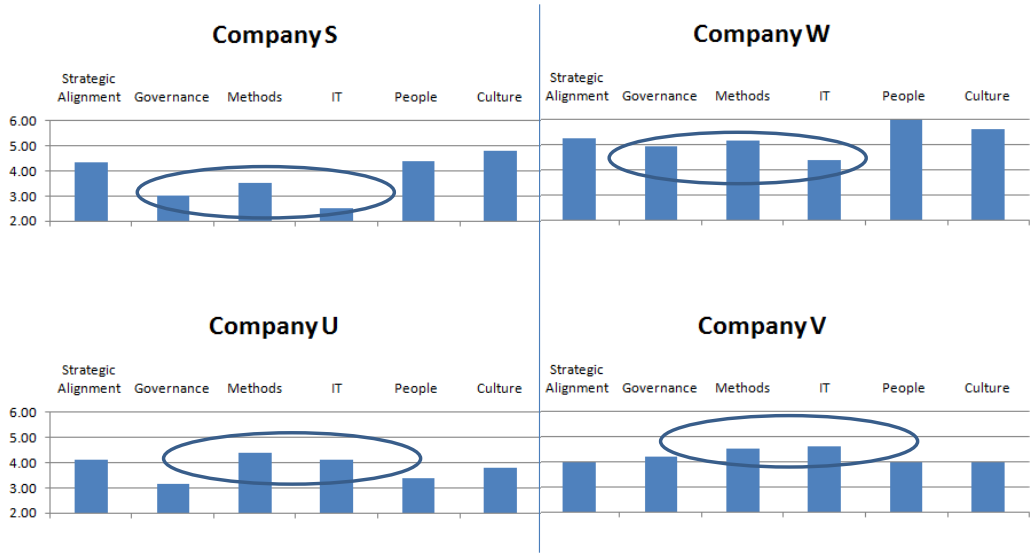


Figure 53: Example – Last Year Emphasis for Selected Companies

Figure 53 shows that in 2007, companies with an enterprise wide scope to their *BPM Initiatives* placed the least emphasis on the factors of *Governance, Methods* and *IT*. Alternately, companies where the *BPM Initiative* had a narrow scope placed the most emphasis on *Methods* and *IT* during the same period. The focus in Company U and Company V arose due to those organisations having more of a lifecycle interpretation applied to their *BPM Initiative* where their focus was on managing a process though the stages of its lifecycle by acquiring and utilising methods and tools to do so. Alternatively, those organisations that applied more of an organisational interpretation to their *BPM Initiative* displayed a greater focus on organisational factors such as *People*, *Culture* and *Strategic Alignment*.

Furthermore, throughout this study, there was evidence of the importance of context and of companies responding to their contextual environment in order to progress with their *BPM Initiatives*. This study showed that the necessity of responding to changes in context requires flexibility in progression paths.

Consequently, this study showed that progression of *BPM Initiatives* does not require that organisations universally follow the same stages.

10.6 Theory for Explaining and Predicting

The fourth type of theory Gregor (2006) presents is theory for explaining and predicting, or EP Theory. According to Gregor (2006, 26), EP theory aligns with common views from natural and social science and implies:

> *"…both understanding of underlying causes and prediction, as well as description of theoretical constructs and the relationships among them…"*

At the commencement of this study, the Researcher made a distinction between the dynamic notion of *BPM Progression* and the static notion of measuring progression at a single point in time, using the construct of *BPM Maturity*. In doing so, the Researcher aimed to contribute to further research relating to the measurement and understanding of *BPM Success*, *Process Success* and their subsequent contribution to *Organisational Performance*. The Researcher first depicted the theorised relationships between these constructs in Chapter 1.

Within this section, the Researcher first proposes a conceptual EP theory relating to *BPM Maturity*, including conjectures derived from the case study experiences. The Researcher uses the term conceptual here in recognition of future work that is required to progress the EP theory due to further research being required to understand completely the relationships between the factors and capability areas. The Researcher then shows how the case study evidence supports the proposition of this theory as a formative model, as opposed to the more common reflective model.

10.6.1 A BPM Maturity Measurement Model

The development of a measurement model for *BPM Maturity* commenced in Chapter 3, with the initial identification and subsequent refinement of the conceptual model including the six factors of *Strategic Alignment, Governance, Methods, Information Technology, People* and *Culture*. The subsequent extension of the conceptual model to include capability areas for each factor resulted in the *BPM Capability Framework*.

As discussed earlier in this Chapter, the *BPM Capability Framework* is a theory for analysing (as defined by Gregor, 2006). It does not have sufficient components to be predictive and thus is not an EP Theory. It does not for example, include details of the relationships between the factors and capability areas, nor does it provide any causal explanations or any testable propositions. This framework did however provide a base from which to continue the development of an EP theory for *BPM Maturity*, consistent with Gregor's (2006) view that analytic theory can provide a foundation for the future development of other theory types.

In the subsequent exploratory case study and the longitudinal case studies, the Researcher utilised the *BPM Capability Framework* as a base from which to explore the progression of the *BPM Initiatives*. This enabled the derivation of explanatory theory on *BPM Progression* as discussed in the previous section. In addition, this study has enabled the proposal of conceptual EP theory for *BPM Maturity* as shown in Figure 54 and including the conjectures detailed in Table 130.

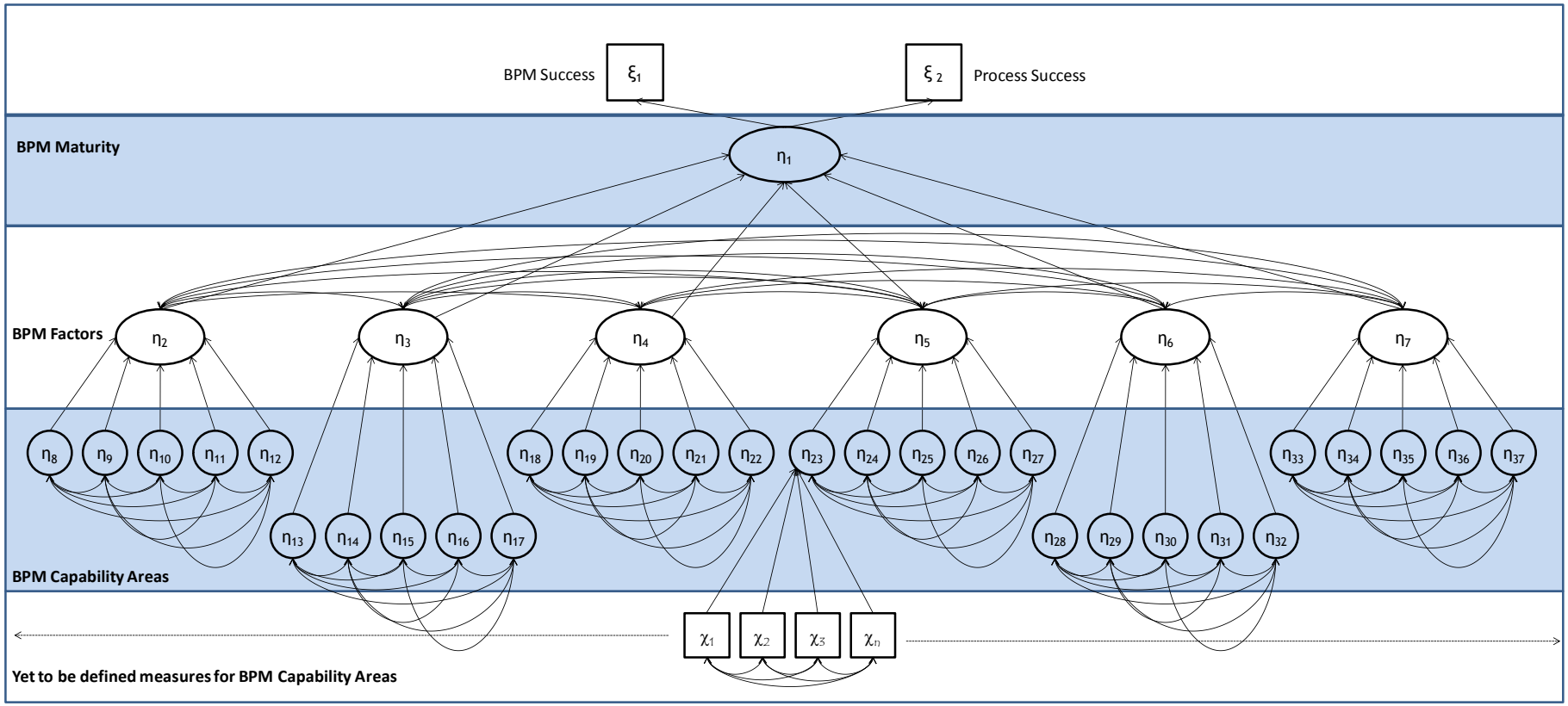


Figure 54: Proposed EP Theory for BPM Maturity

Conjecture	Comment
Factors	
The strength of the correlation between factors may vary over time.	Variation will potentially be less at higher stages of maturity as *BPM Initiatives* reach a point of equilibrium.
Variability in correlation between factors potentially relates to the structure of the *BPM Initiative* within the organisation.	*BPM Initiatives* where BPM equates to a lifecycle approach will potentially show higher correlation between Methods and IT during early stages of implementation than will *BPM Initiatives* where BPM equates to an organisational approach.
The relative importance of the factors will vary across organisations and over time.	Specific organisational context may result in companies focusing on certain factors over others at given times thus giving the potential for spurious results if not taken into account during measurement.
Capability Areas	
The strength of the relationship between the capability areas will vary across organisations and over time and is likely to relate to the environmental context of the organisations.	Organisations with similar environmental contexts may develop capability in similar areas at similar times resulting in common paths of progression in given situations.
A change in contextual variables may cause variability in correlation between capability areas.	A change in legislation may result in an increase in process, for example.
The relative importance of the capability areas will vary between organisations and over time.	Due to specific organisational context including resource constraints organisations may select to focus on certain capability areas over others at any given stage.
Causal relationships are likely to exist between capability areas. People - Process Education and Learning is likely to have a causal relationship with Culture – Process Attitudes and Behaviours, for example.	Further research is required to identify all relationships.

Table 130: Conjectures about BPM Maturity

10.7 Classification of EP Theory

The EP theory supported by this study and depicted in Figure 54 included multi-dimensional constructs. That is, the *BPM Maturity* construct was composed of multiple factors and the factors were composed of multiple capability areas. Furthermore, the Researcher proposed that the relationships between the constructs and variables were formative in nature. In support of this classification, the next sections discuss (1) the use of multi-dimensional constructs and (2) the selection of formative constructs as being most appropriate for measuring *BPM Maturity*.

10.7.1 Multi-Dimensional Constructs

There is some debate regarding the use of multi-dimensional constructs in theory building. Critics argue that, conceptually, theories including multi-dimensional constructs are ambiguous due to the relationship between the constructs and other variables (e.g. Hattie, 1985). Such critics claim that more than one explanation is possible for any variation in this relationship thus creating the ambiguity. Critics also argue that the differences in relationships with the dimensions are important to theory development (e.g. Johns, 1998).

Advocates of multi-dimensional constructs argue that theories should be general, combining specific dimensions using general constructs (e.g. Hanisch et al., 1998). To this end, Edwards (2001) suggests two approaches to theory development that aim to address both broad and specific questions:

(1) Developing theories that incorporate both multidimensional constructs and their dimensions and explain their relationships

(2) Treating dimensions as a "set" that collectively represent a concept so as to enable specific investigation into each dimension and general questions about the collective dimensions.

Furthermore, Edwards and Bagozzi (2000) indicate the importance of developing an auxiliary theory to join abstract constructs to measurable phenomena. Looking at the relationships between the constructs and variables developing theory enables meaningful testing to occur subsequently.

10.7.2 Reflective –v– Formative Models

Traditionally constructs within many measurement models have been reflective and consequently subject to classical theory testing (Freeze & Rashke, 2007; Law & Wong, 1999). Despite this, there is increasing debate over the role of constructs of a formative nature (Diamantopoulos et al., 2008). This interest arises from the differences between the two types of constructs and the effects of misspecification. The call for researchers to consider the nature of constructs during development, or before reuse, is gaining momentum (Diamantopoulos, 2008).

Reflective constructs are the most common in IS and Management research (Law & Wong, 1999; Podsakoff et al., 2003). MacCallum and Browne (1993) refer to these as *latent* variables. The assumption underpinning reflective constructs is that variation within the construct reflects in the observed measures. This means that the direction of causality runs from the construct to the measure. In this instance, the correlation between the measures must be high and it is possible to remove or replace a measure with another measure with little or no effect (Edwards & Bagozzi, 2000; Diamantopoulos, 2008). Reflective constructs and models comply with requirements of classical theory testing such as critical scale properties including convergent and discriminant validity, internal consistency and dimensionality (Nunnally & Bernstein, 1994). Consequently, correctly defined reflective models are eminently suitable for testing using popular statistical techniques.

Formative constructs on the other hand, are not so common in extant literature, although, that is not to say that they should not be. MacCallum and Browne (1993) refer to these as *composite* variables rather than *latent* variables. Unlike reflective constructs, where changes in the construct cause changes in the measures, in a formative construct a change in the measures results in a change in the construct. This means the direction of causality runs from the measures to the construct. Put another way, this means that for formative constructs the measures *form* or *define* the construct (Bollen & Lennox, 1991; Edwards &

Bagozzi, 2000). Podsakoff et al. (2006) state that in this case it is not necessary that measures be highly correlated[109]. For testing formative models, Miller and Friesen (1982) suggest a number of alternate methods to use in place of other standard statistical methods such as linear multivariate techniques and path or regression analyses. These methods include taxonomy and Q-technique or Q factor-analysis.

10.7.3 Choosing between Reflective and Formative Models

Blalock (1968) and Costner (1969) state that the choice of measurement model should be a theoretical decision. In many cases, the causality between the indicators and construct is evident, although this is not always the case (Diamantopoulos & Siguaw, 2006).

Choosing the correct measurement perspective is important to avoid the consequences of measurement model misspecification (Podsadoff et al. 2006). An example of misspecification is the errors that Diamantopoulos and Siguaw describe as Type I and Type II errors. According to Jarvis et al. (2003) Type I errors (i.e. those that lead to spurious results by showing a false positive result) are more common than Type II errors (i.e. those that fail to detect an effect by giving a false negative result) and arise from choosing a reflective approach when a formative one is more appropriate. Other effects of misspecification include construct validity due to causality issues, evaluation of scale measurement properties and erroneous statistical conclusions about relationships between constructs (Jarvis et al. 2003; Podsadoff et al. 2006).

Based on literature (Bollen, 1984; Bollen & Lennox, 1991; Jarvis et al., 2003; MacKenzie et al., 2005), Podsakoff et al. (2006) propose four criteria for choosing between reflective and formative models. The basis of these is the relationships between the constructs and measures or dimensions, and the relationships between the measures and/or dimensions. Table 131 summarises these criteria.

[109] Some researchers argue that high correlation between measures can result in multicollinearity and may be a sign to consider removal of a measure (Podsakoff et al. 2006).

	Reflective	First-Order or Multi-dimensional Constructs
Direction of Causality	• Changes in construct reflect in changes in measures.	• Changes in the measures lead to changes in the construct.
Inter-changeability	• Measures all share a common theme and are interchangeable. • Removing any should not have a significant impact on the conceptual domain of the construct.	• Measures capture unique aspects of the construct and are therefore not necessarily interchangeable. • Dimensions must be distinguishable from each other. • Removal of a measure/dimension would lead to a change in the conceptual domain of the construct and potentially to a measurement deficiency.
Covariance of measures	• Due to interchangeability, expected to have high covariance.	• Due to interchangeability criteria, need not have high levels of covariance. • May be positively related, negatively related or not related at all.
Similarity of nomological networks	• Have similar antecedents and consequence.	• Do not necessarily have similar antecedents or consequences. • Assess the structural equivalence of the measures.

Table 131: Criteria for Reflective and Formative Models

The next sections discuss these criteria in light of the findings arising from this study.

Direction of Causality

The direction of causality refers to the manner of conceptualisation of the construct. If the proposed EP theory for *BPM Maturity* were reflective, one would expect that (1) a change in *BPM Maturity* would reflect in a corresponding change in all factors and (2) a change in factors would reflect in a similar change in all capability areas for that factor. Within a formative model, the direction of

causality would be the reverse. A change in a factor would lead to a change in *BPM Maturity* and a change in a capability area would lead to a change in a factor.

Within the longitudinal case studies, Company U provided an example of the direction of causality between the capability area and the factors, as shown in Figure 55 and Figure 56.

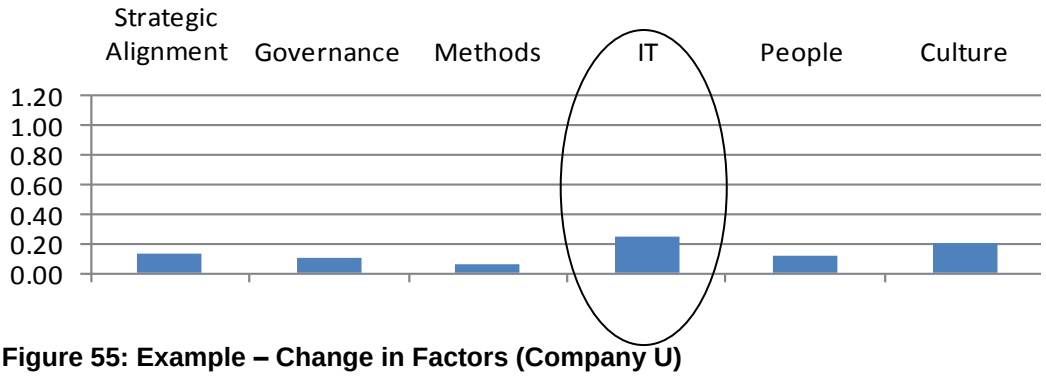


Figure 55: Example – Change in Factors (Company U)

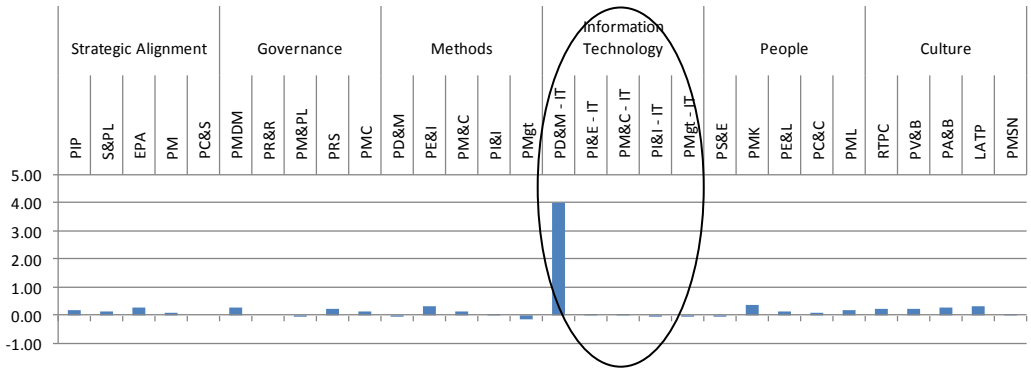


Figure 56: Example – Change in Capability Areas (Company U)

As seen in Figure 55, the data for the *IT* factor for Company U in shows a small difference of 0.21 (on a 7-point scale). Figure 56 shows however that this masked a significant change in emphasis in the capability area for *Design and Modelling* (i.e. 4 points) and little or no change in the other *four* capability areas (ranging between -0.04 and +0.05). This shows variability between changes in the capability areas, and indicates that a change in the factor does not result in consistent change within the capability areas. Consequently, the direction of causality runs from the capability areas to the factor, whereby a change in a capability area caused a change in the factor.

The evidence from this study indicates that the direction of causality runs from the factors to *BPM Maturity* and from the capability areas to the factors. Consequently, with regard to direction of causality, the proposed EP theory for *BPM Maturity* is *formative*.

Interchangeability

Interchangeability refers to the extent to which one can substitute or remove variables from a construct without causing a fundamental change in its character. If the proposed EP theory for *BPM Maturity* were reflective (1) the removal of a factor would not fundamentally change the meaning of *BPM Maturity* (2) the factors would be mutually substitutable (3) the removal of a capability area would not cause a fundamental change in the meaning of a factor and (4) the capability areas would be mutually substitutable. Within a formative model however, the removal of a factor would result in a fundamental change in the intent of the *BPM Maturity* construct and similarly, the removal of a capability area would result in a fundamental change in the intent of the factor.

To be reflective, measures must share a common theme. The factors and capability areas of the proposed EP Theory for *BPM Maturity* do not share a common theme. The Researcher initially selected the factors from the extant literature due to their independence, a point further supported by the individual definition of each factor during the Delphi studies. The independent intent of the factors is also evident in the diversity of their nature (e.g. *IT* and *Culture*). Similarly, the identification and coding process used to derive the capability areas during the Delphi studies defined unique measures, not interchangeable measures for each of the factors. Furthermore, the variability in emphasis placed on the capability areas during the longitudinal studies is additional evidence of their separate and distinct natures.

The evidence from this study indicated that both the factors and the capability areas do not share common themes. Consequently, with regard to interchangeability, the proposed EP theory for *BPM Maturity* is *formative*.

Covariance of Measures

Covariance of measures refers to the extent that variables vary together. Within a reflective model, the requirement for interchangeability of measures necessitates high covariance between measures. A positive covariance would result from an expected increase in change between variables. A negative covariance would see an expected decrease in change between them (Podsakoff, 2006).

If the proposed EP theory for *BPM Maturity* were reflective, one would expect that (1) all factors contributing to *BPM Maturity* would vary together and (2) all capability areas of a given factor would display high covariance. Within a formative model, the interchangeability requirement does not apply therefore there is no requirement for high covariance.

As the proposed EP theory was formative for interchangeability, it follows that the factors and capability areas will not display high covariance. The longitudinal case studies support this, showing no consistent covariation across the companies at a factor level, as seen in Figure 57.

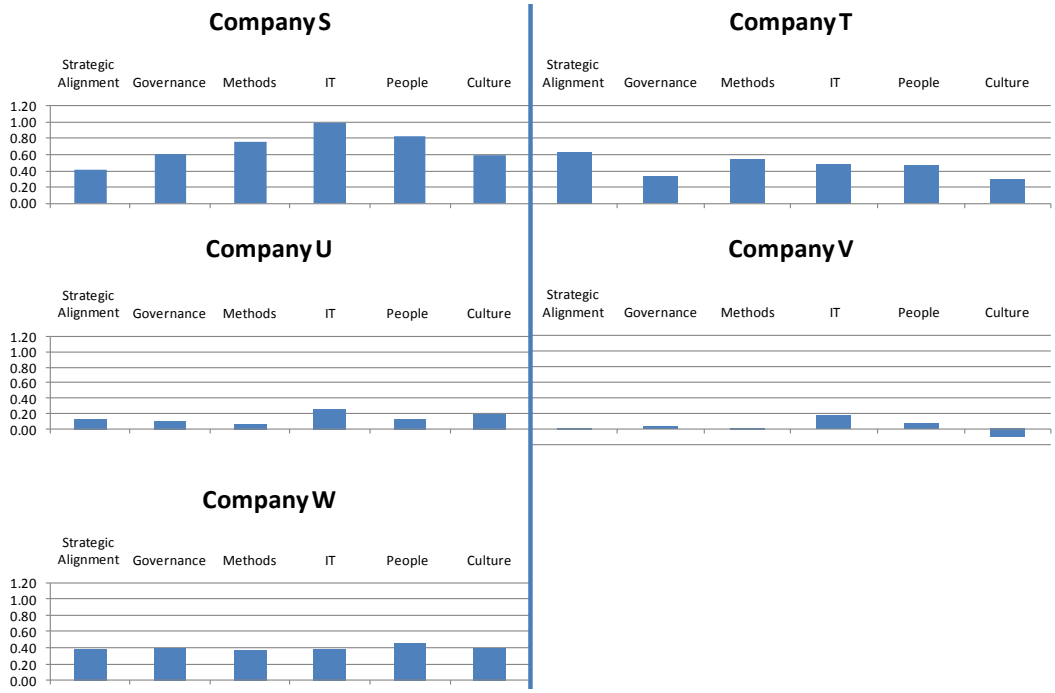


Figure 57: Example – Change in Factors from First Year to Last Year

Similarly, at a capability area level across companies, the longitudinal case studies showed no consistent covariation, as seen in Figure 58. Furthermore, whilst these examples do not show actual covariance, they do show the potential for both positive and negative covariance between the capability areas as they show a negative emphasis on some capability areas over time.

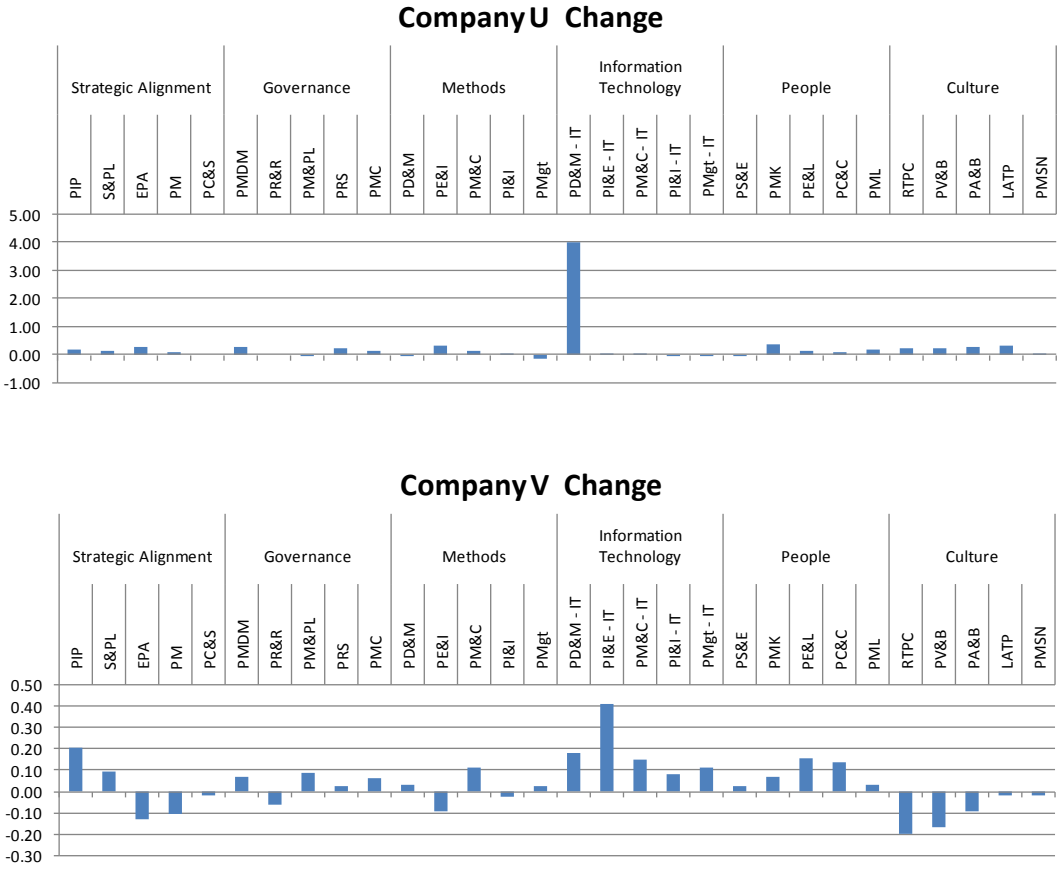


Figure 58: Example – Change in Capability Areas (Company U & Company V)

The evidence from this study indicated that both the factors and the capability areas do not display high covariance. Consequently, with regard to covariance of measures, the proposed EP theory for *BPM Maturity* is *formative*.

Similarity of Nomological Networks

Similarity of nomological networks refers to the extent to which the measures and constructs have similar antecedents or consequences. If the proposed EP theory for *BPM Maturity* were reflective, (1) the antecedents would be similar for the

measures and (2) the consequences of the measure would be similar. Within a formative model however, the measures of a construct are exogenous (i.e. originate from outside the model) so similarity of antecedents or consequences is not a necessity.

Within the EP theory for *BPM Maturity*, the measures are exogenous. With regard to antecedents in the *Methods* or *IT* factors for example, the methodologies and technologies available are dependent on those available within the BPM market. Within the *Governance* factor, process related standards are dependent upon the standards set by regulatory bodies and legislators that impact on the operation of processes within a company. Within the *Strategic Alignment* factor, changes in market conditions and consumer sentiments affect customer and stakeholder requirements.

The evidence from this study indicated that both the factors and the capability areas are exogenous. Consequently, with regard to its nomological networks, the proposed EP theory for *BPM Maturity* is *formative*.

Summary

This evaluation demonstrates that choosing to reflect the EP theory for *BPM Maturity* as formative was appropriate, based on the findings of this study. Furthermore, this evidence makes five important points:

1. The strength of the relationship between variables will vary between organisations[110]
2. The strength of the relationship between variables will vary over time
3. The direction of the relationship between variables may vary between organisations
4. The direction of the relationship between variables many vary over time
5. A cause of variation in the relationships may not result in consistent consequences.

[110] The term 'variable' as it is used here includes both factors and capability areas.

These points support the explanatory theory on *BPM Progression* proposed in Section 10.4. Furthermore, these points are important to future testing of the model as they have the potential to produce spurious results if not taken into account during measurement and future empirical testing.

10.8 Chapter Summary

Using classifications from Gregor (2002, 2006), Sabherwal et al. (2001) and Edwards and Bagozzi (2000) the Researcher presented a number of theories regarding the progression and measurement of *BPM Initiatives*.

First, the Researcher proposed **analytical theories** (Gregor 2002, 2006) including the *BPM Capability Framework* and a typology for classifying *BPM Initiatives*. The *BPM Capability Framework* provided a consistent means of defining the factors critical for progressing *BPM Initiatives*, including the delineation of measures for these factors, being the capability areas. The typology for *BPM Initiatives* combined common interpretations of BPM from extant literature together with the *scope* and *approach* of the *BPM Initiative* to provide a consistent means of classification.

Second, the Researcher proposed an **explanatory theory** on *BPM Progression*, including a number of conjectures derived from the case studies conducted during the study. The Researcher used Sabherwal et al.'s (2001) classification to show that this study supported theory regarding *BPM Initiatives* using the principles of punctuated equilibrium theory. In doing so, the Researcher showed how universalistic, contingency and lifecycle theory is not appropriate to *BPM Progression* and measurement, based on the findings of this study.

Third, the Researcher proposed an **EP theory** for *BPM Maturity*, presenting a multi-dimensional, formative model. Following this, the Researcher discussed the difference between reflective and formative measurement models, using the data from the longitudinal case studies to show why a formative model is more appropriate for measuring *BPM Maturity*.

The next chapter concludes this thesis, providing a summary of its contributions, limitations and the areas of potential future research.

11 Research Contributions, Limitations & Outlook

The preceding ten chapters presented the systematic conduct of organisational level research exploring the progression and measurement of *BPM Initiatives* within organisations. This study culminated in the development of analytic and explanatory theory regarding the progression of *BPM Initiatives* and the EP theory for *BPM Maturity* in the form of a multi-dimensional, formative measurement model for *BPM Maturity*. In conclusion, it is appropriate to reflect upon how the study delivered against the initial research questions it aimed to address. Furthermore, no study is complete without consideration of (1) its inherent limitations and (2) the opportunities it presents for future research.

11.1 Chapter Overview

The structure of this chapter is as follows. Section 2 revisits the research questions proposed in Chapter 1 and summarises how the study has addressed each of these. Section 3 confirms the relevance of the study, presenting the major contributions based on their theoretical and practical implications. Section 4 discusses the research limitations inherent in the study, including the mitigation strategies the Researcher adopted to limit the impact of these. Section 5 proposes future research opportunities resulting from the conduct of this study. Section 6 concludes the chapter presenting an overall summary of the study.

11.2 Reiterating the Study Questions

The purpose of this study was to address shortcomings identified in extant research with regard to the progression and measurement of *BPM Initiatives* in organisations. The Researcher defined the terms *BPM Progression* and *BPM Maturity* in Chapter 1, using these terms when proposing the study questions. These questions included managerial, research and investigative questions, as reiterated in Figure 59.

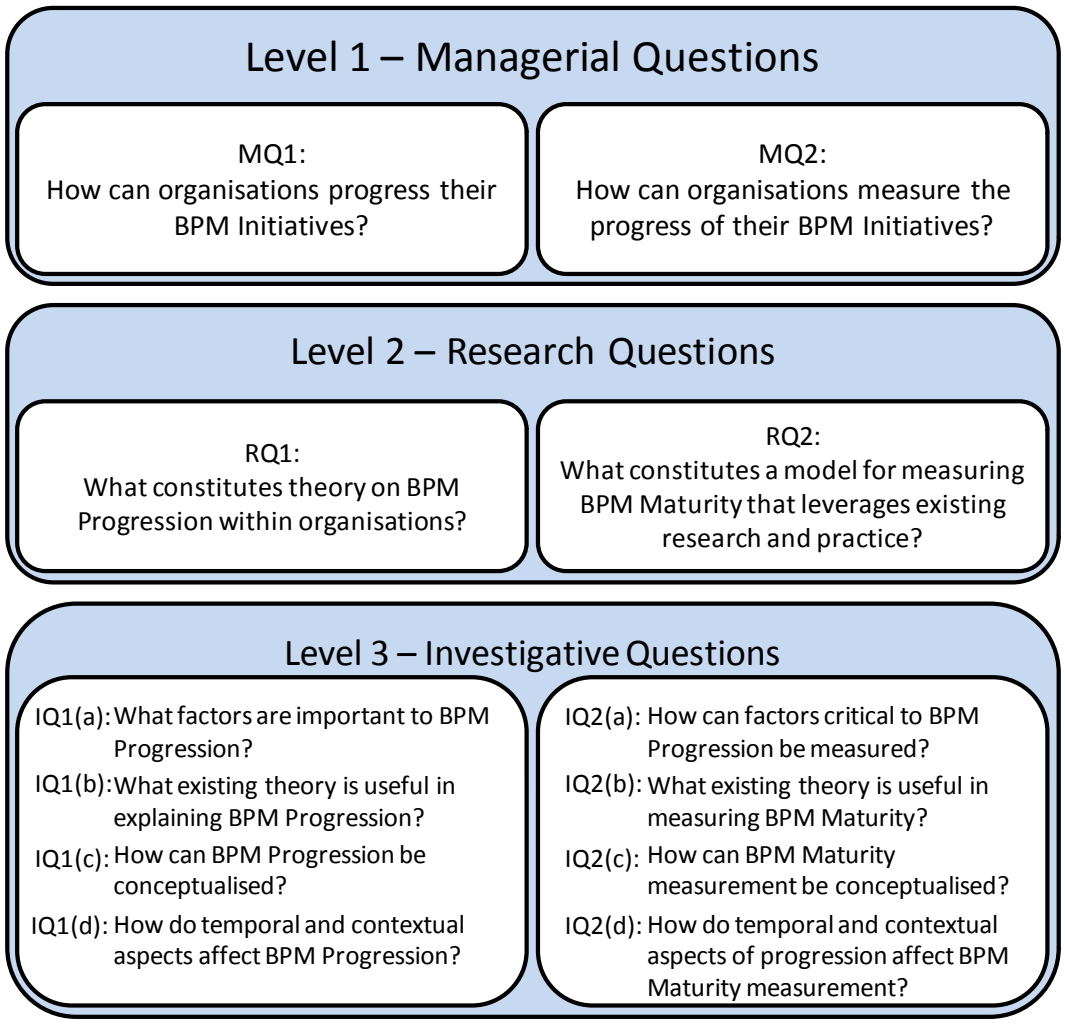


Figure 59: The Study Questions: Managerial, Research and Investigative

The study therefore had two complementary arms (1) to build theory about the progression of *BPM Initiatives* and (2) to enable the future measurement of such progression, by proposing theory to enable the measurement of this progression.

11.2.1 Answering the Study Questions

With regard to *BPM Progression*, at the managerial and research level, this study asked the questions:

MQ1: How can organisations progress their *BPM Initiatives*?

RQ1: What constitutes theory on *BPM Progression* within organisations?

Whilst not being normative research that provides definitive guidance on how organisations *should* progress *BPM Initiatives*, this study provided comprehensive insights into how a number of organisations *have progressed* their *BPM Initiatives*. From this, the study provided insights into the critical role of organisational context, contextual variables and temporal aspects affecting the progression of *BPM Initiatives*. In doing so, the study resulted in the proposal of theory on *BPM Progression* including a typology for classifying *BPM Initiatives*.

With regard to *BPM Maturity*, at the managerial and research level, this study asked the questions:

MQ2: How can organisations measure the progress of their *BPM Initiatives*?

RQ2: What constitutes a model for measuring *BPM Maturity* that leverages existing research and practice?

In addressing these questions, this study provided comprehensive insights into important aspects of measurement. These insights had a base in an extensive review of extant literature and the progression of the *BPM Initiatives* in a number of organisations. Subsequently, the Researcher proposed a *BPM Capability Framework*, a conceptual *formative* measurement model for *BPM Maturity* and a number of conjectures that act to inform future research. Importantly, the *formative* measurement model caters for those aspects identified as critical to progressing *BPM Initiatives*. This included the impact of the contextual environment, changes in contextual variables and the temporal nature of progression, as well as the structure of the *BPM Initiative* itself.

The study achieved these outcomes by addressing a number of more detailed investigative questions as discussed in the following paragraphs.

Chapter 2 provided details of the design and proposed conduct of the study. In particular, this chapter separated *"fact-finding research"* from *"theory building research"*, and resulted in the Researcher subsequently presenting the thesis in two stages. Recognising the complexity of both organisational level research and the phenomenon of BPM, the Researcher adopted a multi-paradigmatic approach to the study using multi-methods of case study and survey.

Consequently, this chapter provided a solid theoretical foundation for addressing all the managerial and research questions within the study.

Chapter 3 provided a comprehensive review of extant literature within the BPM domain, including existing measurement models. From this investigation, the Researcher established the critical elements of an *Initial Conceptual Model* for exploring *BPM Progression* and *BPM Maturity*. This review also identified a number of issues for measuring *BPM Progression*.

Chapter 3 contributed to investigative questions including:

IQ1 (a): What factors are important to *BPM Progression*?

IQ1 (b): What existing theory is useful in explaining *BPM Progression*?

IQ1 (c): How can *BPM Progression* be conceptualised?

IQ2 (a): How can factors critical to *BPM Progression* be measured?

IQ2 (b): What existing theory is useful in measuring *BPM Maturity*?

IQ2 (c): How can *BPM Maturity* measurement be conceptualised?

Chapter 4 detailed case studies with two companies adopting an enterprise-wide *BPM Initiative*. The purpose of these case studies was to test the *Initial Conceptual Model* in a practical environment. The case studies showed the influence organisational context and contextual variables could have on *BPM Progression*. The case studies also resulted in modifications to the factors included in the conceptual model. Furthermore, the case studies enabled the Researcher to trial early efforts to operationalise the *Initial Conceptual Model*. In

doing so, the case studies provided important feedback on the use of terminology and other practical issues in measuring *BPM Maturity*, such as the variability in practice between different organisational units.

Chapter 4 contributed to investigative questions including:

IQ1 (c): How can *BPM Progression* be conceptualised?

IQ1 (d): How do temporal and contextual aspects affect *BPM Progression*?

IQ2 (d): How do temporal and contextual aspects of progression affect *BPM Maturity* measurement?

Chapter 5 presented the conduct and outcomes of a series of Delphi studies. Six studies were conducted, one for each of the factors in the *Revised Conceptual Model* arising from Chapters 3 and 4. The principal aim of these studies was to advance the issue of measuring the progression of *BPM Initiatives*. Use of the Delphi technique resulted in the systematic identification and categorisation of key items whose measurement was indicative of *BPM Progression*. The final list of measurement items, referred to as capability areas, acted to define the six factors in an *Extended Conceptual Model* subsequently referred to as the *BPM Capability Framework*. Furthermore, mapping all items raised by the Expert Panel to each of these capability areas enabled the Researcher to refine the operationalisation of the measurement model. This included developing a framework for questions based on extant literature and deriving potential measurement questions for the capability areas using a combination of extant literature and the mapped items.

The Delphi Studies detailed in Chapter 5 contributed to investigative questions:

IQ2 (a): How can factors critical to *BPM Progression* be measured?

IQ2 (c): How can *BPM Maturity* measurement be conceptualised?

Chapter 6 detailed the exploration of a *BPM Initiative* in a global mining organisation using the frame of the extended conceptual model developed in the Delphi Studies. This case study provided insights into potential relationships between the factors and capability areas of the *BPM Capability Framework*, and further insights into the impact of contextual and temporal aspects.

Chapters 7, 8 and 9 detailed the design, conduct and analysis of a longitudinal case study with five organisations. These studies acted to refine the emerging conceptual themes into theory for *BPM Progression* and *BPM Maturity*, and to improve its generalisability. Chapter 7 detailed the design of the longitudinal case study including the design of data collection instruments, the selection of cases and the approach to data analysis. Chapters 8 and 9 presented the findings from the five longitudinal case organisations. Chapter 8 included the within case analysis and outcomes and Chapter 9 detailed the cross-case analysis and outcomes.

The exploratory case study detailed in Chapter 6, and the five longitudinal case studies from Chapters 7, 8 and 9 addressed the investigative questions:

IQ1 (c): How can *BPM Progression* be conceptualised?

IQ1 (d): How do temporal and contextual aspects affect *BPM Progression*?

IQ2 (c): How can *BPM Maturity* measurement be conceptualised?

IQ2 (d): How do temporal and contextual aspects of progression affect *BPM Maturity* measurement?

Chapter 10 drew together all aspects of the study. The Researcher proposed an explanatory theory on *BPM Progression* and analytic theory including the *BPM Capability Framework* and a typology for classifying *BPM Initiatives*. The Researcher also proposed an EP theory on *BPM Maturity* and detailed why the less common approach of formative measurement, is more suitable than a reflective approach for measuring *BPM Maturity*. Furthermore, the Researcher presented a number of conjectures arising from the experiences gained during the study, to inform future research.

Consequently, Chapter 10 addressed all of the managerial, research and investigative questions of the study.

11.3 Research Contributions

The BPM domain lacks a cumulative body of BPM theory and knowledge and is rife with inconsistent use of terminology. This study aimed to address these issues with regard to the progression and measurement of *BPM Initiatives* within organisations. In doing so, this study made significant contributions to both the theoretical aspects of BPM research and the practical aspects of BPM implementation and progression within organisations as detailed in the following sections.

11.3.1 Theoretical Implications

The following theoretical contributions support the achievement of the aims of this study, as do the publications and presentations, listed in Chapter 1, and selectively highlighted here.

Contribution 1 – Conceptual BPM *Success* Model

Chapter 1 presented an a priori model, showing the relationship between the concepts of *BPM Progression* and *BPM Maturity* together with their theorised relationship with three constructs of *BPM Success*, *Process Success* and *Organisational Performance*. The model depicts six critical BPM factors, their capability areas and denotes the role of context and contextual variables. The focus of this study was *BPM Progression* and *BPM Maturity* and further research is required to understand the impact these have on *BPM Success*, *Process Success* and ultimately *Organisational Performance*. The theorised *BPM Success* Model provides direction for future research.

Publications associated with the conceptual development of the model include:

Rosemann, M., & de Bruin, T. (2005). Towards a business process management maturity model. *Proceedings of the 13th European Conference on Information Systems, Regensburg, 521-532.*

Rosemann, M., de Bruin, T., & Hueffner, T. (2004). A model for business process management maturity. *Proceedings of the 15th Australasian Conference on Information Systems, Hobart*.

Rosemann, M., & de Bruin, T. (2004). Application of a holistic model for determining BPM. *Proceedings of the AIM Pre-ICIS Workshop on Process Management and Information Systems, Washington D.C.*

Contribution 2 – BPM Capability Framework

Chapter 5 presented a series of six separate Delphi studies. The purpose of these studies was to define the factors in the refined conceptual model and to identify measurement items for each factor. The outcome of these studies was a so-called, *BPM Capability Framework*, that in itself is a theory for analysing (as defined by (Gregor, 2006).

This framework provided the basis for the exploratory case study detailed in Chapter 6 and the multiple longitudinal case studies detailed in Chapters 7 – 9. In doing so, the framework enabled the comparative study of *BPM Initiatives* in multiple organisations and provided a consistent basis from which to compare and contrast the progression of the *BPM Initiatives* within this study. Furthermore, this framework provides a solid theoretical basis and the beginnings of a common language for future research in the BPM domain.

Publications associated with the development of the *BPM Capability Framework* include:

de Bruin, T., & Rosemann, M. (2007). Identifying BPM capability areas using the Delphi technique. *Proceedings of the 18th Australasian Conference on Information Systems, Toowoomba, 643-653*.

Contribution 3 – Multi-dimensional, Formative BPM Model

Chapter 10 detailed a proposed EP theory (as defined by Gregor, 2006) for the construct of *BPM Maturity*, in the form of a measurement model. This model depicted *BPM Maturity* as a multi-dimensional, formative construct. Moreover, the model showed that at three of the four defined levels, formative measurement is appropriate. The study also resulted in the proposal of a number of conjectures about potential relationships between the variables of the model. Additional research is required to explore these relationships. Further research is

also required to develop measurement items at the fourth level of this model, although this study has made progress in this area by piloting early operationalisation efforts.

Contribution 4 – Typology of BPM Initiatives

Chapter 10 presented a typology of *BPM Initiatives* as a theory for analysing (as defined by Gregor, 2006). Building upon the experiences in all eight case studies, this typology extended concepts initially raised by Porter (1996) in his work into Strategic Management, to the BPM domain. The typology depicted *BPM Initiatives* as a composition of both their *scope* and *approach.* Whilst further testing is required, this typology makes an important contribution to overcoming issues arising from inconsistent use of terminology within the BPM domain, providing a means by which to classify *BPM Initiatives*.

Contribution 5 – Theory on BPM Progression

Chapter 10 presented an explanatory theory (as defined by Gregor, 2006) on *BPM Progression* including the proposal of a number of conjectures that inform future research. This theory is significant in that it is the ***first*** theory on the progression of *BPM Initiatives* within organisations. The development of the theory is also significant, as its derivation addressed a number of complex and contentious issues such as the recognition of a formative measurement model and the measurement of change. Furthermore, this theory captured the dynamic nature of progression and the complexity of organisations by recognising the impact of contextual and temporal aspects. Consequently, whilst the theory itself is high-level it is extremely rich and challenges common perceptions of BPM[111].

Publications associated with this theory development include:

de Bruin, T. (2007). Insights into the evolution of BPM in organisations. *Proceedings of the 18th Australasian Conference on Information Systems, Toowoomba, 632-642*.

[111] For example, that there is a single best way to do BPM or that a prescriptive approach to BPM implementation will result in sustainable practices.

Contribution 6 – Methodological and Paradigmatic Insights

This study utilised a comprehensive research design to investigate a complex phenomenon, at an organisational level. The study has shown how research in emerging domains can benefit from taking a multi-paradigmatic view of the world. It has also shown that in such emerging domains, researchers can benefit from undertaking "*fact finding research"* before undertaking theory building research, by enabling refinement and increased understanding of the research problem.

Contribution 7 – Contribution to Qualitative Research

The study provided an exemplary example of the conduct of qualitative research. The design itself is unique in its iterative use of methods, including the three distinct and distinctive applications of the case study method. The study was an exemplar in how this method can be utilised in multiple ways to provide rich insights that progressively build a comprehensive body of knowledge.

The use of the Delphi Technique provided an example of an alternative means of identifying and defining constructs using a panel of experts. In doing so, it provided a means to overcoming geographical and disciplinary boundaries to take advantage of dispersed expertise without losing the rich detail common to qualitative research.

The use of multiple complementary data collection methods, data analysis techniques and reporting cycles, as evidenced in the extensive documentation in the Appendix, provided an exemplary example of how to conduct systematic, rigorous qualitative research.

Publications with a methodological focus include:

de Bruin, T. (2005, November). BPM maturity. In I. Hawryszkiewycz (Chair), *Doctoral Consortium for the 16th Australasian Conference of Information Systems, Sydney*.

de Bruin, T. (2005, November). BPM maturity. In K. Fielden & B. Rowlands (Co-Chairs), *Doctoral Consortium for the 2nd International conference on Qualitative Research in IT & IT in Qualitative Research*, *Brisbane*.

11.3.2 Practical Implications

The following practical contributions support the achievements of the aims of this study, as do the publications, presentations and inquiries listed in Chapter 1, and selectively highlighted here.

Contribution 1 – Unique Insights into BPM Progression

Through the development of the theory for *BPM Progression*, this research provided the first empirical guidance for assisting organisations to progress their *BPM Initiatives*. Furthermore, it provided the first consolidated insights into the progression of *BPM Initiatives*, including how this potentially differs between different structures of *BPM Initiatives*. The study also showed how the contextual environment is likely to influence the progression of *BPM Initiatives*, including the potential impact from changes in contextual variables and time.

Contribution 2 – Informal Guidance on BPM Progression

The *BPM Capability Framework* provided guidance to BPM practitioners on the capability areas that enable the progression of *BPM Initiatives*. Although the study does not give deep insights into how and why to develop these capability areas, practitioners can use the framework to select which BPM capability areas to develop within their own organisations.

Contribution 3 – Formal Measurement of BPM Progression

Through the practical operationalisation of the *BPM Capability Framework*, this study provided practitioners with access to a range of instruments to assess *BPM Maturity*, enabling the independent measurement of *BPM Progression*. The case studies provided an opportunity to pilot and test these instruments, which the Researcher has since used in commercial endeavours. The Researcher's comprehensive understanding of *BPM Progression* and the focus of this research on understanding the development of BPM capability makes these instruments unique to the marketplace. Application of these instruments allows the derivation of a comprehensive BPM roadmap, enabling the selection of BPM strategies for building capabilities that match the specific circumstances of each organisation.

Contribution 4 – Executive Buy-In to BPM

A prominent issue in progressing BPM is the need for *Executive Buy-In*. This study argued that *Executive Buy-In* plays a vital role in the progression of *BPM Initiatives*. The study showed that progression of an organisational approach to BPM is not sustainable without high levels of *Executive Buy-In*. The survey developed for the longitudinal case studies provided practitioners with a means of measuring existing levels of *Executive Buy-In*[112]. Furthermore, in supplementary research conducted during this study, the Researcher identified strategies for increasing the level of *Executive Buy-In*.

Industry Oriented Publications

A number of publications reinforce the practical relevance of this research and provide practitioners with insights on aspects of this study. These include:

de Bruin, T., & Doebeli, G. (in press). BPM as an organizational approach: The experience of an Australian transport provider. In M. Rosemann & J. vom Brocke (Eds.), *Handbook on Business Process Management: Vol.1*. Berlin: Springer Publishing Company.

de Bruin, T., & Doebeli, G. (2009). Progressing an organizational approach to BPM: Integrating experience from industry and research. *Proceedings of the 21st International Conference on Advanced Information Systems (Industrial Track)*, *Amsterdam*.

de Bruin, T. (2008). Strategies for increasing executive commitment to BPM. *Proceedings of the 16th European Conference on Information Systems, Galway, 1620-1631.*

de Bruin, T., & Rosemann, M. (2006). Towards understanding strategic alignment of BPM. *Proceedings of the 17th Australasian Conference on Information Systems, Adelaide*.

[112] These measures derive from existing literature but this study did not undertake any further validation of the measures.

Rosemann, M., de Bruin, T., & Power, B. (2006). A model to Measure *BPM Maturity* and Improve Performance. In J. Jeston & J. Nelis, *Business process management: Practical guidelines to successful implementations,* (pp. 299-315). Burlington, Massachusesetts: Butterworth-Heinemann.

de Bruin, T (2005). *Embedding BPM*. In: *Self study course in Business Process Management*, *Module 9*. Sydney: Informa Australia Pty.

11.4 Research Limitations

As with any research design, there are limitations presented by the research design, the research execution and potential bias from the Researcher. The following sections discuss a number of limitations of this study, including their potential impact on the outcomes, together with the strategies adopted by the Researcher to mitigate this.

11.4.1 Selection Issues

A potential limitation in any study lies in the selection and application of methods. This section discusses limitations and mitigations strategies arising from the use of the Case Study method and the Delphi Technique.

One limitation when conducting case study research lies in the case selection. In-depth organisational level case studies are both time and resource intensive. As a result, whilst they enable the exploration of ideas, the ability to conduct more than a small number of in-depth case studies is not possible given the constraints of PhD research. The small number of organisations may be a limitation, potentially restricting the generalisability of research findings due to what some would refer to as a “small sample size”. Nevertheless, using the case study method was appropriate to the theory building nature of this study.

The selection process and the availability of cases can also act as a further limitation. Due to the resource constraints, it can be difficult to get organisations to participate in case research, for example. It can be even more difficult to get organisations to participate if they are (a) not actively involved with the phenomenon in question or (b) not successfully involved with the phenomenon in question. Denrell (2005) shows the effect of selection bias in a number of

studies. In this case, the exclusion of organisations that are (a) not continuing with their BPM journey or (b) that have not experienced a high level of success with their BPM endeavours has the potential to introduce bias to the findings.

In this instance, whilst a number of organisations were continuing with their *BPM Initiatives*, one organisation from the multiple longitudinal case studies fit both of these situations. In this organisation, an 'in-progress' merger had put a hold on the *BPM Initiative* until such time as the new parent company had determined where they wanted to go with BPM. This case gave important insights into the impact of such a change.

Case selection can also be constrained by budgetary and accessibility issues. In this research, the selection of Australian based organisations, due to their accessibility and the Researcher's budget, reflects this. To mitigate this, the Researcher aimed to select some organisations that had global aspects to their operations. In one case, the organisation was a wholly owned subsidiary of a parent company. The subsidiary company had direct operations in Australia, New Zealand and South Africa and the parent company had over 50 wholly owned or controlled entities operating in Europe, America, China and Africa. In another case, the organisation mostly operated in regional Australia but also had offices in Canada and their client base was a mix of Australian and non-Australian. For yet another case, an Australian based organisation was adopting BPM as a means of achieving globalisation, thus they saw their immediate market competitors as international organisations.

A potential limitation also arose during the conduct of the Delphi studies in the selection of the Expert Panel. In this study, the Expert Panel *represented* a number of regions but was not *representative of BPM* within those regions. The *represented* regions included only Europe, America and Australia however. There were attempts to identify potential panellists from other regions through literature searches, with limited success. In the few cases identified, the potential panellists from other regions did not accept the invitation to participate in the Delphi study. As such, there is a possibility that the outcomes of the Delphi studies could have a bias towards the represented regions.

11.4.2 Data Bias

Another limitation in research that relies heavily on qualitative data is the quality of the data that is collected. To mitigate this, in all stages of the study, the Researcher aimed to design complementary data collection instruments that facilitated triangulation between data sources, and approaches to data collection that facilitated feedback and confirmation loops.

By way of example, during the Delphi study series bias could arise from having a single researcher coding the data from multiple regions. To counter this, the Researcher used a Coding Team consisting of PhD qualified researchers from each of the regions represented. In addition, an iterative process guided coding so that each coder first coded independently before all coders convened to compare and discuss outcomes. Furthermore, the Researcher used a fully transparent approach for the return of data to the Expert Panel whereby all coding and categorisation was summarised in the documents for subsequent Delphi rounds.

In addition, in both the Delphi studies and all Case Studies, the Researcher provided participants with a report and a presentation of findings. In each case, participants were encouraged to provide further clarification and input where they believed interpretation was not consistent with their intent.

11.4.3 Starting Points

During the later stages, this study explored the emphasis that organisations placed on developing BPM capability at two points in time (i.e. *First Year* and *Last Year*), and the change that occurs between the two points. Whilst the *Last Year* was consistent across organisations, the starting year differed for some. This meant that the period over which the Researcher measured the change in capability differed in two of the five companies. To limit this impact the Researcher calculated the relative change between these two points.

11.4.4 Future Theory Testing Implications

The scope of this thesis was limited to theory building in an emerging domain that lacked a theoretical foundation upon which to build. Consequently, the focus was on adopting methods and approaches most suited to this situation. The selection of methods inevitably leads to potential limitations for future theory refinement and theory testing research. This study used methods such as case studies and longitudinal studies as opposed to an alternative approach using cross-sectional studies. This creates potential issues for subsequent theory testing.

Within the longitudinal study for example, the Researcher used a simplistic approach to measure change, using the proportional differences between data at two points in time. There is debate however, around the measurement of change, including the various ways in which to calculate change and whether we should measure change at all. Some of the debate also deals with the correlation between the variables and the impact of this correlation on the reliability of results (Bergh & Fairbanks 2002; Cronbach & Furby 1970).

Similarly, this study proposed a multidimensional, formative measurement model for *BPM Maturity*. Proposing a formative model goes against the flow of popular research, with much of the published research in management fields being reflective in nature. As with the measurement of change, there is considerable debate over the use of formative models. Critics argue that collective dimensions explain less variance, their relationships are confounded between and within dimensions, and that these models are conceptually ambiguous (Edwards 2001). Alternatively, advocates such as Hanisch, Hulin and Roznoski (1998) claim that multidimensional constructs allow the matching of broad predictors and outcomes, greater explained variance and thus enable holistic representations of complex phenomena (Edwards, 2001).

The Researcher believes that the systematic approach taken to the study supports both the choices made during the study, and the subsequent outcomes of the study. At the same time, the need to investigate the implications of these debates on the future refinement and testing of the theory arising from this study requires further research.

11.4.5 Researcher Ability

A further potential limitation inevitably lies in the ability and experience of the Researcher, and the extent to which this has influenced the study.

Experience working in organisations prior to undertaking PhD research has undoubtedly affected the Researcher's view of the world and created a desire to conduct both relevant and rigorous research. This experience potentially influenced the collection and interpretation of data, particularly with qualitative data. This experience, for example, can affect the Researcher's interaction with individuals in the case study organisations, interviewing style and the questions asked during in semi-structured interviews.

Where possible, recording and transcribing interviews and workshops occurred, enabling thick descriptions (Myers & Newman, 2007) from the data to support conclusions. Furthermore, the design of the study incorporated many checkpoints and reporting to participants to gain feedback about the interpretation of data. During the longitudinal case studies, for example, the Researcher undertook within-case analysis to provide participants with an opportunity to clarify and extend initial interpretations of the data. In all cases, the Researcher ensured that such reporting was after the collection of data so as not to bias the collection of future data. Furthermore, throughout this thesis the Researcher endeavoured to make the data collection and analysis as transparent as possible, showing the progression of the thoughts throughout the study.

During the study, the Researcher gained supplementary insights into the BPM domain outside of the study itself. This included regularly attending industry events and seminars, participating in BPM forums, presenting at conferences and conducting training and education in BPM, where possible. This provided the Researcher with exposure to different perspectives and experiences of BPM.

Finally, throughout the entire PhD journey, the Researcher remained as objective, as unbiased, as receptive and as open-minded as possible.

11.5 Research Outlook

The focus of this study has been on theory building, producing a number of significant theoretical and practical implications for the progression and measurement of *BPM Initiatives* in organisations. In doing so, this study provided a platform for the progression of future research in a number of areas, including but not limited to, the testing of the theory produced by the study. The following sections present some ideas for potential future research.

11.5.1 Recognising Dynamic Capabilities

In strategic management literature, Porter (1996) introduced the concept of a productivity frontier for optimising operational effectiveness and strategic positioning. The distinction Porter (1996) made between the *availability* of processes, technologies and best practice and the strategies *combining* these, is similar to the distinctions other researchers draw when discussing dynamic capabilities or competences and their role in achieving and sustaining competitive advantage within organisations[113]. In particular Teece et al. (1997, 509) state:

> *"…The competitive advantage of firms is seen as resting on distinctive processes (ways of coordinating and combining), shaped by the firm's (specific) asset positions (such as the firm's portfolio of difficult-to-trade knowledge assets and complementary assets), and the evolution path(s) it has adopted or inherited..."*

This work builds on early research in this area including Porter's (1980) competitive forces approach and the strategic conflict approach (Shapiro, 1989). These approaches do not see competition as a process but rather as a series of *"sophisticated plays and counterplays"*. Furthermore, Teece et al. (1997) extended the resource-based perspective that Wernerfelt (1984) first distinguished as being separate from the earlier approaches. In introducing the resource-based perspective to organisational theory, Wernerfelt (1984)

[113] Such researchers include Bhatt, (2000), Eisenhardt & Martin (2000), Helfat & Peteraf (2003), Leonard-Barton (1992), Prahalad & Hamel (1990) and Teece et al. (1997).

highlighted the existence of organisation specific assets and capabilities and the importance to performance of combining scarce resource capabilities that are difficult to imitate. The efficiency-based approach offered by Teece et al. (1997, 510), known as dynamic capabilities, sought to extend earlier work to:

> *"...identify the dimensions of firm-specific capabilities that can be sources of advantage, and to explain how combinations of competences and resources can be developed, deployed, and protected. We refer to this as the 'dynamic capabilities' approach in order to stress exploiting existing internal and external firm-specific competences to address changing environments..."*

Bhatt (2000, 120) holds similar views stating that:

> *"…Neither capabilities nor resources, alone, are sufficient to offer above average rents to the organization…"*

The Researcher contends that BPM as an organisational approach is conceptually similar to the extension of Wernerfelt's (1984) resource-based view made by Teece et al. (1997). Furthermore, whilst BPM as a lifecycle approach focuses on process competences and resources, BPM as an organisational approach focuses on the development, deployment and protection of these capabilities within an organisations changing environment. Thus, in understanding the progression of BPM as an organisational approach, there is a need to adopt a "dynamic capabilities view" and consider both which BPM capabilities an organisation focuses on, as well as how the organisation's changing environment affects this focus. *How* and *why* an organisation selects specific strategies has been outside of the scope of this study, but raises an interesting area for future research.

11.5.2 Paradigmatic Research

This thesis was multi-paradigmatic, exploring BPM within organisations using a lens that suited the inquiry, in this case, a combination of positivistic and critical approaches (as defined by Orlikowski & Baroudi, 1991). Giore and Pitre (1990) and Lee (1991) indicate that a multi-paradigmatic approach is suited to exploring

complex issues in emerging domains and as a precursor to subsequent single paradigmatic research.

Consequently, there is scope for advancing a cohesive and cumulative body of BPM theory within paradigms. Interpretive research could advance theory into *BPM Progression* by addressing questions such as:

- Why and how do organisations respond to contextual variables in the manner in which they do? How do these responses vary from organisation to organisation?

- How and why do organisations select BPM practices in the capability areas? Are some practices more or less successful, and why is that?

Alternatively, positivistic research could further investigate the relationships between variables, taking into account the temporal and contextual issues found in this study. Such research could further the investigation of commonalities across different groups such as, regions, industry types, stage of progression, scope of *BPM Initiative*, approach to implementing *BPM Initiatives*. Future research is also required to test the theory produced by this study.

11.5.3 BPM Success, Process Success and Organisational Performance

The initial conceptual model, presented first in Chapter 1, showed critical factors and contextual variables of *BPM Progression* combining to produce a construct of *BPM Maturity*. This model also showed the potential relationship of *BPM Maturity* with the constructs of *BPM Success*, *Process Success* and *Organisational Performance*. Aside from *BPM Progression* and *BPM Maturity* however, these constructs have received little or no attention during the study, other than their initial identification. Thus, the study provided a platform for future studies exploring *BPM Success*, *Process Success* and *Organisational Performance* and their relationship with *BPM Maturity*.

11.5.4 Change and Relationship Research

This thesis proposed initial insights and conjectures regarding the relationships, and the change in relationships, between the variables in the measurement model for *BPM Maturity*. In doing so, this research took a simplistic approach to the measurement of change. The study provided early insights into potential relationships but these are by no means exhaustive or conclusive. Rather, the study confirmed aspects about the relationships and the way in which they change, that is that the:

1. Relationships vary between organisations
2. Relationships vary over time
3. Relationships vary dependent on the structure of the *BPM Initiative.*

There is much debate around the impact of measuring change and this, together with these findings, has obvious implications on how to test relationships during subsequent theory testing research.

11.5.5 Measures for Capability Areas

Another area that requires further research is the refinement of the capability areas including the development of measures for these areas. The Researcher has made progress in this area with the piloting of initial surveys however further work is required based on the outcomes of the study.

11.6 Chapter Summary

In concluding this thesis, this chapter has presented:

1. How the study has delivered against the initial study questions
2. A summary of the practical and theoretical contributions of the study
3. A discussion on its inherent limitation and the mitigation strategies adopted by the Researcher to minimise the impact of these
4. A discussion on potential areas of future research.

To commence the study, an in-depth review of extant literature positioned BPM as a new and emerging domain, plagued by inconsistent use of terminology and lacking in a cumulative body of knowledge and theory. To address these issues, the Researcher adopted a multi-paradigmatic stance and a staged approach to the study that incorporated methods including literature review, case studies and the Delphi Technique.

From this base, the Researcher systematically explored the progression of *BPM Initiatives* within organisations, first, developing a conceptual model for understanding *BPM Progression* and *BPM Maturity*. This model was then refined and extended using a combination of case studies and a series of Delphi studies.

Using an iterative case study approach, involving exploratory and longitudinal cases studies, the Researcher then showed that a formative approach to measuring *BPM Maturity* was appropriate for capturing the contextual and temporal implications of progression, and for avoiding spurious results.

In adopting this approach, the Researcher has shown the value in separating the concepts of *BPM Maturity* (a static construct capturing the state of progression at a given point in time) and *BPM Progression* (a dynamic concept that requires a longitudinal view to capture adequately the contextual and temporal aspects of progression). Consequently initial theory on *BPM Progression* and a formative measurement model *BPM Maturity* were developed.

Through all stages of the study, the Researcher has maintained high standards of rigour whilst undertaking highly relevant research. The theoretical and practical contributions and publications are indicative of the success of this effort. Consequently, the outcomes of this study provide a significant contribution to the BPM body of knowledge for both academia and industry.

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13 Appendices

13.1 Multiple Case Study Supporting Documentation (1)

13.1.1 Invitation to Participate

The BPM Maturity Model

A/Prof. Michael Rosemann
Student: Tonia de Bruin
Visiting Student: Tapio Hueffner

Purpose

The purpose of this document is to provide background on the BPM Maturity project being undertaken by QUT and to provide context for <COMPANY>'s participation in a multi-faceted Case Study.

Background

<COMPANY> management and QUT researchers have recognised that Business process management is emerging as an important management practice, providing organisations with a means of increasing competitiveness and sustainability in times of market uncertainty, increasing globalisation and constantly changing business environments and conditions.

Initial investigations undertaken by QUT researchers from July 2003 until now has shown that, despite the potential benefits to be gained, there are few organisations that have been able to successfully implement comprehensive business process management (BPM) practices. A number of studies have highlighted anomalies in meaning and application of BPM whilst identifying factors critical to the success of BPM practices together with approaches and barriers to successful implementation of such practices. These studies however provide little context for BPM application or assistance to organisations in understanding how to progress with BPM implementation and improvements.

QUT researchers are working to develop a generic BPM Maturity model that can be used as a tool within a comprehensive BPM toolkit. The BPM Maturity model will enable the diagnosis of current BPM maturity stages and enable the construction and implementation of a BPM Maturity Roadmap, based on current strengths and weaknesses, for use in progressing to higher BPM Maturity stages. This will enable organisations to improve their success, in BPM activities and in attaining BPM benefits.

QUT/<COMPANY> Industry Collaboration

QUT has approached <COMPANY> with a view to advancing research on the BPM Maturity model that has been developed. In particular, the researchers see working with an industry partner as an opportunity to:

- Assess the BPM Maturity model with regard to its practicality and significance to organisations that are practicing BPM;
- Conduct in-depth discussions with industry practitioners in order to assess the relevance and appropriateness of each of the Factors within the model (i.e. IT/IS, Culture, Accountability, Methodology and Performance);

- Assess the validity and relevance of research questions that are intended for use in gathering data via case studies and surveys into BPM maturity; and
- Ensure that the model has a strong practical basis that will provide benefit to industry practitioners and improve BPM practices both within Australia and internationally.

The structure of this collaborative partnership will include 4 distinct phases including:

- Initial Meeting
- One-on-one Case Study Sessions
- Survey Sessions
- Final Presentation

Details of each of these phases are provided below.

Initial Meeting

The initial meeting will take approximately 2 hours during which time the researchers will give a presentation on the work conducted on the BPM Maturity model thus far. Following the presentation, a short questionnaire will be completed by <COMPANY> representatives, in conjunction with the researchers. The purpose of the questionnaire is to enable the researchers to gain a more detailed understanding of <COMPANY>'s position and history with respect to BPM.

<COMPANY> representatives are encouraged to ask questions and provide their initial opinions of the model at this session.

One-on-one Sessions

Following the initial meeting, one-on-one sessions will be conducted with <COMPANY> representatives that have been identified as specialists in each of

the model “Factor” areas. These sessions are likely to be approximately 1.5 hours in duration. Each session will involve the QUT researchers and the nominated <COMPANY> representative and will focus on the Factor that the <COMPANY> representative is a specialist in. The aim of these sessions is to conduct in-depth research into the Factor including investigating: the relevance of the factor; the appropriateness of the research questions developed thus far; and to further develop Factor concepts based on the practical experiences of <COMPANY>. Participants will be provided with a Case Study Worksheet approximately one week prior to each session to enable preparation for the session.

The major outcomes from these sessions will be used to improve the BPM Maturity model concepts and in particular, the questions used to gather data via the model.

Survey Sessions

Following the one-on-one case study sessions, a survey session will be held with representatives from <COMPANY>’s business divisions. In total, two survey sessions will be conducted – one with Retail and one with Distribution. Each of these sessions will include the QUT researchers and 1 participant from the business. The aim of these sessions will be to test the validity and relevance of the Survey that has been designed. These sessions will cover all 5 Factors. Whilst the <COMPANY> representative will complete the Survey within these sessions, the researchers will use this opportunity to discuss the survey questions. This will be done with a view to assessing: the validity of the questions; the suitability of the answer scale; the ease of survey completion; general survey attributes such as the length of the survey and ways in which the researchers can approach potential survey participants to gain the best possible completion rate.

The outcome of these sessions will be a rudimentary assessment of <COMPANY>’s position within the model as perceived by the two divisional representatives.

Outcomes

The outcomes from all sessions will be analysed and detailed in a final presentation to <COMPANY>, expected to take place in May - June 2004. This will include a rudimentary positioning of <COMPANY> within the model based on the feedback received throughout the above sessions.

13.1.2 Information Sheet and Informed Consent

– Case Study with Company A –

Information Sheet

Chief Investigators: Ms. Tonia de Bruin (Student, QUT)

Email: t.schulze@student.qut.edu.au

Mr. Tapio Hueffner (Visiting Student, QUT)

Email: t.hueffner@qut.edu.au

Project Description

QUT researchers have recognised that business process management is emerging as an important management practice, providing organisations with a means of increasing competitiveness and sustainability in times of market uncertainty, increasing globalisation, and constantly changing business environments and conditions.

Initial investigations undertaken by QUT researchers from July 2003 until now has shown that, despite the potential benefits to be gained, there are few organisations that have been able to successfully implement comprehensive business process management (BPM) practices. A number of studies have highlighted anomalies in meaning and application of BPM whilst identifying factors critical to the success of BPM practices together with approaches and barriers to successful implementation of such practices. These studies however provide little context for BPM application or assistance to organisations in understanding how to progress with BPM implementation and improvements.

QUT researchers are working to develop a generic BPM Maturity model that can be used as a tool within a comprehensive BPM toolkit. The BPM Maturity model will enable the diagnosis of current BPM maturity stages and enable the construction and implementation of a BPM Maturity Roadmap, based on current

strengths and weaknesses, for use in progressing to higher BPM Maturity stages. This will enable organisations to improve their success, in BPM activities and in attaining BPM benefits.

About this phase of the study:

QUT has approached Company A with a view to advancing research on the BPM Maturity model that has been developed. In particular, the researchers see working with an industry partner as an opportunity to:

- Assess the BPM Maturity model with regard to its practicality and significance to organisations that are practicing BPM;
- Conduct in-depth discussions with industry practitioners in order to assess the relevance and appropriateness of each of the Factors within the model (i.e. IT/IS, Culture, Accountability, Methodology and Performance);
- Assess the validity and relevance of research questions that are intended for use in gathering data via case studies and surveys into BPM maturity; and
- Ensure that the model has a strong practical basis that will provide benefit to industry practitioners and improve BPM practices both within Australia and internationally.

The structure of this collaborative partnership will include 4 distinct phases including:

- Initial Meeting
- One-on-one Case Study Sessions
- Survey Sessions
- Final Presentation

The one-on-one sessions are conducted with Company A representatives that have been identified as specialists in each of the model “Factor” areas. These sessions are likely to be approximately 1.5 hours in duration. Each session will

involve the QUT researchers and the nominated Company A representative and will focus on the Factor that the Company A representative is a specialist in. The aim of these sessions is to conduct in-depth research into the Factor including investigating: the relevance of the factor; the appropriateness of the research questions developed thus far; and to further develop Factor concepts based on the practical experiences of Company A. Participants will be provided with a Case Study Worksheet approximately one week prior to each session to enable preparation for the session. The major outcomes from these sessions will be used to improve the BPM Maturity model concepts and in particular, the questions used to gather data via the model.

Expected Benefits and Risks

Participation in this study is expected to lead to improvements in the Business Process Management Maturity Model. Company A will receive first hand results of the study whilst Company A representatives will receive exposure to current BPM research and information. The outcomes from all sessions will be collated and provided to Company A in a final presentation expected to take place in May – June 2004. This presentation will include a rudimentary positioning of Company A within the model based on the feedback received throughout the various sessions. There are no foreseen risks associated with Company A representative's involvement in this study.

Audio Recording of Interviews

With Company A's permission, the research team would like to audio record the interviews for better data capture. Company A may wish not to grant permission to have the interview with their representatives recorded. This will not impact on Company A's continuing participation in the project. If permission is granted for the use of audio recording, all audio files will be destroyed once they have been transcribed.

Confidentiality

All recordings and transcripts from interviews will be kept strictly confidential. Transcripts will be assigned a sequential number and no names will be entered

to the study database. Furthermore, no one outside the research team will have access to the information provided by Company A representatives. In general, aggregated results will be reported. While, some individual responses may be reported, no individual will be identified with any of these responses.

Voluntary Participation

Participation in this study is purely voluntary. Company A may wish to withdraw participation of their representatives at any time, without penalty or judgement.

Questions / further information

If an Company A representative would like to obtain additional information or has any queries they would like addressed, they can contact the research team members below:

Ms Tonia de Bruin

(***Chief Investigator*** / Researcher)
Information Systems Management
Centre for IT Innovation
Faculty of Information Technology
QUT
Level 5, 126 Margaret St
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(Associate Professor)
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Fax: (07) 3864 9390
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Feedback

Feedback will be in the form of results of the study given during a presentation to Company A representatives.

Thank you for Company A's interest and support of this project.

– Case Study with Company A –

Informed Consent Form

Chief Investigators: Ms. Tonia de Bruin (QUT)

Email: t.schulze@student.qut.edu.au

Mr. Tapio Hueffner (Visiting Student, QUT)

Email: t.hueffner@qut.edu.au

Statement of consent

By signing below, you are indicating that you (on-behalf of Company A):

- ❑ have read and understood the information sheet about this project;
- ❑ have had any questions satisfactorily answered;
- ❑ understand that any additional questions can be raised with the research team at any point;
- ❑ understand that Company A is free to withdraw participation of its representatives at any time, without comment or penalty;

(Please tick only one)

- ❑ agree for Company A representatives to participate in the project.
- ❑ And grant permission to audio record interviews
- ❑ But, do not grant permission to audio record any interviews

Name

Signature

Position

Date / /

13.1.3 Interview Guide: Performance

Business Process Management Maturity Case Study Worksheet

Session: Interview – Performance: Qualitative and quantitative measurement of performance

Timing: 1.5 hours

Purpose: The purpose of this worksheet is to provide participants with details of questions and issues that will be addressed during the interview. This will assist participants in the preparation of notes and materials (eg sample source documentation) prior to attending the workshop.

Contact: If you have any questions regarding the content or requirements of the proposed workshop please contact Tonia de Bruin on 0402 794 866 or Tapio Hueffner on 0423 168 155.

Questions – Coverage

1. How does the measurement of performance of process and resources assist in aligning BPM with organisational goals and objectives?
2. How is the performance of processes and resources incorporated into the design of BPM?
3. How is the performance of BPM design measured?
4. How is the performance of processes and resources incorporated into the execution of BPM?
5. How is performance of process and resource execution measured?
6. How is performance of processes and resources used in the control of BPM policies and practices?

7. How is the success of BPM control measured?
8. How is the performance of BPM used to improve future application?
9. What tools are used to measure, analyse and manipulate performance in order to improve BPM?

Questions – Goodness

1. Has the measurement of BPM performance resulted in improvements in the achievement of organisational goals and objectives?
2. Has BPM become more efficient (eg better understanding of policies, removal of non-value-add activities or bottlenecks) as a result of incorporating performance results into the design process?
3. Has the measurement of performance lead to improvements in the execution of BPM?
4. Has the quality of BPM improved as a result of utilising performance based controls?
5. Has the efficiency of resource allocation and usage improved as a result of BPM practices?
6. Are improvement initiatives more pro-active as a result of BPM practices?
7. Are process improvement initiatives more quantifiable and easily able to be supported by quality statistical performance data as a result of BPM practices?

Source Documentation (where possible, please bring samples to Workshop)

1. BPM polices relating to performance
2. Strategic and operational plans
3. Performance measures (processes and resources)

13.1.4 Establishment Survey: Completed by Company B

Business Process Management Maturity

– Case Study with Company B –

Establishment Survey

Description	Question
Demographic	*Organisation Name* Company B
	Year of establishment 1864
	Industry in which organisation operates Transport
	Sector in which organisation operates Answer removed for display purposes
	Country/s in which organisation located Australia
	Annual turnover $ 2 billion
	Total number of employees 13’700
	Position Title of person completing survey Senior Integrated Systems Adviser
Technology	*Which ERP system/s (if any) is used within the organisation?* SAP R3
	Which workflow system/s (if any) is used within the organisation? Depends on the definition of workflow systems. – Several systems provide workflow capability. Process automation is being facilitated by Staffware.

Description	Question
	Which knowledge management system/s (if any) is used within the organisation? Depends on the definition of knowledge management systems. Several systems provide knowledge capture and management but Company B does not have a specific system design for only knowledge management.
Process Oriented Approach	*What role does the management of processes have in conducting the business of the organisation?* Business Process Management is one of the key concepts used in managing Company B's business. Company B's business model is based on the business process management principals.
	How important is this role to the overall objectives of the organisation? If the organisation does not manage their processes efficiently and effectively we will not be able to reach our overall objectives.
	Please explain the approach that has been adopted in order to establish a process-oriented approach to conducting the business of the organisation? The organisation has designed and is not implementing a new business model based on some key principals that are process-orientated.
	The following questions can be read in the context of adopting a process-oriented approach…"to conducting the business of the organisation."
	What were the main drivers of the organisation adopting a process-oriented approach? Competition Stakeholders Customers
	What benefits were expected from adopting a process oriented approach? Profitability and value
	What timeframe was expected for the implementation of this style of process management? 3 years
	What budget was assigned to the implementation of a process-oriented approach? Not available for public knowledge
	What resources were committed to the implementation of

Description	Question
	a process-oriented approach? Different phases of the program require different resource requirements. The core team has 10 full time Company B staff designing, aligning and coordinating the activities of the implementation.
	How would the culture of the organisation best be described prior to commencing the implementation of a process-oriented approach? Company B's culture is loyal, proud, controlling, hierarchical/silo driven
Process Oriented Implementation	*How progressed is the organisation in adopting a process-oriented approach?* If we are looking at the process of change: Shock, Denial, Anger, Negotiation, Depression, Acceptance Company B is currently going through the negotiation phase.
	What approach was taken for implementation of a process-oriented approach? Implementation of aligning process, people and systems
	How was the adoption of a process-oriented approach communicated to staff? Different communication channels on different levels of management
	How were staff kept informed on the progress of implementing the process-oriented approach? See above
	Were the expected timeframes for implementation met? If not, what impact has this had? At this stage timeframes are being met.
	Was the original budget for implementation sufficient? If not, how was this dealt with? Any budget issues are dealt through following a diligent change process.
	Were the original resourcing requirements for implementation sufficient? If not, how were deficiencies met? Not at the beginning.
	What worked well through the implementation of a process-oriented approach?

Description	Question
	Consultation with the business. Urgency for change is within the business due to outside pressures – Company B is ready to adapt to BPM but struggles with an overall standard approach and coordination due to lack of leadership.
	What lessons have been learned through the implementation of a process-oriented approach? Action learning Have a clear scope, measurable and use a simple approach for implementation of change.
	What were/are critical success factors for a successful implementation of a process oriented approach? Leadership Change Management Stakeholder Satisfaction Standard Approach (project management)
	What were/are critical barriers for a successful implementation of a process oriented approach? No leadership (no clear direction) Insufficient change management (culture –silo mentality) Lack of stakeholder management In effective project management No standard approach towards implementation
Process Oriented Post Implementation	*What significant changes have occurred within the organisation as a result of adopting a process-oriented approach?* Collaboration between different functional areas Some sharing of resources, knowledge and information Improved strategic and business plans Some Cross-functional teams
	How has the culture of the organisation changed as a result of adopting a process-oriented? The culture has not changed greatly at this point. People are starting to work together more but there are no results at this stage at how the culture has changed.
	Have the drivers for adopting a process-oriented approach been met? The drivers of adopting a process-oriented approach have been set and are being measured throughout the process

Description	Question
	which will take approximately 3 years. *If not, which ones and why not?* NA
	Have the expected benefits from adopting a process oriented approach been achieved? As above. We are in the process of implementation. *If not, which ones and why not?* NA
	How satisfied is the organisation with the results of adopting a process oriented approach? At this point stakeholder satisfaction is high but there is still some confusion of how wide the changes are going to be due to moving towards being a process-oriented organisation.
	How has this satisfaction been measured? Surveys, one-on-one sessions, participation, improved leadership etc
Maturity of Process Orientation	*How can maturity of a process oriented approach be characterised? How can it be measured?* Achievement of transparent performance information, clear accountability and profitability and value.
	What value-proposition can yield a process oriented approach?
Maturity Model	*What is the main driver to apply a process maturity model?* Staying in business Stakeholder/Customer Satisfaction Profitability
	What value-proposition can yield a business process maturity model?

13.1.5 Feedback Survey

Business Process Management Maturity Case Study with Company *X*

A 'factor' is defined as a specific, measurable and independent aspect of management that reflects the fundamental characteristics of BPM. The five factors that are used in the model are detailed in the following table.

Based on the rating scale where: 1 is Not Important; 3 is Important and 5 is Very Important please rate each factors with respect to its relevance to the organisation's approach to BPM.

Factor	Definition	Rating
IT/IS	The use of IT/IS resources in the implementation and conduct of BPM practices.	1 2 3 4 5
Culture	The acceptance, practice and promotion of BPM by staff within the organisation.	1 2 3 4 5
Accountability	The assignment and acceptance of responsibility for BPM practices.	1 2 3 4 5
Methodology	The adoption of formal methodologies for use in BPM.	1 2 3 4 5
Performance	The measurement of BPM related performance, including activities within individual processes and the performance of process workers.	1 2 3 4 5

A 'perspective' is defined as a high-level repeatable phase that applies to all aspects of BPM (including individual processes). In a functional sense, a perspective may represent an area of expertise or responsibility already existing within the organisation. The five perspectives used within the model are detailed in the following table.

Based on the rating scale where: 1 is Not Important; 3 is Important and 5 is Very Important, please rate each perspectives with respect to its relevance to the organisation's approach to BPM.

Perspective	Definition	Rating
Align	The alignment of BPM strategies and practices with both, the strategic and operational goals and activities of the organisation, and with external benchmarks and best-practice including customer needs.	1 2 3 4 5
Design	The documentation and communication of BPM strategies including, policies and practices, and individual process design.	1 2 3 4 5
Execute	The performance of BPM activities, including the execution of individual processes.	1 2 3 4 5
Control	The measurement, evaluation and reporting of BPM activities, including individual processes and related process-worker performance.	1 2 3 4 5
Improve	The continuous improvement, modification and enhancement of BPM policies and practices.	1 2 3 4 5

Are there other factors that are more important to the organisation than the five included in the model? If yes, what are they?

Are there other perspectives that are more important to the organisation than the five included in the model? If yes, what are they?

Are there ways in which the model could be changed that would make it more suitable for measuring BPM maturity within the organisation?

What do you think constitutes maturity of BPM within an organisation?

13.1.6 Maturity Survey Questions: Culture Factor

The following block of questions starting with "What percent of…" asks for the percentage of coverage and is based on following scale: **1. 0% to ≤20%** **2. 20% to ≤40%** **3. 40% to ≤60%** **4. 60% to ≤80%** **5. 80% to ≤100%**						
	1	**2**	**3**	**4**	**5**	**Not aware**
What percent of core processes are aligned with personnel that support and promote process management practices?	X					
What percent of non-core processes are aligned with personnel that support and promote process management practices?	X					
What percent of core processes have alignment adversely affected by cultural issues?			X			
What percent of non-core processes have alignment adversely affected by cultural issues?			X			
What percent of core processes have been designed by personnel that support and promote process management practices?	X					
What percent of non-core processes have been designed by personnel that support and promote process management practices?	X					
What percent of core processes have design adversely affected by cultural issues?				X		
.....						

The following block of questions starting with "What personnel…" asks for the type of personnel involved in activities related to process management practices and is based on following scale: **1. Key personnel** **2. Executives & key personnel** **3. Executives, management & key personnel** **4. Executives, management, employees & key vendors** **5. Executives, management, employees & select vendors and customers**						
	1	**2**	**3**	**4**	**5**	**Not aware**
What personnel support and promote the alignment of process management practices?		X				
What personnel support and promote the alignment of core processes?		X				
What personnel support and promote the alignment of non-core processes?		X				
What personnel have process related reward/remuneration programs linked to strategic and operational goals and objectives?				X		
What personnel have process related personal performance programs that are aligned with process related goals and objectives?			X			
....						

The following block of questions starting with "To what extent …" asks for the extent of implementation of process management practices and is based on following scale:						
1. Extremely narrow **2. Fairly narrow** **3. About half** **4. Fairly broad** **5. Extremely broad**						
	1	**2**	**3**	**4**	**5**	**Not aware**
To what extent is support and promotion of process management practices displayed by leaders within the organisation?			X			
To what extent do leaders of the organisation support the recognition of end-to-end processes?		X				
To what extent do process management practices include a customer focus?				X		
To what extent do process management practices include a supplier focus?		X				
To what extent are process management practices aligned with strategic and operational goals and objectives?			X			
....						

The following block of questions starting with "How regularly…" asks for the regularity of process management practices being conducted and is based on following scale:						
1. Ad hoc **2. Annually** **3. Semi-annually** **4. Monthly** **5. Continuously**						
	1	**2**	**3**	**4**	**5**	**Not aware**
How regularly are process related change management programs aligned with organisational strategic and operational goals and objectives?	X					
How regularly are process related training programs aligned with organisational strategic and operational goals and objectives?	X					
How regularly are process related reward and remuneration programs aligned with organisational strategic and operational goals and objectives?		X				
How regularly are personnel aligned with core processes reviewed and assessed?			X			
How regularly are personnel aligned with non-core processes reviewed and assessed?			X			
How regularly are details of process related change management programs communicated to staff?	X					
How regularly are details of process related training programs communicated to staff?	X					
.....						

The following block of questions starting with "How is the response to…" asks for describing the response from personnel to process management practices being conducted and is based on following scale:						
1. Extremely reactive **2. Mostly reactive** **3. Equally reactive and proactive** **4. Mostly proactive** **5. Extremely proactive**						
	1	**2**	**3**	**4**	**5**	**Not aware**
How is the response to cultural issues affecting the alignment of process related activities best described?	X					
How is the response to cultural issues affecting the alignment of core processes best described?	X					
How is the response to cultural issues affecting the alignment of non-core processes best described?	X					
How is the response to cultural issues affecting the design of process management practices best described?	X					
How is the response to cultural issues affecting the design of core processes best described?	X					
.....						

The following block of questions starting with "How is the suitability..." asks for the suitability of process management practices and is based on following scale:						
1. Extremely unsuitable **2. Mostly unsuitable** **3. Equally suitable and unsuitable** **4. Mostly suitable** **5. Extremely suitable**						
	1	**2**	**3**	**4**	**5**	**Not aware**
How is the suitability of cultural tools used in the alignment of process related activities best described?			X			
How is the suitability of cultural tools used in the alignment of core processes best described?			X			
How is the suitability of cultural tools used in the design of process management practices best described?	X					
....						

13.1.7 Write up of Interview Notes: Company A

Performance

A perceived problem for Company A was that they *"had functional management combined with end-to-end processes that cut across functions"*. The Procurement-to-Pay process went across four areas. There were no performance measures for processes although there were KPI's and bonuses for some roles within a process. Senior management performance reviews incorporate milestones/goals linked to change programs and there was a strong link between the change management and process areas. For each person there are KPI's *"around their section of the process and for accountability for resources"*. The functional boundaries created issues around *"hand-over points"*.

At a corporate level key result areas e.g. operational excellence, used network service level agreements (SLA's) and customer SLA's to cascade through the lower levels of the organisation. The concept was similar to balanced score card and thus linked to stakeholders rather than core processes. Common means of monitoring performance included *"external stakeholder needs analysis, benchmarking with peers and business (e.g. with manager each 6 months and other staff annually) and feedback sessions"*. Customer service surveys (internal and external) gather information and feed it back into the process. Internal surveys are annual and external surveys are quarterly. Some areas had *"escalation processes in place"* for unacceptable performance. For major process redesign projects, post audit reviews were undertaken. The focus of most projects was on standardisation with limited attention paid to value-add. Going forward there was an expectation that *"benefits needed to be delivered"*.

Performance did not play a major role in process design although areas of strength and weakness helped target areas of improvement within a process. In particular, people looked for *"improvement in outputs from a process"*. Company A was at a point where core processes were standardised and they were looking

at which processes to improve and how to prioritise improvements. The perceived level of importance helped prioritise process improvement projects, if *"just continual improvement"* then it was part of *"normal operations not at a corporate level"*.

It was felt that there were *"an inordinate number of policies and practices"* being used to control processes. There are 3700 written and available on the intranet and *"some have 7 doing the same thing"*. There was a view that *"the pendulum had swung too far"* and if a process is seen to fail or is not performing well, a detailed procedure is being written to micro manage the process. There are policies and procedures that are easy to follow with success measured through feedback from managers and staff. Despite attempts to measure progress, they *"don't do anything about it"* once the measures are captured. Other measurement mechanisms include staff feedback using normal management lines, forums conducted by business units and two senior business forums, employee surveys and customer surveys.

There is a planning process to go through feedback and align it with opportunities and resources (human, financial and capability) in order to prioritise it with future needs. The current business process model feeds into this and indicates known issues with process X. Despite this, *"measurement is on the functional components of the process rather than the process itself"*.

There is strong use of benchmarking against financial, operational performance (e.g. time to connect in call centres network performance) and corporate capability (e.g. number of support staff per workforce). Other measures include number of outages, duration of outages, maintenance and surveying customers for satisfaction with sub-processes. There was a feeling that these measures did not result in efficient or effective processes due, in part, to external influences where independent reviews by external bodies lead to revenue adjustment. An independent regulator, reviews Distribution and sets prices, then measures against different measures. In Retail, the Office of Energy benchmarks customer services and cost to set prices.

Both areas of the business (i.e. Distribution and Retail) were effectively monopoly

(or non-competitive) businesses. For example:

- Generation (of electricity) is largely government owned.
- Transmission (of energy) is through a separate government owned company.
- Distribution (i.e. Poles and Wires) is through only two companies (including Company A).
- Retail is only contestable in the market of more than 200 megawatts per hour in south-east Queensland, New South Wales and Victoria and there are only 4 companies operating in this market (including Company A).
- All customers are effectively government voters.

A focus on BPM was having a positive effect on achieving goals and objectives. When Company A first formed, it had 6 ways of doing asset management, ranging from reasonable systems to no systems. They did not know how many poles, where they were or what condition they were in. Now they do 70 tests using palm pilots to record the information and use satellite tracking to locate them. They have identified approximately 70 thousand defective poles (out of 1 million). This has led to the identification of significant risk and the potential for litigation issues should anything go wrong with the defective poles. A subsequent defect identification program then led to finding all the defects and fixing them during a 6- month period and setting in place a new process (i.e. AIDM – Asset Inspection and Defect Management process) for identifying future defects in line with statutory requirements. This has led to a significant change in culture.

Early emphasis has been on stamping out fires and whilst there has been process improvement in some areas, it is not so much in the policies and procedures areas. The *"bureaucratic nature of the organisation has lead to a (too heavy) focus on risk management and not on process efficiency"*. There is still a need to look at priorities and plan these in the future, working in with the risk management perspective. In Retail there is a contract with the customer for

a per hour rate for each megawatt. Standard electricity prices can be $27 or $28 per hour, per megawatt, but the price can move markedly. At any point, there is no knowledge of what electricity demand is going to be for a customer. Consider the difference in a dragline - if a dragline needs to walk it will cause a power surge – or if it does not walk, it does not use power. This can lead to a significant mismatch between usage and pricing dependent upon whether the dragline walks or not. Therefore, Company A uses hedging and contracting to cover price movements. In fact, it is a world leader in processes around forecasting, hedging and contracting.

There has been an improvement from using BPM controls. Although there is a feeling that Company A needs to get to measuring the process itself rather than just measuring the outcomes. Advantages of a process focus have been both *"cost reduction and resource allocation"* although a lot of this comes down to the maturity of the processes and the level of improvement possible within them. The age of the electricity network (i.e. met the needs of 20-30 years ago) is like to lead to enormous upcoming maintenance where capital expenditure is coming up but financial and human resources are limited so efficiency and effectiveness of future operations is critical. Furthermore, the quality of supply and its consistency is important as surges/spurts also cause problems. The focus has been on *"getting capability, but this needs to move on to improving capability"*.

In the beginning, the focus was very top-down but over time it is becoming more bottom-up with more change initiatives being driven by the process workers. There is a desire to move towards improving on the use of KPI's and linking to performance of process. There is increased use of technology to improve processes however some systems are still just *"band-aids"*. To improve the process there is a need to improve the management of information around the process. Advancement in this area has been in the move to link funding for projects to articulation of the benefits and explicit statements on measures.

Accountability

Company A recognises various levels of accountability with the company seen to be *"autocratic and bureaucratic"*, although there was a view that the new CEO

was looking to devolve this. The new CEO has been able to look across the high-level goals and objectives and was reportedly *"not happy with the outcomes"*. There is a perceived *"lack of understand and poor reaction"* to the need for accepting accountability and the company falls short of *"doing anything about it"*. The two business areas of Company A were (1) Distribution and (2) Retail. In retail where there is a real commercial need to deliver something (such as in the distribution or retail areas) *"things are a bit better but again it comes back to the maturity of the organisation"*.

There is some linkage between accountability and organisational goals and objectives at a CEO and senior executive level although this is at a strategic rather than an operational level. Furthermore, this happens on a functional and not a process basis, with lower levels done on a procedural basis within functions. For example, L1-4 managers (i.e. direct reports to the CEO) have process based Performance Agreements although the *"entire process is not done satisfactorily"*. Other than with finance processes, there is little accountability for processes at lower levels. Within finance processes accountabilities are well defined but at an operational and not a strategic level.

The business planning process for determining strategic values was *"quite strong"*. Although there was a feeling that the way this is subsequently devolved through the organisation was not so and that *"it becomes operationalised too early"*. One of the strategies is to get into the Top 5 companies in Queensland and the Top 100 companies in Australia but senior managers need to break this down and make it happen. Similarly, a review by the CEO had led to the identification of 3 processes that were seen to take too much time and resources being: contractors, recruitment and selection and cultural issues. This provided senior management with the strategic direction but it was up to the business managers to define how to do this. The perceived problem is that *"people at the bottom end don't know what the deliverables are or who are accountable for the outcomes"*. A possible exception was the call-centre where all technicians' record, measure and relate performance to defined outcomes.

To assign accountability, Company A has a process whereby key deliverables / key result areas (i.e. what we are doing strategically and how it is to be done) are

pushed down from the top. All managers have key deliverables tied back to these although few are process based. Despite this, Company A does not recognise accountability in many process areas with *"managers focused on managing the budget and not the 25 processes that sit underneath this"*. At lower levels, there is only functionally based accountability and there is *"no motivation to perform well"*. The feeling was that senior-levels were almost there, as expressed by the comment: *"The Performance Agreements with L1-4 managers seem to be almost right, we haven't been doing it long but it seems to be working soundly. Although these can have up to 25 key deliverables, best practice indicates they should have 5-6 so they are defeated before they start"*. Whilst there is so much detail being included in the Performance Agreements it is felt that at lower levels this will be an issue due to the inability to prioritise between key deliverables due to a tendency to think that they are all important. There is the view that *"because Company A is only 5-6 years old it does not do this well and that is a sign of low level of maturity of the company"*. The company was looking more at the balanced score card approach and the ability to link reward and remuneration on this basis. In designing accountability there is a feeling that *"less is better than more"* and a *"need to establish and train in KRA's"*.

Accountability for the performance of processes is through negotiation. Formal (12 months) and informal (6 months) reviews include analysis and reports. Projects are separate and are reviews are against project deliverables. If a non-award person, good performance possibly links to reward and bonus schemes[114]. If an award person, performance links to an Enterprise Bargaining Agreement (EBA) that incorporates automatic pay increases.

There is the view that *"there is a blameless society so people do not accept responsibility is something goes belly-up"*. Even when accountability is assigned, the company does not *"hold people accountable"*. This is evident in views such

[114] In Australia use of the terms "non-award" and "award" is in relation to working conditions of employees. Those covered by an industrial agreement are "award" employees and those not covered by an agreement are "non-award". Further details on the distinction between award and non-award can be found at: http://www.wageline.qld.gov.au/nonaward/index.html.

as *"this is the way things are done so don't rock the boat"*. There was also an element of rejection with people *"holding on to old values as they did not see that they were failing"*. There was a view that this had resulted in greater resistance to changes in accountability as people are *"too frightened to make decisions or do something, with lots of arse covering to ensure nobody is at fault"*. An example of this was in the project to improve the appointment of contractors and expert consultants. The project took 18 months – 2 years to complete and now there is a process that is so well documented it is too unwieldy to use. This was because people were so afraid to make decisions and accept accountability that they developed a process that would never get them in trouble but that is completely unworkable.

The role of the CEO and leadership was evident in the view that *"accountability needs to be driven from the top"*. Similarly, the execution of BPM has failed in many instances because it is *"a product of the culture and the environment"* and the affect of these needs to be considered. To support this notion, an example of the retail division was given whereby this area was seen to *"be much more black and white, more measurable, less open to variables such as climate, disasters, and geographic spread, less unionised, newer with less history and more commercially driven"*.

Methodologies

Company A uses a combination of internal and external methods. At the highest level, many methodologies are custom designed, such as the Process Management Manual that is available to all staff via the intranet. A legacy from the merger of the six old businesses is a focus on jobs and functional issues not processes. Consequently, although a Process and Quality Strategy exists although it is 3 years since the last update. There is a loose version of the balanced score card approach is used, although there is no direct link between strategic planning and process, it is more indirect. A transitional period is commencing where Company A is looking at two stages *"now"* and *"what may be"*. Work has commenced on a new process framework although this needs *"buy-in"*. This framework incorporates a process model constructed from other industry reference models and Accenture's model for the industry. In total, there

are 25 identified enterprise processes with seven partially documented and three completely documented. Some processes need to be compliant with ISO9000 and have already implemented a quality view of process. Other methods used include benchmarking (e.g. UMS utilities benchmarking) and customer surveys once a year to assess progress.

The design of processes utilises 4TQ software and its supporting methodologies[115]. There is both centralised and decentralised use of methodologies as anyone can design and model processes. There are process analysts in most business units that support BPM. Analysts can be either internal or external to the organisation. Historically multiple methodologies were used to model processes, based on the experience and skills of the analyst. The present use of the intranet as a single point of process documentation has seen the introduction of controls around the published process documentation. Projects now drive the identification and modelling of processes. Requests come from the business (i.e. middle management) and subject matter experts come together to design the process. It is more difficult to design processes that are outside projects. The core process team provides training in the methodologies.

There are no recognised process improvement methodologies in use although this is marked for inclusion in the next stage. Company A is considering the use of the Australian Business Awards Framework allowing business areas to decide independently on whether or not to adopt[116]. Innovation methodologies have been trialled but these *"did not get off the ground"* and there is a feeling that the *"environment needs to conducive to them before they are introduced"*. Methodologies for change management are formalised through the corporate culture area making process people more closely aligned with this area. Historically there has not been much consultation and a lot of informal communication surrounding methodologies for controlling BPM. There is now a Business Unit Working Group consisting of the process managers. This is a

[115] 4TQ is business process management software provided by Axion. Further details about 4TQ can be found at: http://www.axioninnovations.com.au/.

[116] The ABEF is now known as the Business Excellence Framework. Further details about the BEF can be found at : http://www.saiglobal.com/Improve/ExcellenceModels/Business ExcellenceFramework /default.htm.

formal network responsible for *"updates, the quality of content, the new process framework and any interface agreement"*. This group is *"quite supportive"* and with the passage of time, people are beginning to see the value of process material.

Company A have a federated model with a centralised process team and decentralised business areas that have a stake in the outcomes. Consequently, the core BPM team does not have any authority for mandating the use of methodologies. The use of a Quality Manager was seen as a *"bad thing as people view BPM as being their responsibility"*. The team does have a training arm and has developed manuals in process documents. This team does not usually do formal audits but have done one. This audit indicated that there was *"some level of understanding of process"*. The problem was though that *"only 20 processes use process in a holistic sense and for other others, procedure equals process or workflow equals process"*. The new process model that is being used to guide future process development includes 4 levels: Level 1 – Process, Level 2 – Sub Process, Level 3 – Activities and Level 4 – Tasks, Procedures and Work Instructions.

The environment has influenced the effectiveness of methodologies. Although the CEO is *"quite process oriented"* coming from a process re-engineering background, it is felt that his laissez-faire view resulted in his high-level view not flowing through to practice. The affect of personality and leadership was raised and whilst the process side was viewed as *"relatively straight-forward and the soft bit such as negotiation and compromise is the hard bit"*. The view was that *"difference styles of people resulted in a sub-optimal approach"* and furthermore, *"that success factors were skewed to top level support having knowledge and doing something"*.

Information Technology / Information Systems

Company A used a *Statement of Corporate Intent* to set budget factors through a rigorous, six-month planning cycle. This incorporated a *Programs of Work* that used matrix and evaluation options to approve funding for various projects. A *Change Program* looked at projects implementing solutions and including cultural

change and a *Line Program* looked at projects to maintain existing IT facilities. Of the projects included in the *Program of Works* it was stated, *"only 50% of projects actually happen"*. The *Program of Works* provides direction for the IT budgets and planning. When aligning IT with process requirements, there was some thought that *"this doesn't really happen"*. Further evidence of a lack of alignment was evident in comments concerning the allocation of resources and funds that *"didn't need to be improved as money is not a constraint and if there is a legitimate use for it"*. Despite this resourcing projects that affect (defined) processes was *"based on the availability of resource rather than the person that owns the end process resulting in a mismatch between requirements"*.

There is an apparent disconnect between *process* and *function* within Company A with reports that *"at a high level they are talking process but the low level is thinking function"* and that *"processes still live in silos"*. Despite this, Company A uses System Enterprise Architecture documentation to maintain the relationship between *process* and *function,* going so far as to internally develop procedures for ensuring people maintain the spreadsheet that maps relationship diagrams. There was little integration with other stakeholders within the supply chain although Company A was *"looking to implement a new system to deal with this soon"*. An internet based sales point was available although this was *"not integrated and requires manual intervention to get onto the internal sales system"*. Company A used an Oracle Financials and Logistics system to integrate financial processes[117].

Processes were modelled using flow charts and input-output processes within a product called 4TQ[115]. There was little control over the use of the 4TQ software with access given to *"those who want to use it"*. It was felt that the product was *"fairly user friendly"* although there were moves to consider a replacement software as the company was *"thinking about new software like ARIS"*[118]. The use of IT/IS in process design was seen as positive. An example provided was

[117] Oracle provides software for industry-specific processes. Further details about Oracle financial software can be found at: http://www.oracle.com/applications/financials/intro.html.

[118] ARIS is a business process management software provided by IDS-Scheer. Further details about ARIS can be found at: http://www.ids-scheer.com/en/Software/ARIS_Software/3730.html.

the release of a new *"Contractors and Consultancy Process"* that acted to merge 6 processes into 1. The ability to search process documentation and models and to see the level of duplication evident had resulted in an increased awareness of duplication and the need to streamline.

There was a level of in-house development and use of externally supplied IT and IS with over 1000 systems and more than 800 desktop applications used within Company A. Despite the significance of IT to the operations of the business, the view was that systems were *"largely disjointed"*. There were plans to *"look at integration through a new ERP as opposed to a best of breed system"* and that this would encapsulate about *"50% of existing systems"*. There was a view that *"processes were not looked at deeply enough and that improvement projects do not incorporate the needs of all business areas"*. An example given was that of automated timesheets which were believed to have become *"less efficient"* although changes to the travel process were perceived more positively. Despite this, there were success stories perceived as helping future process-automation efforts. The implementation of an automated pole inspection process within SAP saw the replacement of a manual system of asset identification used to inspect poles, for example.

The intranet plays a major role in the control of BPM policies and procedures within Company A. Everyone has access to it and a dedicated process management site (i.e. *Process Zone*) provides access to *"current, authorised process documentation"*. In an attempt to control individual use, Company A uses a *Systems Agreement* signed by all staff to agree the manner in which they will operate. A number of process automation activities have resulted in on-line forms becoming available to staff through *Process Zone* (e.g. there is one for Travel but not yet for Leave). Company A has implemented an authorisation process to control process models and documentation available to staff through Process Zone with the approval name put on all documentation. The *Process Group Publication Controls* document details this process. Company A can see a *"need for IT/IS to be used in the control of high impact processes"*.

Mostly Company A uses e-mail functionality as a means of improving BPM. In particular, people use e-mail to solicit feedback from *"SLA meetings, agreements*

and the help desk". IT/IS is used to improve process documentation as the intranet site provides access to one source of process documentation. From here, individuals can *"search the system for a process, find out the process owner, download and change the documentation or model and submit revisions for update". Process Zone* provides access to details of recognised roles of *"Process Owner"*, *"System Owner"* and a *"Business Process Document Co-ordinator"*. Another example of where IT/IS had improved process management included the implementation of a customer management system to respond to customer calls. During this project, the *"accuracy of addresses was improved by 80% making roll-out far more effective"*.

Despite the clear affect of IT/IS on various aspects of BPM, BPM is not seen to be a vehicle for improving IT/IS functionality, as reflected in the comment *"I don't think that it is thought through that way"* when asked if the suitability of IT/IS had improved because of BPM. Similarly, people did not see BPM as having improved relationships between IT and the business. It was felt that people within the IT area *"don't understand what is being pushed from the process area"* and that while there is *"lip service"* and *"agreement on the surface"* they choose to *"resist in strange ways"* with people not *"living it day to day"*.

Culture

Company A had aligned BPM with the strategic vision of the organisation although there was continuing debate around the separation of process and function. Company A was functionally structured and there were no plans at this stage to change this. It was felt that as the *"industry was functionally based it made sense to leave it this way to enable benchmarking"*. Despite this, the existence of functional boundaries was contributing to the *"degree of duplication"* and to *"low levels of trust between functions"*.

The culture of the Company A was seen to impact on BPM in 3 ways, expressed as *"opposition, avoidance and conventional"*. Opposition was *"doing their own thing and not accepting new guidelines"*. Avoidance was expressed as *"a sense of, it's just going to change so don't worry about it"*. Conventional as *"following policy, process and procedure i.e. I was just following policy, with no acceptance*

of responsibility". Similarly, there were comments about the affect of personality types on the acceptance of BPM. Company A was described as being *"engineering and technical"* with people being *"questioning, challenging and critical"*, for example. Company A was looking to psychological principles of acceptance and responsibility and looking to introduce change management, coaching and mapping leader profiles to change the impact of these. There was a view that *"when change management was done well"* people were increasingly positive about process but *"when change management not done well"* it was not so good.

There was a high reliance on governance and a tendency to *"overcompensate through the use of rules and policies"* making for a rules-based organisation. Over 3200 documents included details of processes ranging from process through to procedural. It was felt that many people within Company A *"misinterpret process and think of it as a procedure"*. An internal review of delegation levels had found that people felt restricted by the rule driven culture. By building awareness of the current culture and thinking about where the organisation wanted to go with process management Company A was experiencing a bottom-up, groundswell of support from people being too restricted to be able to do their jobs. Further evidence of this was in the lack of discussion during the first 12-18 months of the *BPM Initiative* whereas, BPM was now a key topic of discussion and *"people were fighting back"*. Compounding the rules-based view of Company A was the view that the unionised environment led to *"one-way to do things"*. This authoritative approach resulted in a *"chicken and egg"* situation. Rather than a *"constructive-consulting"* approach between Company A and the unions, there was the use of a *"blame-allocation"* approach. It was felt that the only way to resolve such issues was by leadership.

There was no clear way of making decisions about BPM policies and practices within Company A – rather the described approach was to *"stick a finger in the air"* and largely *"driven out of projects"*. A principle driver of BPM was the lack of co-ordination and high disparity between projects and an aim to try and *"bring things together"*. A contributing factor to this was the high use of consultants and contractors that had a penchant for *"doing things their own way"*. Consequently, there was no clear path for becoming involved in process-based projects with

resourcing sometimes based on expertise and sometimes relying on an invitation to join a project. To some extent, *"the importance of project and the need to have a pool of process resources utilised somewhere"* affected this decision.

Communication about process within Company A was a perceived issue with the feeling that they were *"better at target audiences and not so good at internal consulting"*. There were communication up-dates such as monthly emails detailing the work underway on process/procedures. Despite this, there was the feeling that view was on the end gain and that people were not really listening to the communications resulting in a lot of micro variation evident at lower levels.

The ambiguity of BPM was an issue with senior managers reportedly taking up to 2 years to come to terms with the concept. Similarly, within Company A there was a realisation about the affect of *"the behaviour, beliefs and mind-sets of organisations"* and an awareness of both the *"social pressure"* and the *"socialisation impact"* of BPM. Educating about BPM in order to *"build knowledge"* was critical within Company A. There was a view that they *"did quite well at training"*, that *"dealing with change and communication was improving"* and that *"reward and remuneration was in its infancy"*. The continuing low acceptance of process was evident in *"low levels of innovation with this not being a natural reaction to the operation"* although it was believed there was *"growing understanding of its importance"*.

13.2 Delphi Study Supporting Documentation

13.2.1 Email Invitation Sent to Prospective Participants

Dear All

At our last BPM Meeting facilitated by Brad, it was agreed that a series of Delphi studies was the most appropriate way of progressing Level 2 of the BPM Capability Model. This process will enable experts to provide responses to set questions via email. Responses are only sent to the Delphi Study Coordinator (Tonia) to ensure open and equal opportunity for all participants. The Codification Team consolidates all responses and returns codified results to the wider group for consensus. In order for the Delphi Studies to be effective strict timeframes must be adhered to. All non-responses within the required timeframes will be removed from further participation.

To ensure the Model captures our broad spectrum of expertise we are now seeking your active contribution and consensus between all participants. As such, this email serves as your invitation to participate in the proposed Studies.

Attached is a brief word document that provides further details including:

Page 1: Background and Methodology
Page 2: Timeframe and Schedule
Page 3: Questions and Responses
Page 4: Participation Questionnaire
Page 5: Contact Details

If you are interested in participating in any of these studies we would ask that, by the end of this week, you complete and return the Participation Questionnaire on Page 4 and, if required, update your contact details shown on Page 5.

If you are not interested in participating in these studies we would ask that you advise by reply email so that your name is removed from future correspondence. If you have any questions regarding the Delphi Studies please contact me.

13.2.2 Proposal Sent to Prospective Participants

BPMM Model - Delphi Study

Background

As members of the BPM Maturity group we have been meeting over the past six months to progress a model that will enable the assessment of BPM Maturity within organisations. The aim of this group was to develop a model that met the needs of varying audiences and stakeholders with respect to assessing BPM Maturity. To this end the model has been developed on 3 levels represented by varying levels of granularity.

Level 1 of the model included the identification of 6 BPM critical success factors: Strategic Alignment, Governance, Method, IT/IS, People and Culture. This level was derived primarily from an extensive literature review, supported by application in case studies and surveys and limited individual involvement.

Level 2 of the model is to include identification of BPM capability areas within each of these factors together with formalising the definition of each factor. To ensure the model encapsulates a broad representation of BPM capabilities, a more expansive and inclusive approach to development is proposed for Level 2. This approach will leverage the expertise available within the group in a more rigorous and controlled environment. The result of this approach will be a comprehensive and supportable level within the model that incorporates the expertise of participants.

Level 3 of the model is to include specific questions within each of the BPM capability areas that will enable the assessment of BPM maturity. The approach to developing Level 3 will be confirmed at a later date.

Methodology

In developing Level 2 of the BPMM Model a series of Delphi studies will be conducted. The Delphi Technique is traditionally used by researchers conducting

studies where identification of emerging issues and consensus of opinion on such issues from a group of experts is required.

A Delphi study consists of a series of brief questionnaires used to elicit responses from participants over a number of study iterations (generally 2 or 3).

Questionnaires and responses are forwarded via an efficient communication channel such as e-mail to ensure anonymity of responses. Experts participating in the study are asked to identify issues or to evaluate responses until consensus is reached.

To ensure timely progression of the study, a strict timetable is adhered to with non-responses being excluded from that iteration.

Purpose

The purpose of the Delphi studies is twofold:

3. Agree the definition of each factor in the context of BPM; and
4. Determine and agree the *BPM capability areas* within each factor.

Outcome/s

1. BPMM model – Level 2.

Delphi Study Timeframe and Schedule

Individual studies will be conducted for each of the six critical success factors: Strategic Alignment, Governance, Method, IT/IS, People and Culture. As experts may be involved in more than one study, individual studies will be conducted primarily on a *consecutive* basis. Each study will be conducted over an 8 week period with a two week overlap between studies.

Individual participation by experts is expected to involve approximately 1 hour for each study. Final results will be presented to the entire group via phone conference to be scheduled at the end of the 8 week timeframe.

Week	Action	Timeframe
1	Send email re participation Confirm participation and collect demographic details	W1, D1 (Week 1, Day 1 i.e. Monday) 1 week to respond
2	Circulate Question 1 – In the context of BPM, how would you define *Factor X?*	W2, D1 1 week to respond
3	Consolidate responses Circulate proposed definition of *Factor X*	W3, D7
4	Further investigate and clarify variations Reach consensus Circulate final definition of *Factor X*	W4, D7
5	Circulate Question 2 – Within *Factor X* (as defined in Week 4), what do you consider to be the BPM Capability Areas critical for achieving BPM success?	W5, D1 1 week to complete
6	Consolidate responses Circulate proposed *BPM Capability Areas*	W6, D7
7	Further investigate and clarify variations Reach consensus	W7, D7
8	Circulate final *BPM Capability Areas* Phone conference with broader group to advise results	W8, D3 W8, D5

Factor	Start	Finish
Strategic Alignment	21st February 2005	17th April 2005
Governance	4th April 2005	29th May 2005
Method	16th May 2005	10th July 2005
IT/IS	27th June 2005	28th August 2005
People	8th August 2005	2nd October 2005
Culture	19th September 2005	13th November 2005

Delphi Study Questionnaire

The Delphi study conducted for each BPM factor (Strategic Alignment, Governance, Method, IT/IS, People, Culture) will address the following questions:

Question 1.

In the context of BPM, how would you define *Factor X*?

Question 2.

Within *Factor X* (as defined in Week 4), what do you consider to be the BPM Capability Areas critical for achieving BPM success?

Responses will be consolidated by the Codification Team prior to being circulated back to the expert participants for consensus.

Delphi Study Participation

Please complete the following table to indicate your intended participation in the upcoming Delphi Studies. Participation will be confirmed prior to the commencement of individual studies.

Please complete by inserting your details				
Organisation:				
Department:				
Occupation:				
Location:				
Please complete by placing an **X** in the applicable box				
Category:	Academic		Industry	
Participation:	Strategic Alignment			
	IT/IS			
	Method			
	Governance			

	People			
	Culture			
Please complete by inserting details of other known experts that may like to participate in these studies				
Name:				
e-mail:				
Area/s of expertise:				
Category:	Academic		Industry	
Name:				
e-mail:				
Area/s of expertise:				
Category:	Academic		Industry	
Name:				
e-mail:				
Area/s of expertise:				
Category:	Academic		Industry	

Delphi Study Contact Details

The details below will be used for all correspondence regarding the Delphi study. Please advise if your details need to be updated.

BPM Experts – Delphi Study Participants

The following table includes details of BPM experts that will be approached regarding participation in the individual Delphi studies. This list will be updated as details of additional experts are provided.

Participant A	participantA.@companyX.net .....
Participant B	participantB.@companyY.net .....

BPM Experts – Codification Team

The following table includes details of BPM experts that will be approached regarding membership of the Delphi Study Codification Team. Members of this team will not provide individual responses to Delphi Study questions but will be responsible for collating and codification of responses. Tonia de Bruin will be responsible for the overall administration and co-ordination of the studies with Coder A and Coder B providing expert assistance in the codification of responses.

de Bruin, Tonia	t.schulze@student.qut.edu.au
Coder A	coderA@uniA.com
Coder B	coderB@uniB.com

13.2.3 Confirmation Email Sent to Participants

Dear Michael

Thank you for accepting our invitation to participate in this international study on Business Process Management Maturity. We are pleased to advise that we have between 14 and 17 experts participating for each of the six Factors of our model.

This email signals the start of the first Delphi Study in our series that will facilitate finding consensus between all participants. Round 1 will focus on the factor **Strategic Alignment** of Business Process Management. The first question for this round is:

In the context of BPM, how do you define Strategic Alignment?

Please provide your response to this question by return email no later than **Friday 4th March 2005.** Responses should be no more than 2 or 3 sentences.

If you have any questions, please contact me.

Best regards

Tonia

13.2.4 Report to Panel Following Pilot

Business Process Management

– Strategic Alignment Final Summary –

Introduction

A series of Delphi studies are in the process of being undertaken with the view of further developing the proposed BPM Maturity Model. The data gathering stage of the Strategic Alignment study is now complete. The purpose of this paper is to provide participants with a summary of outcomes including discussion of both 1) major points raised during the study and 2) outstanding issues at the completion of the study.

Each study seeks to answer two primary questions:

1) In the context of business process management, how is Factor x defined?
2) What areas of Factor x should a contemporary maturity model be able to assess?

Detailed timeframe

The Strategic Alignment Delphi study commenced on 28th February 2005 and consisted of four rounds conducted over an eight week timeframe.

Participants

In total 18 experts participated in the study.

Participant A	USA	I
Participant B....	USA	A

A summary of participant demographic information is:

Category / Region	I	A
USA	8	5
Australia	2	1
Europe	2	-
Category Total	*12*	*7*

Definition

The final definition proposed definition for Strategic Alignment was:

In the context of business process management, Strategic Alignment is the tight linkage of organizational priorities and enterprise processes enabling continual and effective response to achieving business goals.

The aim of the Delphi study was to have all participants satisfied with the definition to at least a Rating of 5.

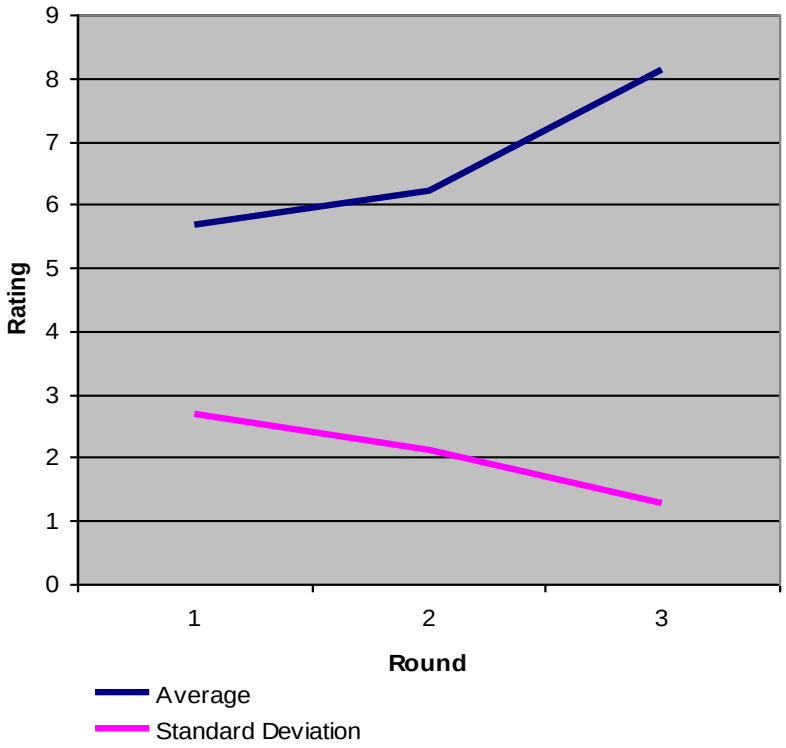
Final ratings for the definition were provided by 14 of the 18 experts.

Rating	0	1	2	3	4	5	6	7	8	9	10	Total
Count	-	-	-	-	-	1	-	2	6	3	2	14

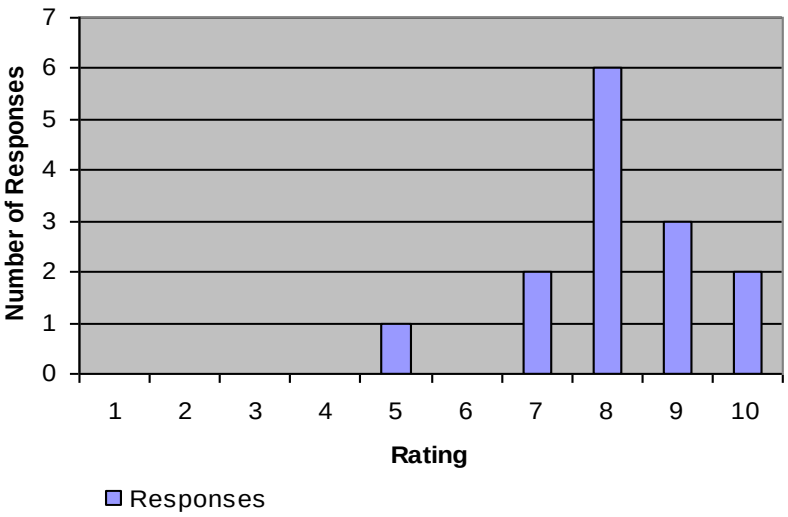
Average: 8.143 **Standard Deviation:** 1.292

The change in the average and standard deviation of ratings over time are shown below.

Results: Average and Standard Deviation



Results: Responses per Rating



Areas of Agreement

The major area of agreement with the definition was that it was short and to the point. Comments provided by the Expert Panel included:

- ✓ *I like it – simple and to the point. (3)*
- ✓ *It's Ok that you try to make it shorter…. (9)*
- ✓ *Better because it is shorter and focused. (14)*
- ✓ *I like it more because it's more concise… (15)*

Previous comments indicating that length of the definition was an issue included:

- ✗ *Too wordy. (1)*
- ✗ *….too wordy and too fuzzy…. (10)*
- ✗ *Overall great. A little long, but OK. (5)*
- ✗ *A little bit too long but I understand why. (12)*

Outstanding Comments

Whilst achieving this aim, a number of participants have highlighted areas where they believe the definition could still be improved.

Proactive Nature of BPM

The most recognised issue remaining with the definition focuses on the proactive nature of BPM. Comments provided by the Expert Panel were:

- *Highlight "proactive" approach….(3)*
- *"response to achieving goals" sounds awkward, is there a better way to phrase it? You don't respond to achieving a goal (because by then it is too late), you respond to the progress made in the pursuit of a goal…. (10)*
- *I'd change the word 'enabling' to 'driving to enhance the view that process based management is a proactive activity. (13)*
- *I am not convinced that the term 'response' is well chosen. It gives BPM a reactive flavour. Alternatives would be "is the tight, effective and continuous linkage of" and delete everything from "processes" or to replace response with "achievement of business goals". (14)*

Major Discussion Areas

During the development of the definition there were a number of areas that were common discussion points.

Use of the word “continual” or “continuous”

Many of the initial proposed definitions, or comments on the definitions in subsequent rounds included the words “continual” and/or “continuous”. The coders believed that the intent of usage was to highlight that strategic alignment was not something that just happened once a year but rather that it was an on-going, every day practice. Consideration was given to both words with the final selection being “continual”. The reason for this inclusion was based on comment taken from the Australian Oxford Mini Dictionary, Second Edition (p. 107).

“Usage: *Continual* is often confused with *continuous*. *Continual* is used of something that happens very frequently (e.g. *there were continual interruptions*) while continuous is used of something that happens without a pause (e.g. *continuous rain all day*).”

Use of the term “end-to-end” processes

There were a range of words/phrases used to describe the scope of processes to which the definition referred including: end-to-end, enterprise-wide, mega, core, enterprise business, operating, cross-functional business, critical business and business.

An earlier iteration of the definition included the use of “end-to-end” processes however this was changed to “enterprise” process following comment from the Expert Panel. Such comments included:

- *End-to-end is simply no good – not the definition but the term. It is cumbersome while lacking the clarity that it is a TERM. (7)*
- *Great except for end-to-end! (15)*

Capability Areas

Within Strategic Alignment seven capability areas were identified as being important for assessment. Thirteen participants participated in weighting these areas on perceived importance. In order of

Process Improvement/innovation/change

Linkage of strategy and process capability

Enterprise processes

Process output measurement

Extended value chain

Strategic priorities

Operational translation

13.2.5 Diary Note: Pilot Study

Based on the feedback/comments and experiences of the first 4 weeks together with my improved understanding of Delphi studies, I have detailed below what I believe to be a significant improvement in the structure of the Delphi studies. I have separated Aim 1 and 2 purely for readability purposes – in practice there would only be 1 Round 1 that covers both Aim 1 and Aim 2.

Each round would take 2 weeks with 1 week for Experts and 1 week for consolidation thereby still meeting current timeframes. However if we add this process to the initial proposal where we asking for a definition first then obviously the time for each study would lengthen by 4 weeks. The question is…other than showing that the process is necessary as is the current case and as a comparison over the course of the study….is there any additional value in requesting the initial definition?

I believe this (or a similar approach) will be beneficial because it will improve the quality of the final definition and capabilities and improve commitment and motivation for continuing participation in the overall study. I do not think people will continue to participate if they cannot see the value of their input and I think there is a real chance this could happen if we do not respond quickly.

Aim 1 – Level 1 Definitions

Round 1 (or 3 for this study):

Ask for lists (single word or related phrase only) up to 5 things they believe must be
stated in a definition of "factor x". For each of these they should also provide a brief definition if clarity is required.

From here, consolidate a list of such words/phrases, deleting direct commonality and grouping where descriptions are similar but words/phrase are different (max 20).

When deleting, continue to show all descriptions, and when grouping show all original words and descriptions but suggest (or maybe leave blank and ask) a common word/phrase for use. For example:

Proposed Word/Phrase	Provided Word/Phrase	Description
Stakeholder	Customer Government regulator Supplier/vendor, etc	1. 2. 3.
Goals and objectives	Goals Goals and objectives Objectives	1. 2. 3.
Process Improvement	Process Improvement	1. 2.

Round 2

Return the list to individuals requesting that they:

1. rate these based on perceived importance for inclusion in the definition (with a scale provided such as (1) absolutely must stay, (2) either-way and (3) not necessary and
2. where the original word has been grouped - select/nominate the word/term that they feel is most representative or advise if they feel the grouping should not be used.

Round 3

Consolidate on the basis of ratings - show in order of importance (most number of 1's first) but also show how many of each were received e.g.

Responses	Proposed Word/Phrase	Provided Word/Phrase	Description
1 – 8 2 – 5 3 – 1	Stakeholder	Customer Government regulator Supplier/vendor, etc	1. 2. 3.

Return to group suggesting a cut-off point (perhaps when the number 2’s or 3’s are greater than the 1’s). Request further comments regarding cut-off point.

Round 4

Devise a proposed definition and return for rating of satisfaction. If we stick with current process of asking for starting definition we could then compare 1 (initial), 2 (original proposed) and 3 (final proposed) to see the changes.

Aim 2 – Level 2 Capabilities

Round 1

Request list of words/phrases of things about Factor x they want to be able to assess using the proposed maturity model (max 7). Do not link to any work on definitions.

Consolidate list of words/phrases, deleting direct commonality and grouping where descriptions are similar but words/phrase are different (maximum 20). When deleting continue to show all descriptions, and when grouping show all original words and descriptions but suggest (or maybe leave blank and ask) a common word/phrase for use.

Round 2

Return the list to individuals requesting that they:

1. rate these based on perceived importance for inclusion in the model (with a scale provided such as (1) absolutely must stay, (2) either-way and (3) not necessary: and
2. where the original word has been grouped - select/nominate the word/term that they feel is most representative or advise if they feel the grouping should not be used.

Round 3

Consolidate on the basis of ratings - show in order of importance (most number of 1's first) but also show how many of each were received e.g.

Return to group suggesting a cut-off point (the least of ‘7” or ‘when the number 2’s or 3’s are greater than the 1’s’). Request further comments regarding cut-off point.

Round 4

Incorporate additional comments, confirm final list and return for rating of satisfaction of how well the model would meet assessment needs if developed to include these.

13.2.6 Delphi Study Structure Following Pilot Study

Week	Action	Resp.	Timeframe
1	Circulate Round 1 questions: In the context of BPM, how would you define *Factor x*? Detail (up to) 5 elements (single word or phrase) that you consider to be crucial to a BPM definition on *Factor x*? List 7 items under *Factor x* that you would like to be able to assess/measure by applying the proposed model.	TDB EP	W1,D1 (Week 1, Day 1 i.e. Monday) 1 week
2	Consolidate definition elements into list of no more than 10. Consolidate capability items into list of no more than 10. Use tree structure to retain lower level detail which will be useful in providing guidance for level 3 development. Incorporate terminology into consolidation process i.e. glossary development. Link glossary to lists i.e. wording from initial responses in the description. Return both consolidated lists to experts for ranking, use scale of 1 – 3 where 1 = essential, 2 = nice to have, 3 = not required, 4 – belongs in *factor y*. Return glossary to experts for consideration and input.	CT	W2, D1 1 week
3	Circulate Round 2 questions: Rank definition elements using 1 – 4 scale. Provide further comment if required. Rank capability items using 1 – 4 scale. Provide further comment if required. Provide input into glossary development.	TDB EP	W3, D1 1 week
3	Consolidate ranked definition elements based on ratings. Provide to CT for use in developing proposed definition. Consolidate ranked capability items based on ratings. Shorten list using rankings as a guide but with a final list of no more than 7 capability areas. Update glossary based on feedback received.	TDB	W3, w/e

Week	Action	Resp.	Timeframe
4	Develop proposed definition on the basis of initial definitions and ranked definition elements. As a guide, incorporate into proposed definition ranked definition elements that have more 1's than 2's or 3's. Review consolidated capability items. Review combined glossary terms.	CT	W4, D1 1 week
5	Circulate Round 3 questions: Rate proposed definition on the basis of satisfaction and provide comment as required. Rank/weight Capability items on the basis of perceived importance. Provide additional comment as required. Review updated glossary and provide comment.	TDB EP	W5, D1 1 week
5	Consolidate list of capability items based on rank/weighting. Update glossary to incorporate any changes.	TDB	W5, w/e
6	Consider modification to proposed definition in light of ratings and comments received. Determine final definition. Review final list of ranked/weighted capability items. Review changes to glossary.	CT	W6, D1 3 days
6	Circulate Round 4 questions: Rate satisfaction with final definition Rate satisfaction with final list of capability areas	TDB EP	W6, D4 2 days
7	Summarise findings for feedback to group	TDB	

Key

EP Expert Panel

CT Codification Team (i.e. Coder A, Coder B and Tonia)

TDB Tonia de Bruin

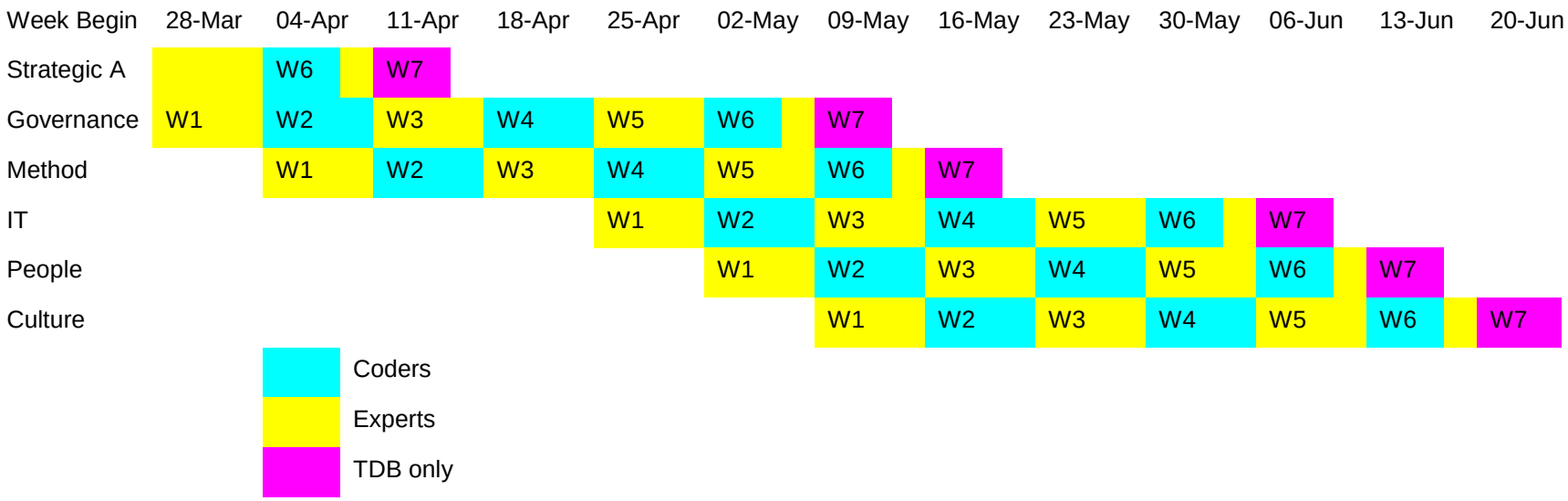
Notes

To avoid unnecessary duplication of effort within the codification team, when tasks involve consolidation of lists following the rating/weighting/ranking by the expert panel this will be undertaken only by TDB. The resultant consolidated list

will then by reviewed (for accuracy and completeness) by the remaining codification team members prior to returning to Expert Panel. This will not impact on the *initial* consolidation of lists into common areas which will continue to be undertaken by each codification team member independently prior to reaching consensus within the team and subsequent return of lists to expert panel for rating/weighting/ranking.

Development of the glossary will be an on-going process through all studies. In the final "summary" study all defined terms will be revisited to ensure consistency and relevance of terms.

Factor	Start	Finish
Strategic Alignment	21st February 2005	17th April 2005
Governance	28th March 2005	11th May 2005
Method	4th April 2005	18th May 2005
Information Technology	25th April 2005	8th June 2005
People	02nd May 2005	15th June 2005
Culture	9th May 2005	22nd June 2005


Week Begin
28-Mar
04-Apr
11-Apr
18-Apr
25-Apr
02-May
09-May
16-May
23-May
30-May
06-Jun
13-Jun
20-Jun
Strategic A
W6
W7
Governance
W1
W2
W3
W4
W5
W6
W7
Method
W1
W2
W3
W4
W5
W6
W7
IT
W1
W2
W3
W4
W5
W6
W7
People
W1
W2
W3
W4
W5
W6
W7
Culture
W1
W2
W3
W4
W5
W6
W7
Coders
Experts
TDB only

13.2.7 Email to Panel Member for Round

Dear

Welcome to **Round 2** of the Business Process Management – Governance Delphi study.

In Round 1 you were asked to provide a definition of 'Governance in the context of business process management' and to identify ‘up to 7 major items’ you would like to be able to assess by applying the new BPM Maturity model. Responses have been received from 18 experts.

Based on this feedback the following consolidated definition is proposed:

In the context of BPM, Governance establishes accountability, decision-making and reward structures to manage compliance with relevant standards and controls and monitor the degree to which enterprise processes achieve required business performance.

And the proposed list of Capability Areas (in no particular order) is:

Roles and Responsibilities

Decision Making Structures

Standards

Controls

Metrics

Process Architecture

If you require additional detail relating to the Capability Areas, it is provided in the attached document.

Round 2 Questions

Please rate your satisfaction with the **proposed definition** using a 10 point scale (1 – not satisfied to 10 – very satisfied). Please provide any additional comment/s as required.

Please rate your satisfaction with the **proposed list of Capability Areas** using a 10 point scale with 1 (not satisfied) and 10 (very satisfied). Please provide any additional comment/s as required.

Note: you will be asked to weight the final list of Capability Areas based on perceived importance in a following round.

Please respond to Round 2 questions either via email or within the attached document by Friday 22nd April, 2005.

Best regards

Tonia

13.2.8 Follow-up Emails Sent to Participants

Dear

A reminder that your response to **People** Round 1 questions (as shown below) are due by **Monday 18th April 2005**.

To maintain your place in the Delphi study, please forward your response by this time.

Best regards

Tonia

Dear

The Codification Team will commence analysis of **Round 2** responses on **Monday**.

Please forward your response to ensure it is included in the analysis process.

Best regards

Tonia

13.2.9 Summary of Responses from Delphi Study Round

Round 1 - Question 1

In the context of BPM, how do you define Strategic Alignment?

Participant No	Response
1	In the context of BPM, strategic alignment requires that the firm's leadership team work in a deliberate and collaborative way to define the firm's major cross-functional business processes and then by looking at the business from the 'outside-in' or customer's point of view, measure the firm's current performance, desired performance and the size of the gap in providing products and services to customers via these large cross-functional business processes, and thereby determine what level of performance improvement in business process terms is needed in order to achieve strategic objectives. This thought process will lead to the creation of a one-page business process relationship map or schematic and the development of a business process management plan which specifies who will need to work collaboratively to assure which business processes need to be improved by how much, by when to achieve the firm's strategic objectives.
2	Strategic alignment is a *dynamic capability* that allows a firm: to sense predictable as well as unpredictable events in customer demands, markets, technology, and government regulations, to interpret these events in the light of the firm's interests, and to respond consequentially by adjusting or innovating its network of business processes.
3	The identification and management of cause and effect relationships between business processes and critical business issues showing the impact of BPM on the execution of enterprise strategy.
4	A BPM solution must integrate and coordinate specific company assets (human capital, partners, customers, information, technology and applications) to realize specific goals that are aligned strategically with the expectations and desires of the stakeholders (customers, shareholders and financial entities). The solution must be able to leverage these assets to move the organization forward towards it's goals yet flexible to allow for changing market and financial conditions.
5	Strategic alignment in a BPM context is ensuring that the processes the organization is attempting to improve, and its improvement objectives for those processes, are consistent with the strategy of the organization.

Participant No	Response
6	For strategic alignment, an organization should have: • Identification of mega-processes, the scope of process management • A plan for improvement of each mega-process • A sourcing strategy (principles for what processes will be done in-house vs. contracted) • Line-of-sight to customers (how processes impact customers) • Strategy as an input to process designs and vice versa • Process measurement linkage to business scorecard • Operating strategy (customer value proposition) and operating model (translation into processes, organization, measures, culture) • Clarity on common vs. unique processes • Existence and quality of sensing processes • Supplier and customer management and linkage
7	BPM does not define strategy. BPM supports the effective achievement of organizational strategy. Specifically, through the effective management of core and support processes, an organization will be able to obtain competitive advantage.
8	Strategic Alignment in BPM is characterized by the existence of enterprise business processes (enterprise business processes are those that span the organization and have no leading or trailing processes) whose output is tightly linked to customer outcomes (defined from the customer view) that have been identified as core to the operation of the business. The measure of Strategic Alignment assesses the degree of completeness in an organization against this definition, the extent to which this has been applied within the organization, and the relative emphasis against other corporate goals and activities.
9	Strategic Alignment of Business Process Management means to consider relevant strategies in the (re)design of business processes as well as to (re-)evaluate an organisation's strategies in terms of its business process capabilities.
10	Strategic objectives define process performance measures and their targets, and the measures are actively followed to see if they comply. Strategy is the single most important input when deciding about process improvement activities.
11	In the context of BPM, Strategic Alignment is the ongoing adjustment of work to the strategic priorities of the organization – “work” being defined here as the execution of ‘live’ business processes, encompassing the primary elements of execution, i.e. people and systems, together with the culture and politics that surround them. Note: When “strategic priorities” change BPM needs to be adaptive

Participant No	Response
	enough to support such a change. Those people managing business processes must have an intimate knowledge of the company strategy and how BPM supports it, recognizing how a change in strategy needs to be reflected in changes to business processes.
12	First, aligning the priorities and performance indicators of the business process portfolio to strategic goals, and second, informing the strategic goal setting process with business process performance, trending, and capability information drawn from the process portfolio.
13	Alignment means applying IT in an appropriate and timely way, in harmony with business strategies, goals, and needs. It is synonymous with terms such as integration, cohesion, fusion, fit, match, and linked.
14	Strategic Alignment for me represents the quality of the mapping between corporate goals (the business strategy), and its operative system in terms of the operating processes and the supporting organization. There should be a clear link between process goals and strategic goals, so that metrics that describe the effects of BPM activities (i.e. the attainment of process goals) can be rolled up and evaluated in terms of goal achievement at the strategic level. Goals lead to design, which in turn is being managed. How closely these three are linked determines the quality of the strategic alignment of a given area/organization.

13.2.10 Coding From Delphi Study Round

Key Issues Identified (my thoughts only)

No	Issue	Descriptors
1	Processes	Define/manage/identify/scope/design/execute major/critical/enterprise/mega and support/sensing/live processes
2	Improvement	Current performance/desired performance/gap/level of improvement required/adjusting or innovating/improvement objectives for processes/plan for improvement/measurement/degree of completeness/define process performance measures and targets/on-going adjustment
3	Relationships	Network of processes/cause and effect relationships/process relationship map/operating model
4	Strategic goals and objectives/priorities	Meeting goals and objectives/consistent with strategy/achieve strategic objectives/respond consequentially/firms interests/execution of enterprise strategy/strategic goals that are aligned strategically/achievement of organizational strategy/strategic priorities/aligning priorities and performance indicators of business processes/competitive advantage
5	Stakeholders	Expectations and desires of stakeholders (customers, shareholders and financial entities)/customer's point of view/customer demands, markets, technology and government regs/line of sight to customer/supplier and customer management linkage/customer value proposition/tightly linked to customer outcomes
6	Continuous	Flexible/dynamic capability/predictable and unpredictable/ongoing adjustment/adaptive enough
7	Two-way	Processes input to strategy/strategy determines process improvements/ BPM supports company strategy/ change in strategy reflected in change in business processes/informing strategic goal setting process with business process performance, trending and capability information from process portfolio/(re-)evaluate strategies in terms of business process capabilities
8	Resources	Who, which, how much, by when/ integrate and coordinate specific company assets (human capital, partners, customers, information, technology and applications)/leverage assets/sourcing strategy/primary elements of execution, i.e. people and systems, together

		with the culture and politics that surround them/those people managing processes/leadership team

Proposed Consolidated Definition (Researcher's thoughts only)

Strategic alignment of business process management is a cycle whereby process capability enables achievement of strategic goals and strategic priority drives improvement in process capability. Alignment is achieved by mapping relationships between processes, stakeholders and organisational priorities and continuously identifying, executing and improving processes and process resources to best meet strategic priorities.

13.2.11 Round Report to Panel: Completed by Expert

Delphi Study - Round 3

Section 1 details the revised definition.

Section 2 provides the revised list of Capability Areas.

For Round 3 you are required to:

Rate your satisfaction with the revised definition using a 10 point scale (1 – not satisfied to 10 – very satisfied). Please provide any additional comments.

Rate your satisfaction with the revised Capability Areas using a 10 point scale (1 – not satisfied to 10 – very satisfied). Please provide any additional comments.

Rate the Capability Areas on the basis of perceived importance by allocating a total of 10 points between them. Please provide any additional comments.

Definition

The aim of the study is to produce the best possible definition and to have definition ratings from all participants (where possible) greater than 4. As a result, the proposed definition has been revised to incorporate valuable feedback provided by the Panel. A summary of results from Round 2 is provided below.

Initial Proposed Definition

In the context of BPM, Governance establishes accountability, decision-making and reward structures to manage compliance with relevant standards and controls and monitor the degree to which enterprise processes achieve required business performance.

Round 2 Satisfaction Ratings Received from Expert Panel

Rating	0	1	2	3	4	5	6	7	8	9	10	**Total**
Count	0	0	0	1	0	2	1	2	4	2	1	**13**

Average: 7.154 **Standard Deviation:** 1.951

Summary of Round 2 Comments Received from Expert Panel

- It's too long.
- I don't like the abbreviation BPM.
- This is a very rationalistic view mainly focused on productivity and control. In business process management, it is essential to also: "effectively sensing and responding to changes in customer and market demands".
- Good definition. "Relevant standards and controls" is a bit vague, because compliance with predefined process structures should probably be included as well.
- I am becoming increasingly concerned with the way in which definitions are being phrased in this study. As I read the definitions I get a sense of something that is rigid, structured and inflexible. I am concerned that we are losing sight of the fact that processes are how work gets done. Where are purpose, passion and people?
- Maybe "achieve required" should be simply "support".
- I would prefer if we could explicitly include the word 'process' in order to capture governance processes, e.g. it could be inserted after 'decision making'.
- I would prefer to delete "to manage compliance with relevant standards" what if we do not have such standards? If a standard (e.g. Sarbanes-Oxley) matters, it will impact the design of accountability and decision-making processes, but there is no need to make this an explicit part of the definition.

- Monitoring of process performance should be part of governance to the extent that this is about defining how to monitor, not what to monitor (which should be part of strategic alignment).
- Great.
- Apart from complex phrasing: coherence and transparency are words that come to mind as preconditions for governance.
- The definition is too academic. It doesn't mention the use of power (formal and informal) to support the process perspective vs. other axes. It also doesn't link BPM governance to BP improvement, a vital linkage. BP governance is also a set of decision principles that helps an org optimize its process performance i.e. decision rights for processes.

Revised Definition

In the context of business process management, Governance establishes coherent and transparent accountability, decision-making and reward processes to guide actions and optimize business performance.

Please provide a rating of the proposed definition (1 – not satisfied to 10 – very satisfied) together with any additional comment/s.

Rating:	9
Additional Comment/s:	Replace 'optimize' with 'improve'

Capability Areas

The aim of the study is to produce the best possible list of Capability Areas and have ratings from all participants (where possible) greater than 4. A summary of results from Round 2 is provided below.

Round 2 Satisfaction Ratings Received from Expert Panel

Rating	0	1	2	3	4	5	6	7	8	9	10	Total
Count	0	0	1	0	0	0	2	2	6	2	0	13

Average: 7.231 **Standard Deviation:** 1.833

Summary of Round 2 Comments Received from Expert Panel

- I'd combine "standards" and "controls".
- I'd add a capability about the trade-off between process and function, geography, product/market.
- This list is missing out on one of the most important governance mechanisms: values and culture. Also, there is no emphasis on the capability to effectively communicate and change values as part of adapting to change.
- Good set.
- Roles and responsibilities

Important that the role of any "governance body" is clear and the roles and responsibilities within those bodies are clear – accountability of these roles is also important.
Looks good.

- Decision Making Structures

I like the inclusion of "speed of decision making" as being significant.
Instead of structures: processes, structure sounds too static and sounds more like accountability.

- Standards

I think the term "strategies" should be replaced with "principles" when talking about Standards in order to distinguish this factor from Strategic Alignment.
OK but the word "standards" might be too wide, too fuzzy.

- Delete Process Architecture – it is part of Strategic Alignment.
- The details need clarification: what are good/best practices? I would also

prefer a shorter description. Both of these can be further defined in the 3rd level (definitions of levels 1– 5).

- It has no mention of resources, $ and people which is what power and governance produces.

Please rate the revised list of "Capability Areas" in two ways.

Please rate your satisfaction with the revised list of Capability Areas (1 – not satisfied to 10 – very satisfied) together with any additional comment/s.

Rating:	9
Additional Comment/s:	

You have a total of 10 points. Please allocate these 10 points to the Capability Areas based on perceived importance.

Capability Area	Additional Detail	Points Allocated	Comments
Roles and Responsibilities	a) Examples: Process sponsor, process owner, business owner, chief process officer, process leaders, process councils, process steering groups, process governance board b) Clearly defined and documented roles c) Identification of only 1 process owner per Enterprise Process d) Delineation of local & global performer roles e) Incorporation of authority-to-change and accountability f) Degree to which process roles and responsibilities are recognized and accepted	4	Add: business process analysts
Decision Making Processes	a) Existence of clearly defined and documented processes for decision making in both anticipated and unanticipated circumstances b) Speed of decision making c) Ability to influence resource allocation d) Formal and informal power influences e) Authority to instigate and communicate process change f) Ability to influence organizational reaction to process change	4	Add to a) “communicated and continuously reviewed”
Standards	a) Well defined process management principles b) Review cycle to maintain quality of process management principles c) Co-ordination of process management initiatives throughout the organization d) Guidelines for the establishment and management of: • Linking strategic & enterprise process priorities • Measures and metrics • Issue Resolution & decision making • Process change management, risk and	1	a-b (and some elements of d) can go into 2 c can go into 1 first bullet point of d) belongs to strategic alignment second bullet point: metrics are defined in strat. Alignment, in governance we

Capability Area	Additional Detail	Points Allocated	Comments
	communication of same • Relevant reward and remuneration structures • Allocation of resources • Process Reporting • Accountability Monitoring • Process Communication e) Degree to which standards are deployed f) Degree to which standards are complied with g) Degree to which standards support authority vs. constrict it		make sure that metrics are collected and evaluated we also have allocation of resources under 1)
Metrics & Performance Linkage	a) Existence and use of clearly defined and documented processes to monitor and measure: • Reward and remuneration • Enterprise process outcomes • Process Change initiatives b) Existence and use of clearly defined and documented processes to link: • Enterprise process outcomes – business goals/strategic priorities • Reward and remuneration – enterprise process outcomes & business performance • Process Change initiatives – business goals/strategic priorities c) Existence and use of clearly defined and documented Process Architecture d) Comparison of Actual vs. Planned e) Undertake and maintain review cycle	1	

13.2.12 Strategic Alignment Delphi Study

The first study conducted in March 2005 was that of Strategic Alignment. The study included four rounds. This study acted as a pilot study for the remaining studies[119]. Table 132 provides a summary of demographics for those experts that completed all rounds of the Strategic Alignment study.

Category / Region	Industry	Academia
USA	5	5
Australia	2	1
Europe	2	-
Category Total	*9*	*6*

Table 132: Strategic Alignment Expert Panel

Definition

The definition proposed for rating during the final round of the study was:

> *In the context of process management,* ***Strategic Alignment*** *is the tight linkage of organizational priorities and enterprise processes enabling continual and effective response to achieving business goals.*

The proposed definition had an average score of 8.1 (with 10 being the highest level of satisfaction). Figure 60 reflects a summary of final ratings.

[119] As such, the content and presentation of data is slightly different to the remaining five studies.

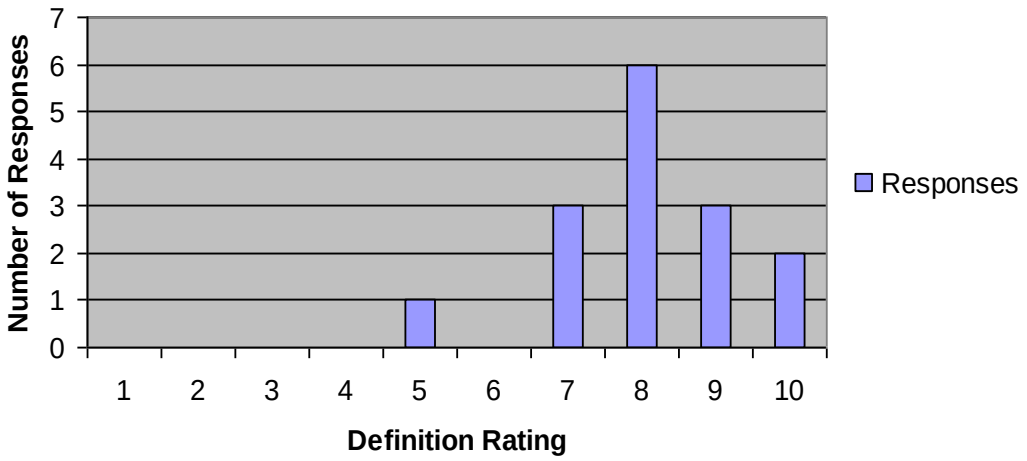


Figure 60: Strategic Alignment Definition – Responses per Rating

Figure 61 reflects the change in the average and standard deviation of ratings over the three rating rounds of the Delphi study.

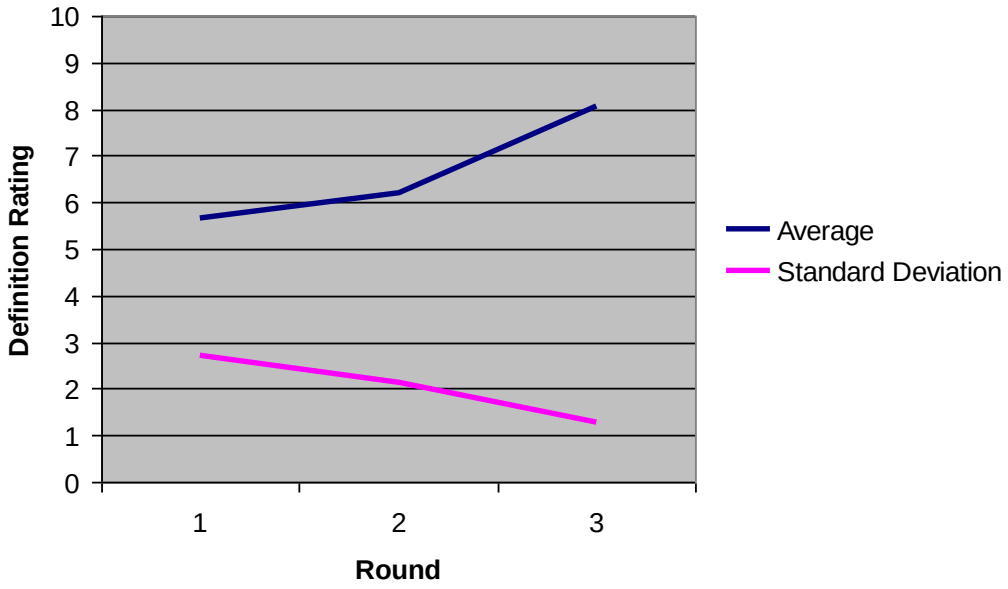


Figure 61: Strategic Alignment Definition – Average & Standard Deviation

Final Round Comments

A number of Participants highlighted areas where they believed further improvements in final proposed definition were possible. Comments mostly related to the proactive nature of process management and included:

Highlight "proactive" approach…(3)[120]

"response to achieving goals" sounds awkward, is there a better way to phrase it? You don't respond to achieving a goal (because by then it is too late), you respond to the progress made in the pursuit of a goal…. (10)

I'd change the word 'enabling' to 'driving' to enhance the view that process based management is a proactive activity. (13)

I am not convinced that the term 'response' is well chosen. It gives BPM a reactive flavour. Alternatives would be "is the tight, effective and continuous linkage of" and delete everything from "processes" or to replace response with "achievement of business goals". (14)

Final Definition of Strategic Alignment

Based on these comments the final definition arising from the Delphi study is:

> *In the context of process management,* ***Strategic Alignment*** *is the continual tight linkage of organizational priorities and enterprise processes enabling achievement of business goals*[121]*.*

Major Discussion Areas

The major discussion points during the development of the Strategic Alignment definition included:

End-to-end Processes

There was a range of words/phrases used to describe the scope of processes to which the definition referred including: end-to-end, enterprise-wide, mega, core, enterprise business, operating, cross-functional business, critical business and

[120] The (number) indicates the identifier assigned to the participant by the researcher to ensure anonymity during the Delphi studies. Identifiers were unique and given to only one participant during the entire series. Furthermore, each participant had only one identifier assigned irrespective of the number of participating studies.

[121] The Panel did not re-rate changes to definitions and capability areas made following final round comments.

business.

An earlier iteration of the definition included the use of “end-to-end” processes. This generated a number of comments from Participants including:

End-to-end is simply no good – not the definition but the term. It is cumbersome while lacking the clarity that it is a TERM. (7)

Great except for end-to-end! (15)

The term “enterprise processes” replaced “end-to-end”.

Inclusion of People

A number of initial definitions and comments included reference to people, such as:

….is senior management making the tight link between…(4)

….requires that the firm’s leadership team work in a way ….. (11)

….those people managing business process must have…(12)

Strategic Alignment deals with ‘linkage’ and ‘enabling’. ‘Who’ is responsible for this is included in the Governance factor that includes Process Roles and Responsibilities.

Other ‘people’ comments included:

….line of sight to customers (how processes impact customers…(5)

….aligned strategically with the expectations and desires of stakeholders (customers, shareholders and financial entities)…(6)

….whose output is tightly linked to customer outcomes …(7)

….gap in providing products and services to customers …..(11)

With regard to these comments, an early definition attempted to capture these points by referring to “relationships between stakeholders, processes and

resources". Comments received however indicated that this was not a popular inclusion:

…I'm unclear with…adjusting relationships between stakeholders.... (1)

…don't believe adjusting relationships between stakeholders belongs… (5)

…Why do we not have people in the definition? (7)

…the term stakeholders does not have a clear definition (10)

…Whatever happened to the 'customer' in all of this? Why use the fuzzy term 'stakeholders'. (11)

Subsequent use of "enabling…..achievement of business goals" resulted in comments of:

…Doesn't address for me the reasons businesses are in business – financial stakeholders. (6)

Such discussions highlighted the benefit of considering sub-constructs concurrently with the definitions and led to a change in the structure of the remaining Delphi studies.

Continual or Continuous?

Many of the initial definitions suggested by the Participants, or comments made regarding definitions proposed in subsequent rounds, included the words "continual" and/or "continuous". The intent was to highlight that strategic alignment was not something that happened on an irregular or ad hoc basis but rather that it was an on-going, every day practice. Consideration of both words and in particular comment taken from the Australian Oxford Mini Dictionary, Second Edition (p. 107):

> ***"Usage:** Continual is often confused with continuous. Continual is used of something that happens very frequently (e.g. there were continual interruptions) while continuous is used of something that happens without a pause (e.g. continuous rain all day)."*

On this basis, for the purposes of the definition, ‘continual’ was considered to be more appropriate than ‘continuous’.

Sensing of the Environment

Inclusion of the concept of ‘continuously sensing the environment’ in an earlier version of the proposed definition caused some concern among participants.

First sentence is not bad. Second needs a lot of work…. (11)

I'm a little uneasy about the second sentence as it might imply that BPM/SA is the same as strategy development/planning. BPM/SA is about strategy execution and not about strategy creation. (13)

However, exclusion of the concept from the final proposed definition was not entirely popular:

…it is not okay that you leave out the continuous sensing of the environment ….allows for traditional internal alignment of business processes and goals without inclusion of environmental sense and respond cycles. That is contrary to the very idea of business process management". (9)

Such a phrase is more appropriate in a definition of process management rather than in the factor definitions that are *in the context of process management*.

Capability Areas

Seven capability areas were on the final proposed list arising from the Strategic Alignment study including:

- Enterprise Processes
- Strategic Priorities
- Linkage of Strategy and Process Capability
- Process Improvement/Innovation/Change
- Operational Translation
- Process Output Measurement
- Extended Value Chain

Participants allocated a total of 10 points amongst the capability areas based on perceived importance. Figure 3 reflects the average and standard deviation of final ratings for the top five Capability Areas.

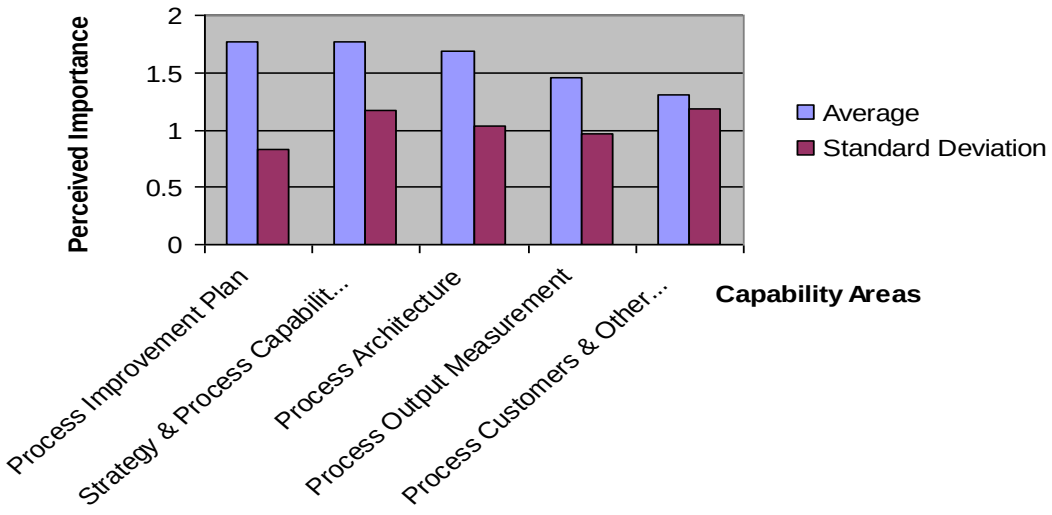


Figure 62: Strategic Alignment Capability Areas – Average & Std Dev

Modified Capability Areas following Final Round

Based on final round comments, the proposed list of capability areas incurred a number of minor changes. Table 133 shows these modifications.

Proposed	Revised
Process Improvement/Innovation/Change	Process Improvement Plan
Linkage of Strategy and Process Capability	Strategy and Process Capability Linkage
Enterprise Processes	Process Architecture
Extended Value Chain	Process Customers & Stakeholders
Strategic Priorities	Removed > 3 ratings of 0
Operational Translation	Removed > 3 ratings of 0

Table 133: Strategic Alignment Capability Area Modifications

The final list of capability areas is therefore:

- Process Improvement Plan
- Strategy and Process Capability Linkage
- Process Architecture
- Process Output Measurement
- Process Customers and Stakeholders

13.2.13 Governance Delphi Study

The Governance study included three rounds. Table 134 provides a summary of demographics for experts that completed all rounds of the Governance study.

Category / Region	Industry	Academia
USA	3	4
Australia	2	1
Europe	1	-
Category Total	*6*	*5*

Table 134: Governance Expert Panel

Definition

The definition proposed for rating during the final round of the study was:

> *In the context of process management,* ***Governance*** *establishes coherent and transparent accountability, decision-making and reward processes to guide actions and optimize business performance.*

Figure 63 shows the final ratings for the proposed definition and Figure 64 shows the change in the average and standard deviation of ratings over the three rounds of the Delphi Study.

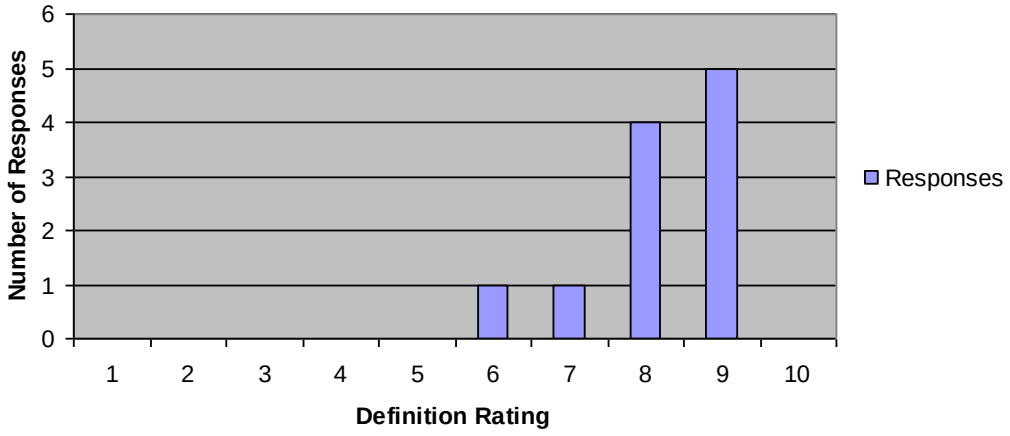


Figure 63: Governance Definition – Responses per Rating

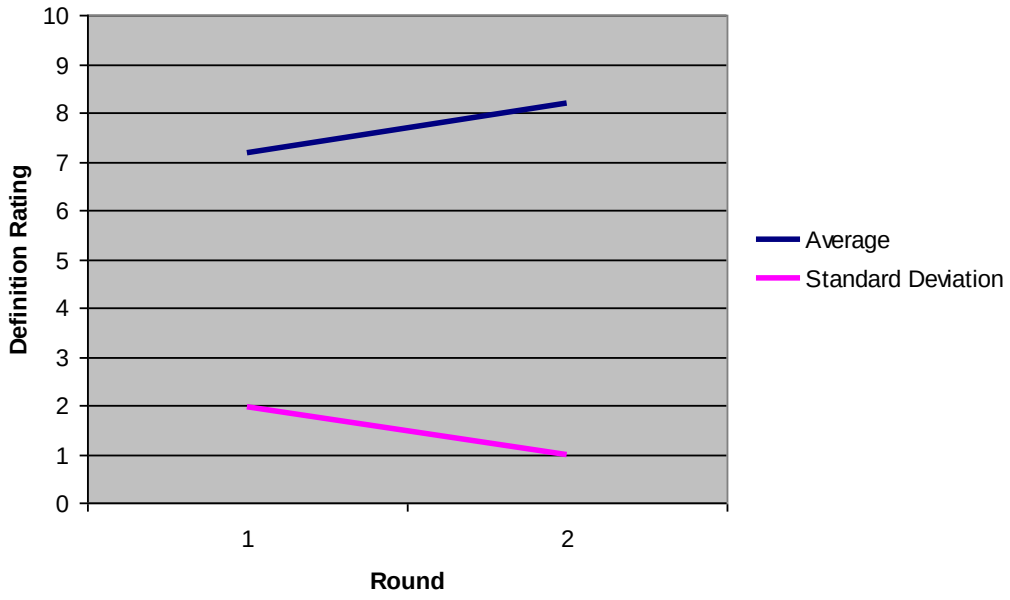


Figure 64: Governance Definition – Average & Standard Deviation

Major Discussion Areas

The major discussion points during the development of the Governance definition included:

Rationalistic and Rigid wording

The wording used in definitions was of some concern:

…this is a very rationalistic view…In business process management, it is essential to also: "effectively sensing and responding to changes in customer and market demands". (9)

…increasingly concerned with the way in which definitions are being phrased in this study. As I read the definitions, I get a sense of something that is rigid, structured and inflexible. I am concerned that we are losing sight of the fact that processes are how work gets done. Where are purpose, passion and people? (11)

The definition is too academic. It doesn't mention the use of power (formal or informal) to support the process perspective vs. other axes. It also doesn't link BP governance to BP improvement, a vital linkage. BP governance is also a set

of decision principles that helps an organisation optimize its process performance i.e. decision rights for processes (22)

These comments are not dissimilar to those made during the Strategic Alignment study where there was concern over the use of the word "response" and the need to capture the "here and now" focus of process management. The identification and definition of six independent factors leads to an element of rigidity as "independence" is sort with each definition. Furthermore, each factor definition is "In the context of process management". As such, a definition of Process Management would incorporate global aspects such as *improving business performance* and *proactive action in continuously changing environments and demands*.

Final Definition Comments

A number of the expert panel highlighted areas to improve upon the final proposed definition. These included:

"optimize"

I definitely don't like 'optimize'. Please consider 'improve'. The other suggests a far too rational view. (9)

Replace 'optimize' with 'improve'. (14)

"coherent"

Not sure if I like the word "coherent" as it is used in the definition. I would be with "appropriate" or "relevant" instead. I also liked the phrase "standards and controls" in the previous version… (3)

"reward processes"

I don't like the term "reward processes". It is confusing. You might like to consider using "aligned rewards" instead. (11)

Modified Definition following Final Comments

Based on final comments provided by the expert panel the final definition is:

> *In the context of process management,* ***Governance*** *establishes relevant and transparent decision-making to align and guide accountabilities, actions and rewards.*

Capability Areas

The final proposed list of capability areas provided to the expert panel for rating and comment was:

- Roles and Responsibilities
- Decision Making Structures
- Standards
- Metrics and Performance Linkage

Figure 65 reflects a summary of final ratings and Figure 66 shows the change in the average and standard deviation of ratings over the three Delphi study rounds.

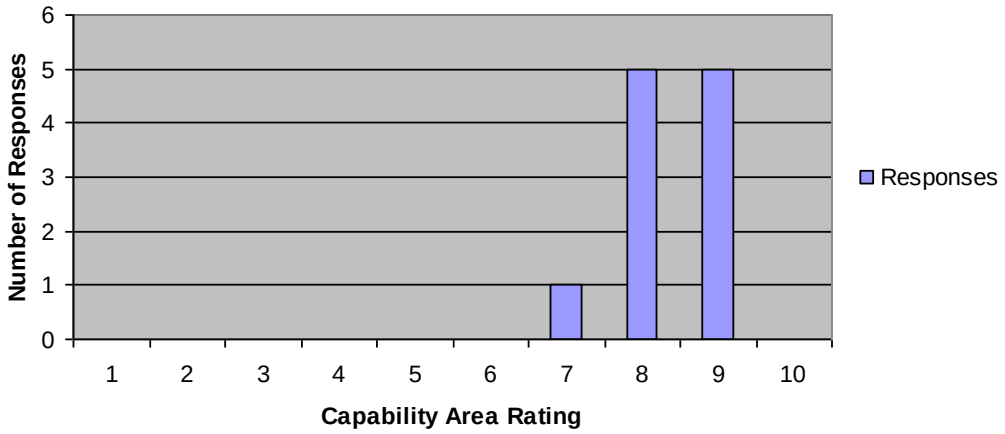


Figure 65: Governance Capability Areas – Rating per Response

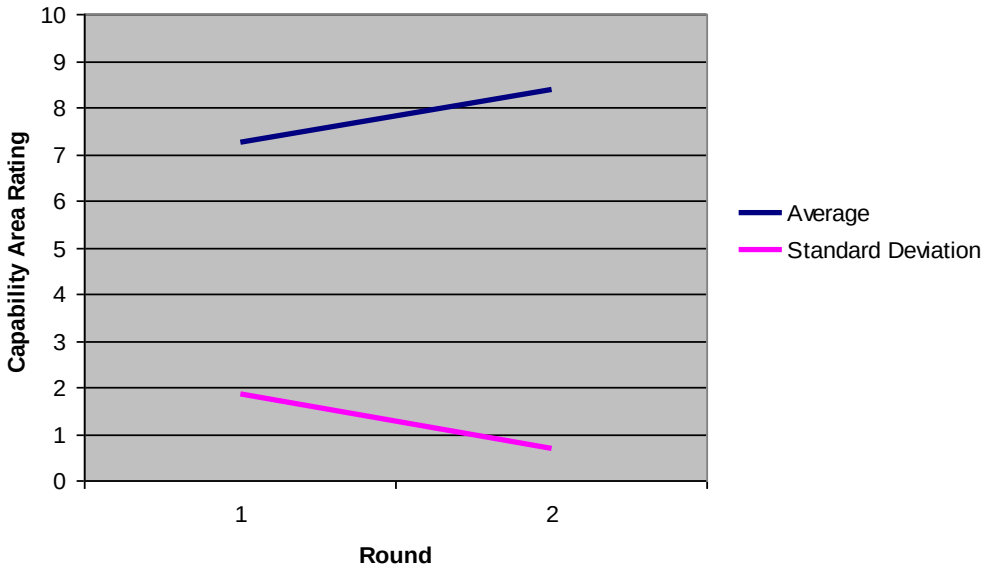


Figure 66: Governance Capability Areas – Average & Standard Deviation

Perceived Importance

Participants allocated a total of 10 points amongst the capability areas based on perceived importance. Figure 67 reflects the average and standard deviation of final ratings.

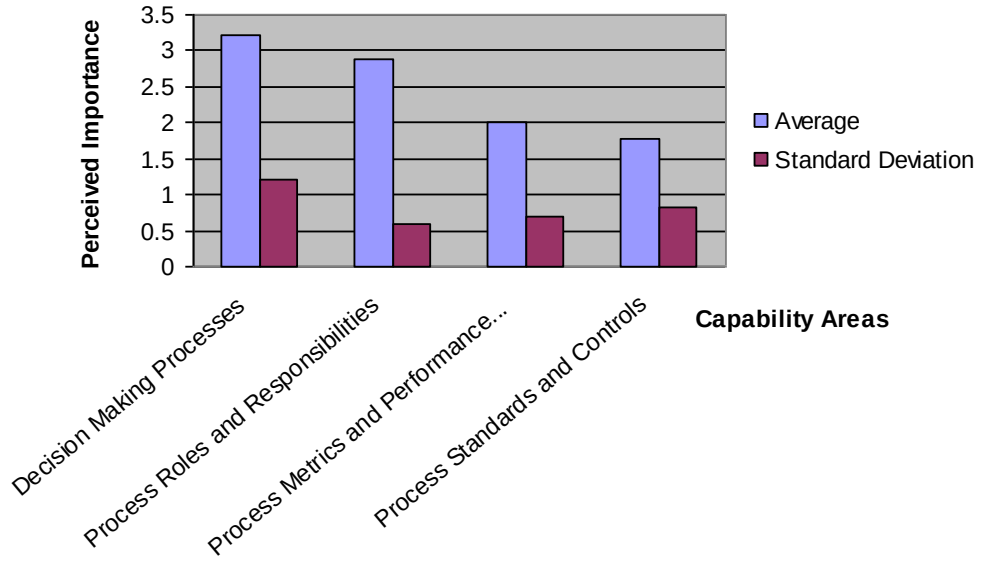


Figure 67: Governance Capability Areas – Perceived Importance

Final Capability Area Comments

A number of the expert panel highlighted improvements to the final proposed list of capability areas including:

…I would add back in "controls" (3)

…metrics are defined in Strategic Alignment, in Governance we make sure that metrics are collected and evaluated... (14)

…we should look at how the capability areas link… (15)

Modified Capability Areas following Final Comments

Based on final comments a number of minor changes occurred in the proposed list of capability areas. Table 135 shows all such modifications.

Proposed	Revised
Decision Making Structures	**Process Management** Decision Making
Roles and Responsibilities	**Process** Roles and Responsibilities
Metrics and Performance Linkage	**Process** Metrics and Performance Linkage
Standards	Process Standards and Process Controls

Table 135: Governance Capability Area Modifications

The final list of capability areas[122] is:

- Process Management Decision Making
- Process Roles and Responsibilities
- Process Metrics and Performance Linkage
- Process Management Standards
- Process Management Controls

[122] The expert panel did not re-rate minor changes arising from the final round.

13.2.14 Methods Delphi Study

The Methods study included four rounds. Table 136 provides a summary of demographics for those experts that completed all rounds of the Methods study.

Category / Region	Industry	Academia
USA	3	4
Australia	2	1
Europe	1	1
Category Total	***6***	***6***

Table 136: Methods Expert Panel

Definition

The final definition proposed for rating by the expert panel was:

> *In the context of process management,* ***Methods*** *are the structured approaches and techniques that support process-related activities to improve business performance.*

Figure 68 shows a summary of final ratings and Figure 69 shows the change in the average and standard deviation of ratings over the four rounds of the Delphi study.

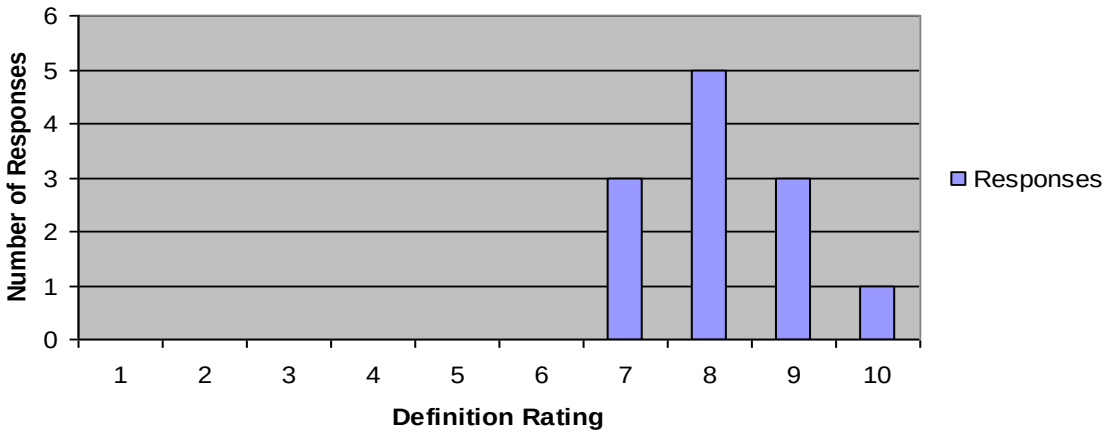


Figure 68: Methods Definition – Responses per Rating

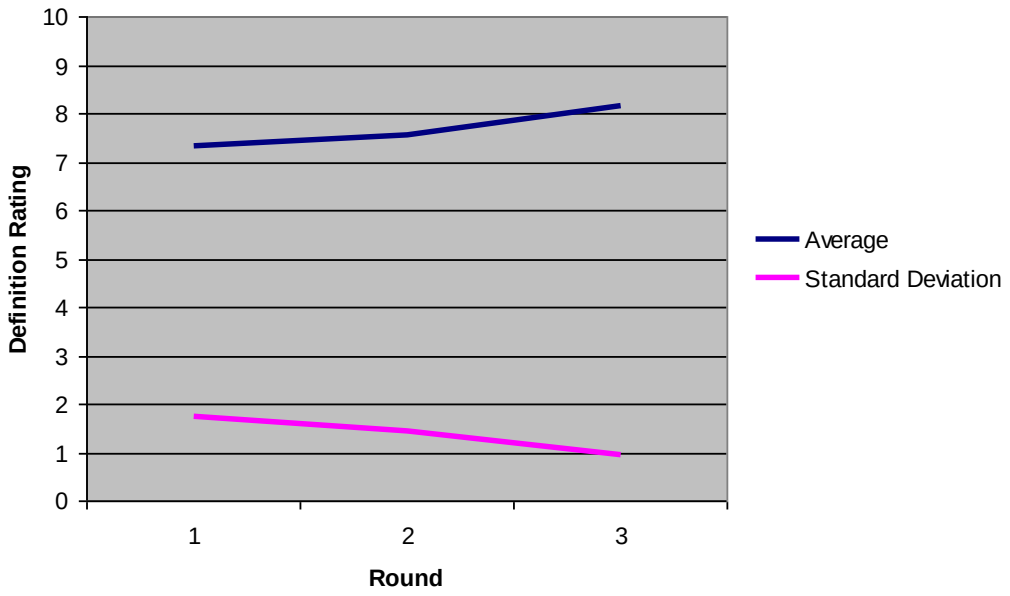


Figure 69: Methods Definition – Average and Standard Deviation

Major Discussion Areas

The major discussion points during the development of the Methods definition included:

Methodologies, Practices, Approaches, Techniques?

The terminology used in the definition generated a significant level of discussion:

…not completely happy with the phrase "approaches and practices" (1)

Methodologies is almost redundant with "methods" so I think we should leave it out (5)

Methods are techniques, practices, methodologies that are applied by… (10)

…"approaches" and "practices" seem similar…don't mention "tools and techniques" which are different. (5)

…techniques, methodologies and practices" is rather imprecise "provides systematic approaches…" is simpler". (9)

…methods are different from practices. They are used to support or enable certain practices. (9)

The outcome following consideration of these comments was the inclusion of "approaches and techniques" to reflect the ways in which actions and ideas are combined and utilised to support process activities.

Use of "through process lifecycle stages"

Discussion also occurred around the use of "process lifecycle stages":

…I don't think we need the phrase "in all process lifecycle stages". (5)

…Methods do not necessarily support all stages: methods are partial in nature. (9)

…Methods don't apply to just management but also the discovery, design, development, implementation and analysis of… (10)

…I prefer "specify and enable consistent actions…in all process lifecycle stages". (14)

Use of "tools"

Some were of the view that "tools" should be included:

…need to add tools (5)

Whereas others felt that "tools" should be in Information Technology:

…remove tools as it is part of IT (14)

Final Definitions Comments

A number of the expert panel highlighted areas for improving the final proposed definition including:

"improve business performance"

Do the activities necessarily need to improve business process performance?

What if they only monitor or model "as-is"? (5)

Performance is not the only goal, think about compliance. You may want to have methods that ensure compliance…we can just drop the "to improve business performance". (10)

It may be useful to state "improve and manage" instead of only "improve". (11)

I doubt that we need "to improve business performance". We could otherwise have this in every definition. (14)

"process-related activities"

…"process-related activities" is a little vague. If we could be more specific with that phrase this would be a solid definition. (3)

…"process-related activities" is too fuzzy. Personally I prefer, "specific and enable consistent actions, behaviours and outcomes in all process lifecycle stages". (14)

"structured"

Do we need the word "structured"? I think an unstructured technique or approach could qualify as a method. (5)

Modified Definition following Final Comments

Based on final comments provided by the expert panel the final definition is:

> *In the context of process management,* ***Methods*** *are the approaches and techniques that support and enable consistent process actions and outcomes.*

Capability Areas

The final proposed list of capability areas provided to the expert panel for rating and comment was:

- Process Design and Modelling

- Process Implementation and Execution
- Process Control and Measurement
- Process Improvement and Innovation
- Process Project and Program Management

Figure 70 shows a summary of final ratings and Figure 71 shows the change in the average and standard deviation of ratings over the four rounds of the Delphi study.

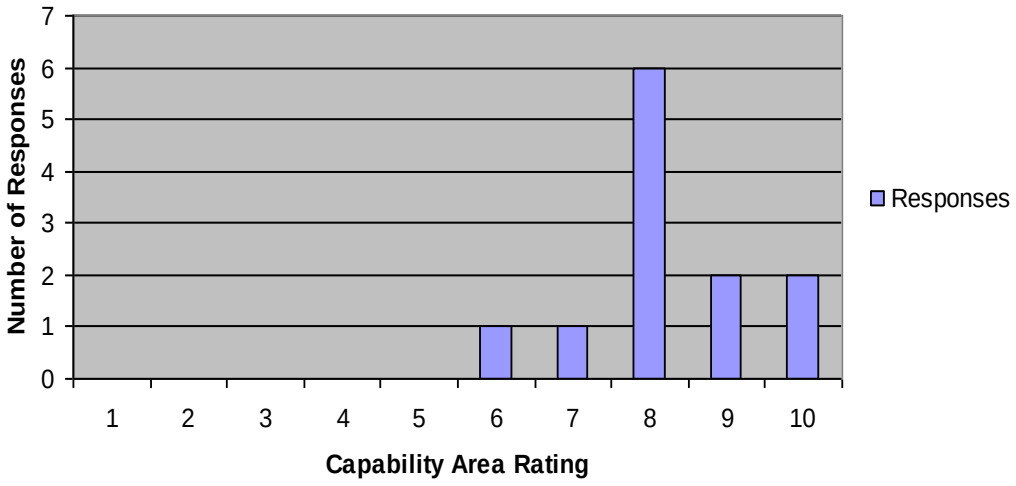


Figure 70: Methods Capability Areas – Responses per Rating

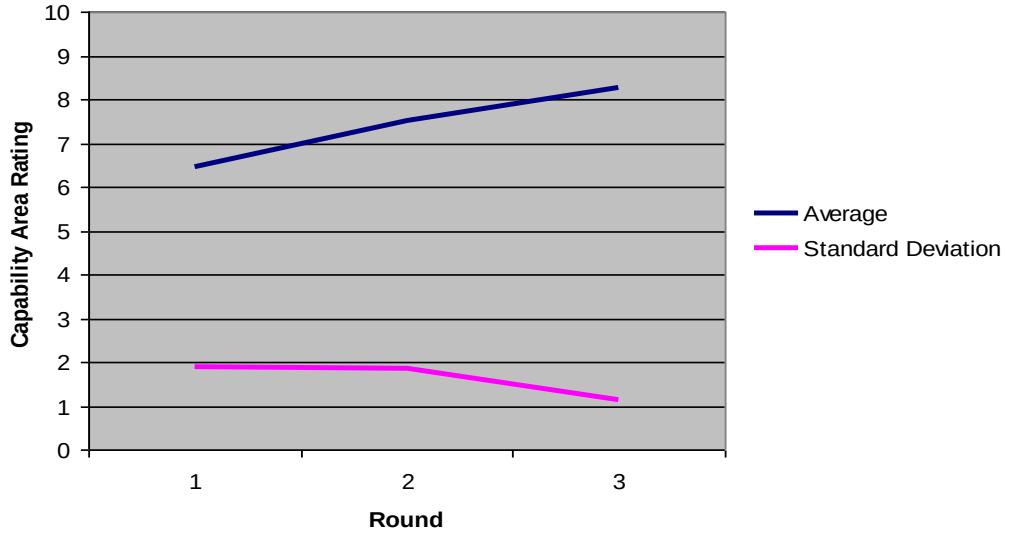


Figure 71: Methods Capability Areas – Average & Standard Deviation

Perceived Importance

Participants allocated a total of 10 points amongst the capability areas based on perceived importance. Figure 72 reflects the average and standard deviation of final ratings.

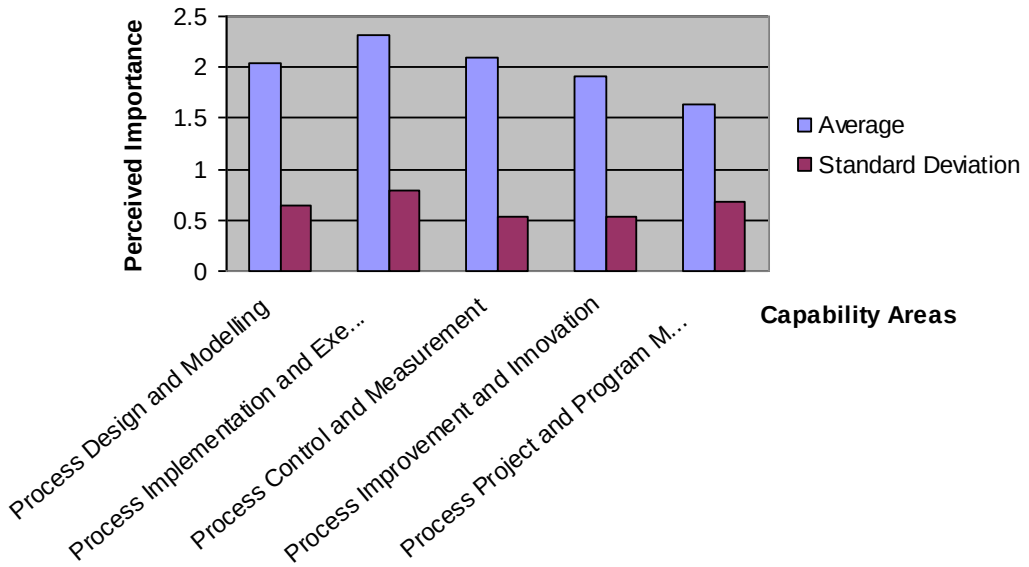


Figure 72: Methods Capability Areas – Perceived Importance

Final Capability Area Comments

A number of the expert panel highlighted improvements for the final capability areas including:

Should include a capability area of change management methods (e.g. stakeholder analysis). (5)

…concern that we change over to general criteria earlier than in other factors. Why do we not continue with 'content'…additional detail is confusing as they are very selective. (14)

These comments did not result in any further changes to the list.

Modified Capability Areas following Final Comments

The final list of capability areas is:

- Process Design and Modelling
- Process Implementation and Execution
- Process Control and Measurement
- Process Improvement and Innovation
- Process Project and Program Management

13.2.15 Information Technology Delphi Study

The Information Technology study included four rounds. Table 137 provides a summary of demographics for those experts that completed all rounds of the Information Technology study.

Category / Region	Industry	Academia
USA	3	3
Australia	2	1
Europe	1	1
Category Total	***6***	***5***

Table 137: Information Technology Expert Panel

Definition

The final definition proposed for rating by the expert panel was:

> *In the context of process management,* ***Information Technology*** *is the software, hardware and information systems that enable process awareness, productivity and flexibility to improve business performance.*

Figure 73 shows a summary of final ratings and Figure 74 shows the change in the average and standard deviation of ratings over the four rounds of the Delphi study.

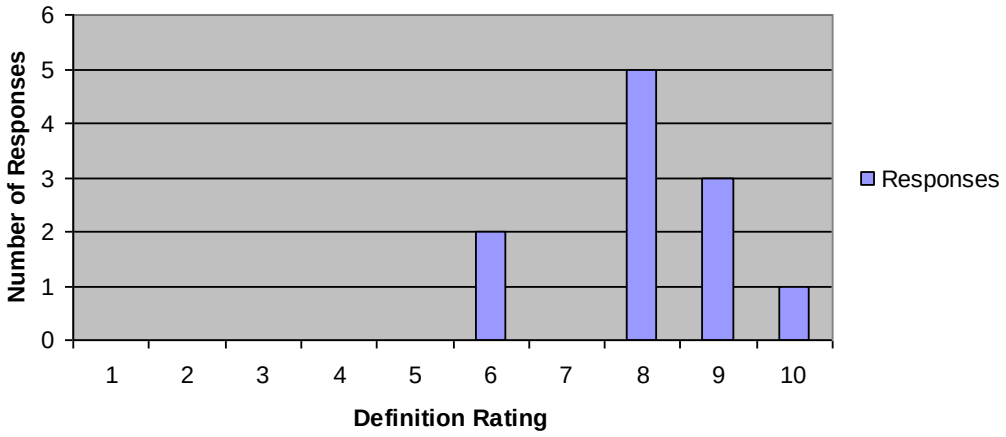


Figure 73: Information Technology Definition – Responses per Rating

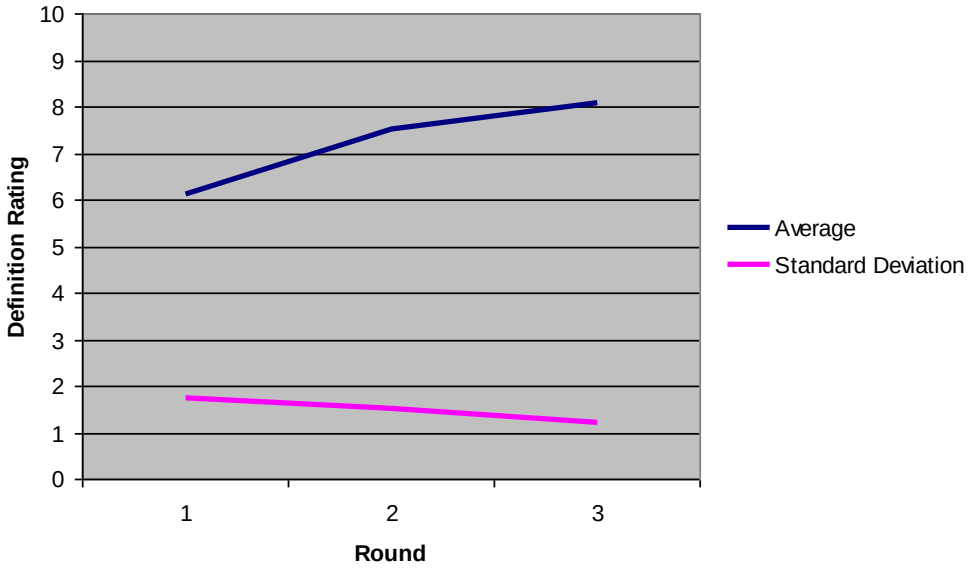


Figure 74: IT Definition – Average and Standard Deviation

Major Discussion Areas

The major discussion points during the development of the Information Technology definition included:

Automated Support?

The terminology used in the definition generated a significant level of discussion:

…disagree with describing IT as "automated support". IT = software, hardware and information (5)

…does not define information technology in relation to other technologies that automate support (9)

…should only cover the information related tools, systems and infrastructures (9)

Automated support is too much…automation is not the main focus (10)

…IT function can also provide the inspiration to innovation by way of informing (not merely supporting)… (12)

…too generic…could easily be talking about some general support tools…maybe put "automated" back in i.e. "automated management systems"… (13)

Do not exclude semi-automated, cross-organisational (14)

"Automated support" was therefore removed from the proposed definition.

"efficiency and effectiveness"

Discussion occurred around the use of "efficiency and effectiveness":

…are too limited not taking agility into account. (9)

…would include office software such as MS-Word which improves efficiency and effectiveness…too unspecific for my taste. (10)

…need some mechanism to make sure all definitions are similar…why do we stress improved efficiency and effectiveness here but not with the other factors…(14)

"infrastructure"

Discussion occurred around the use of "infrastructure":

…infrastructure can be IT based or not. (5)

There are other infrastructure types (e.g. facilities such as building) that are not IT specific… (12)

“through process lifecycle stages”

Discussion occurred around the use of “process lifecycle stages”:

…“all process lifecycle stages” is assumed and therefore not necessary. (5)

why don’t we just say support for all business process lifecycle stages?...(14)

Final Definition Comments

A number of the expert panel highlighted improvements to the final proposed definition including:

“improve business performance”

…improve is superfluous taking “enable” into account (9)

…can we phrase more in alignment with methods (14)

“process awareness, productivity, flexibility”

…what is process awareness…what is process productivity…what is process flexibility…improving process performance = productivity and flexibility hence redundant… (5)

…sounds more complicated than the previous one…”productivity and flexibility” sound very selective…(14)

“information systems”

Software, hardware and information systems sound odd. Information systems in some definitions contain software, hardware and the surrounding organisational units…does the system label add value…(10)

“is the” or “are the”

Questions over the use of “is the” included:

“is the” should be “are the”. (10)

Should it be "are" not "is"? (14)

Modified Definition following Final Comment

Based on final comments by the expert panel the final definition was:

> *In the context of process management,* ***Information Technology*** *is the software, hardware and information management systems that enable and support process activities.*

Capability Areas

The final proposed list of capability areas provided to the expert panel for rating and comment was:

- Process Design and Modelling
- Process Implementation and Execution
- Process Control and Measurement
- Process Improvement and Innovation
- Process Project and Program Management

Figure 75 shows a summary of final ratings and Figure 76 shows the change in the average and standard deviation of ratings over the four rounds of the Delphi study.

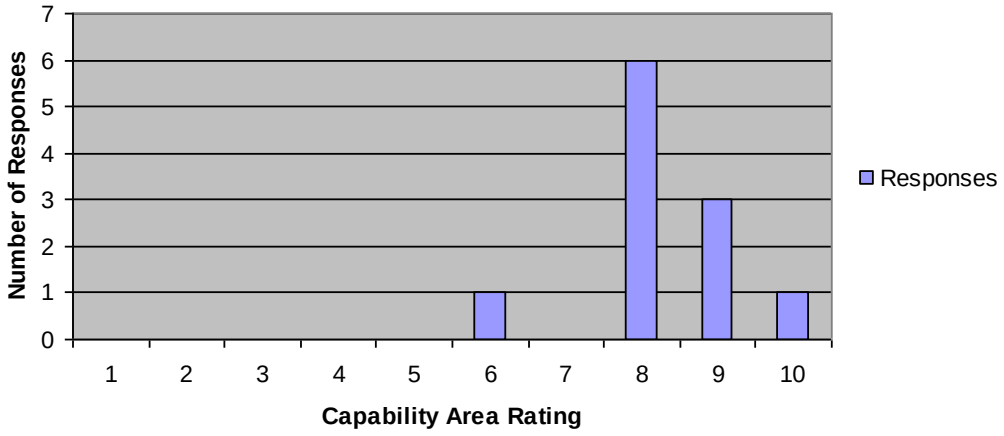


Figure 75: IT Capability Areas – Responses per Rating

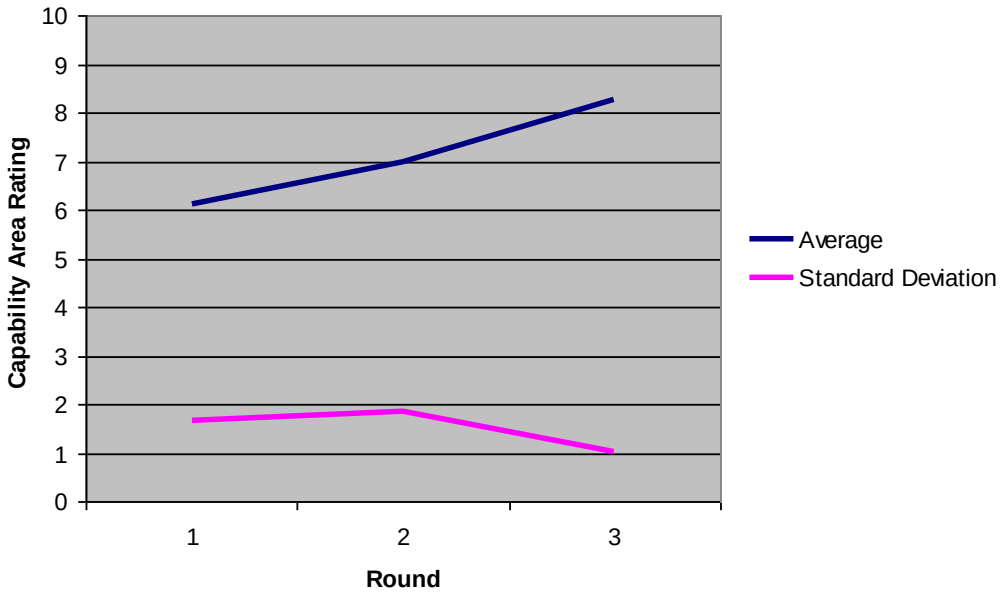


Figure 76: IT Capability Area – Average and Standard Deviation

Perceived Importance

Participants allocated a total of 10 points amongst the capability areas based on perceived importance. Figure 77 reflects the average and standard deviation of final ratings.

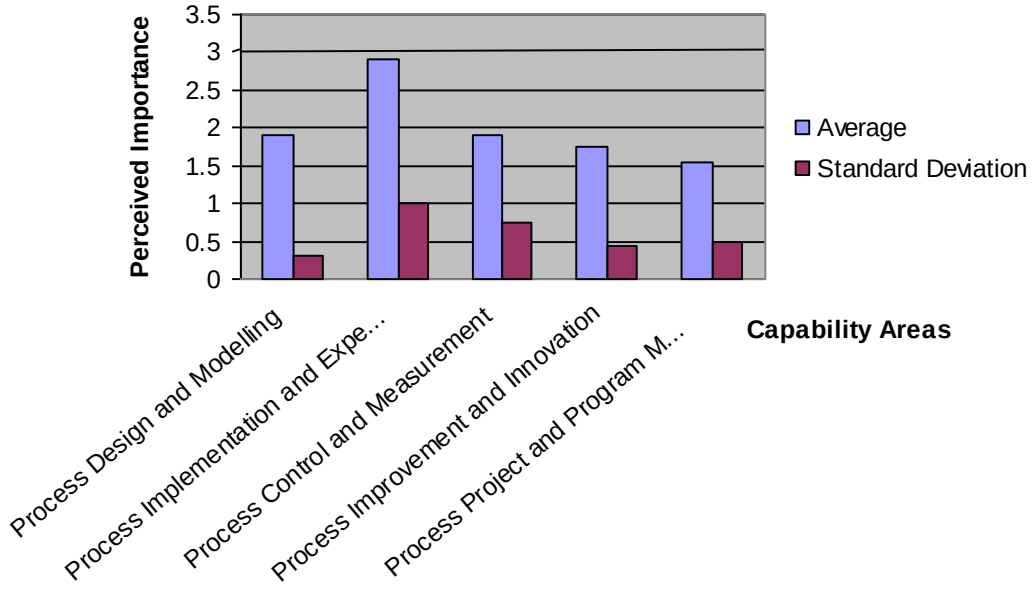


Figure 77: IT Capability Area – Perceived Importance

Final Capability Area Comments

A number of the expert panel highlighted improvements to the final proposed list of capability areas including:

What about change management as a capability area? What is an example of process improvement and innovation information technology? What is that? I don't get that category. (5)

…it would be good if the additional detail column was more IT specific... (14)

These comments did not result in any changes to the list of capability areas.

Modified Capability Areas following Final Comments

The final list of capability areas is:

- Process Design and Modelling
- Process Implementation and Execution
- Process Control and Measurement
- Process Improvement and Innovation
- Process Project and Program Management

13.2.16 People Delphi Study

The People study included three rounds. Table 138 provides a summary of demographics for those experts that completed all rounds of People study.

Category / Region	Industry	Academia
USA	5	4
Australia	2	1
Europe	1	1
Category Total	***8***	***6***

Table 138: People Expert Panel

Definition

The final definition proposed for rating by Participants was:

> *In the context of process management,* ***People*** *are the individuals and groups who continually enhance and apply their process-related skills, expertise and knowledge to improve business performance.*

Figure 78 shows a summary of final ratings and Figure 79 shows the change in the average and standard deviation of ratings over the three rounds of the study.

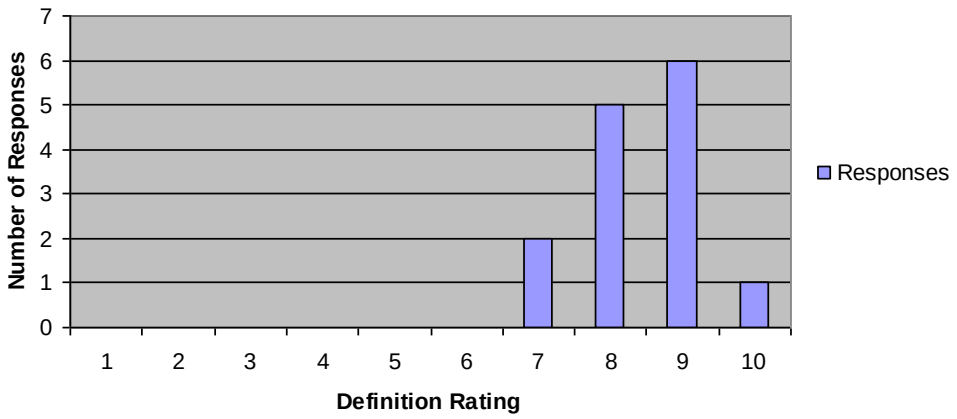


Figure 78: People Definition – Responses per Rating

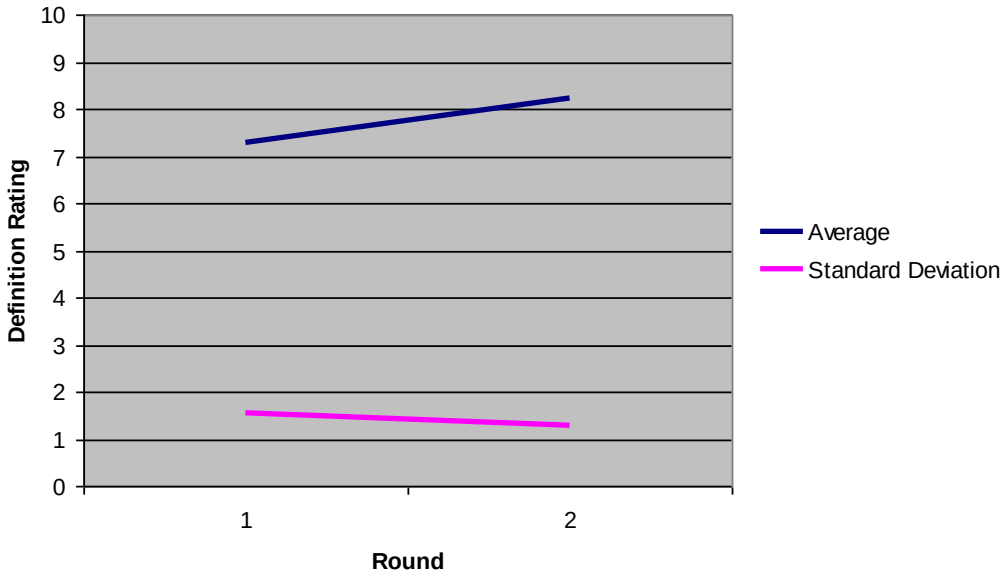


Figure 79: People Definition – Average and Standard Definition

Major Discussion Areas

The major discussion points during the development of the People definition include:

Skills, expertise, knowledge, talents, abilities?

The terminology used in the definition generated a significant level of discussion:

…skills is very similar to talents so just use skills (5)

"Abilities, expertise, knowledge and talents" is far too imprecise. Why not simply knowledge? (9)

I find the distinction between expertise and knowledge too fuzzy (10)

Do you have a clear differentiation for ability, expertise, knowledge, talent? (14)

Education, training, learning?

Discussion occurred around the use of "education and training":

…education and training are ways of affecting the process skills… (5)

What is the difference between education and training? (10)

I wonder whether 'learning' might not be a better term than 'education? (24)

Process-orientation?

Discussion occurred around the use of "process-orientation":

Did we address organisational structure in one of the other factors? (3)

…What does "drivers of process-orientation" mean? I think we should take that out… (5)

"process-orientation" should not be an end in itself, but a means to an end, the end being improved business performance. (12)

I do not like the 'marketing-slang'… (14)

Replace process-orientation by "learning organisation" and the definition is still valid. (16)

Final Definition Comments

A number of the expert panel highlighted improvements to the final proposed definition including:

Skills, expertise and knowledge?

The terminology used in the definition generated a significant level of discussion:

I still think that 'skills, expertise and knowledge' are too overlapping terms, and hence too imprecise. Better would be 'experience and knowledge' in that these are distinct categories. (9)

I find the distinction between expertise and knowledge too fuzzy (10)

Modified Definition following Final Comment

Based on final comments provided by the expert panel the final definition is:

In the context of process management, ***People*** *are the individuals and groups who continually enhance and apply their process-related expertise and knowledge.*

Capability Areas

The final proposed list of capability areas provided to the expert panel for rating and comment was:

- Process Skills and Expertise
- BPM Education and Learning
- Process Collaboration and Communication
- BPM Knowledge
- BPM Leaders

Figure 80 shows a summary of final ratings and Figure 81 shows the change in the average and standard deviation of ratings over the three rounds of the Delphi study.

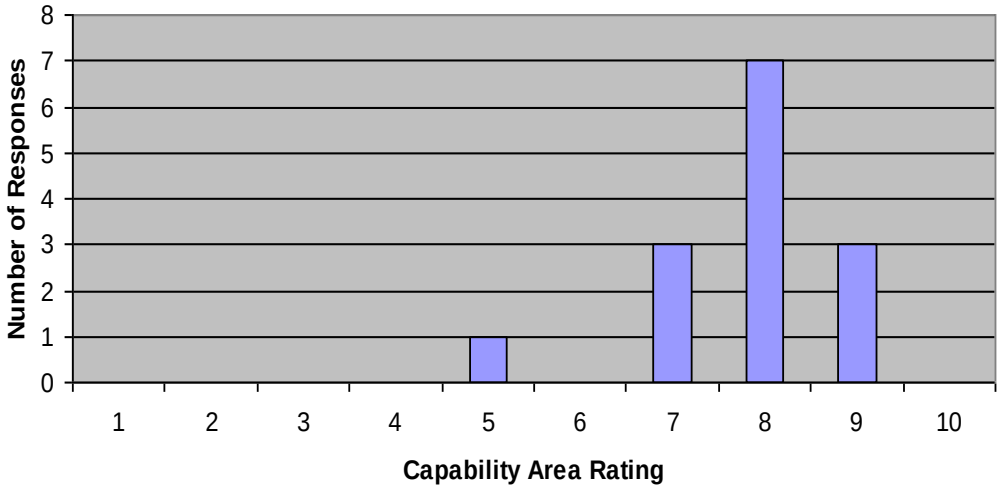


Figure 80: People Capability Areas – Response per Rating

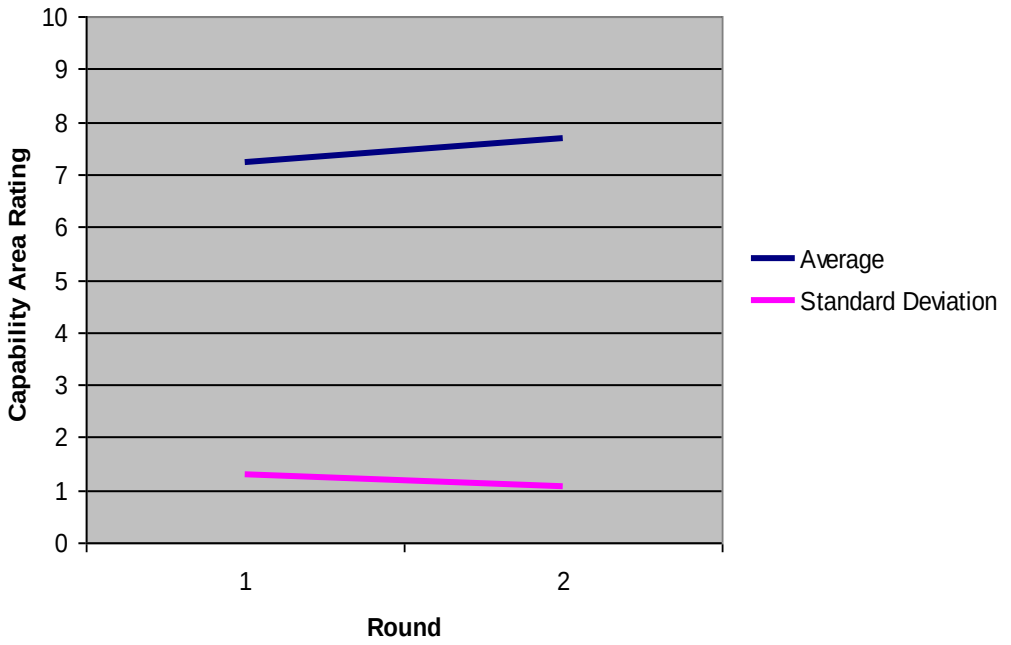


Figure 81: People Capability Areas – Average and Standard Deviation

Perceived Importance

Participants allocated a total of 10 points amongst the capability areas based on perceived importance. Figure 82 reflects the average and standard deviation of final ratings.

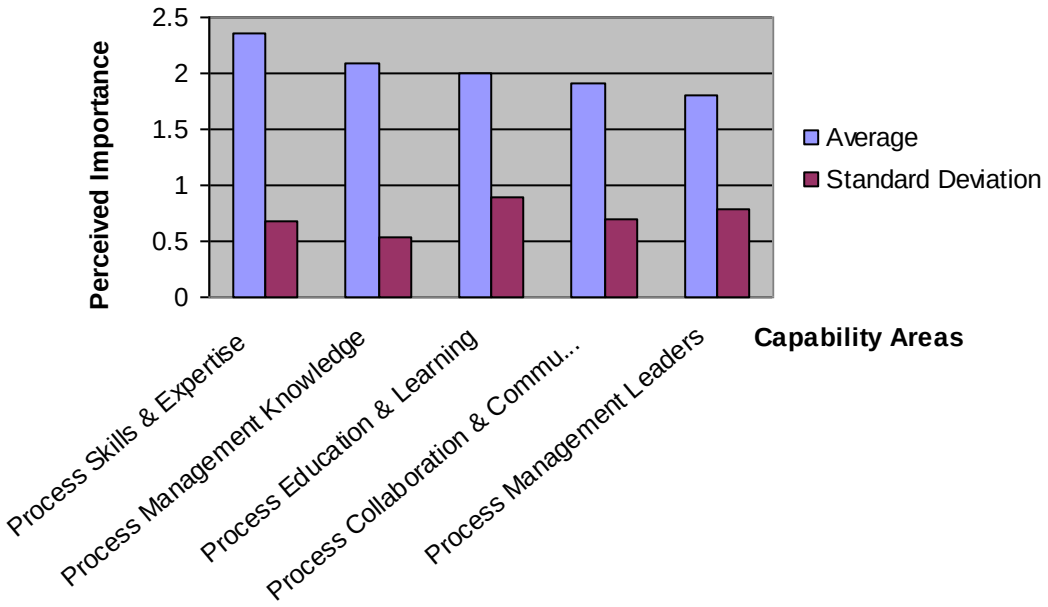


Figure 82: People Capability Areas – Perceived Importance

Final Capability Area Comments

A number of the expert panel highlighted improvements to the final proposed list of capability areas including:

"BPM"

I don't like the term BPM – I suggest we use process management. (5)

I would prefer not to use the abbreviation BPM as it is too often applied only to software and not to the broader issues. (11)

I am confused by the terms 'process' and 'BPM – what's the distinction between the two? (24)

"Leaders"

…leadership including Leaders belongs to Culture, I guess it is too difficult to separate leadership and leaders? (14)

Leadership is critical to make the individuals effective in improving…they must be encouraged by leaders… (20)

We list 'BPM Leaders' – don't we mean 'leadership'? (24)

Modified Capability Areas following Final Comments

Based on final comments there were a number of minor changes to the proposed list of capability areas. Table 139 shows all modifications.

Proposed	Revised
BPM Knowledge	Process Management Knowledge
BPM Education and Learning	Process Education & Learning
BPM Leaders	Process Management Leaders

Table 139: People Capability Area Modifications

The final list of Capability Areas is:

- Process Skills and Expertise
- Process Management Knowledge
- Process Based Education
- Process Collaboration
- Process Management Leaders

The expert panel did not re-rate minor changes to the final capability areas.

13.2.17 Culture Delphi Study

The Culture study included three rounds. Table 140 provides a summary of demographics for those experts that completed all rounds of the Culture study.

Category / Region	Industry	Academia
USA	3	4
Australia	2	1
Europe	1	-
Category Total	*6*	*5*

Table 140: Culture Expert Panel

Definition

The final definition proposed for rating by the expert panel was:

> *In the context of process management,* ***Culture*** *is the collective values and beliefs that shape process-related attitudes and behaviours to improve business performance.*

Figure 83 shows a summary of final ratings and Figure 84 shows the change in the average and standard deviation of ratings over the three rounds of the study.

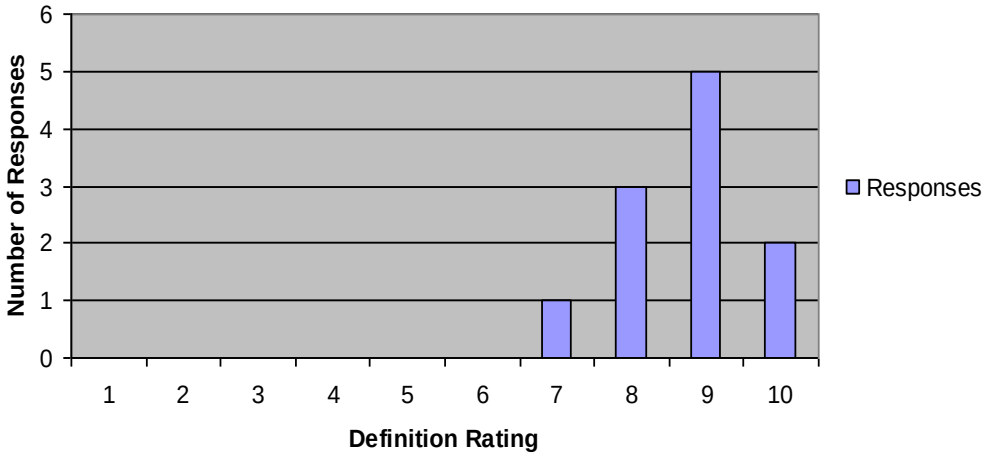


Figure 83: Culture Definition – Responses per Rating

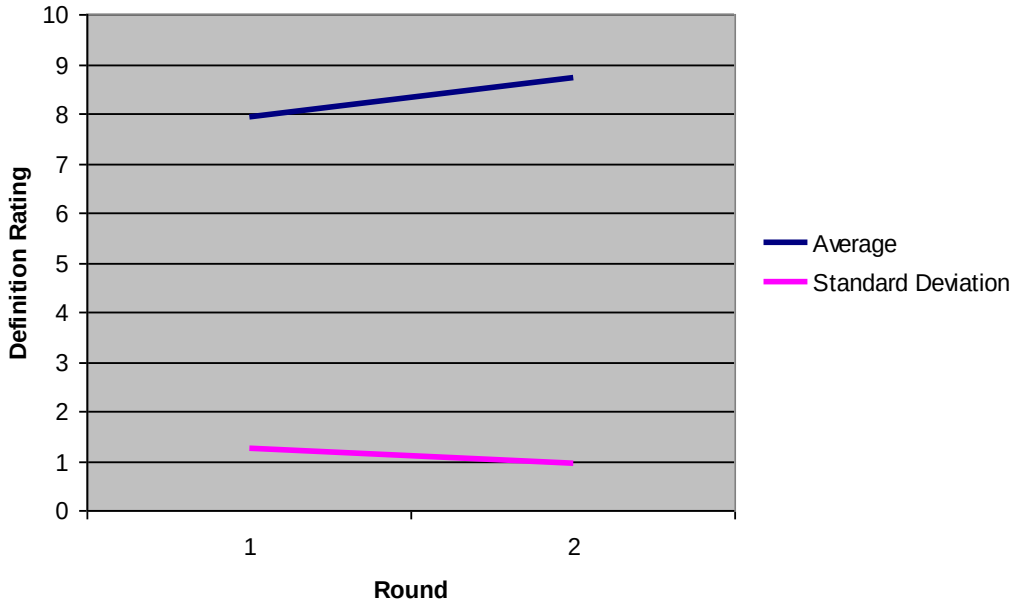


Figure 84: Culture Definition – Average and Standard Deviation

Major Discussion Areas

The definition for Culture was highly rated by the expert panel from the first proposed definition. There was little discussion about the proposed definition.

Final Definition Comments

There were no final comments that led to changes in the final proposed definition. Comments about the redundancy of the phrase *to improve business performance* within all definitions led to its removal.

Modified Definition following Final Comment

The final culture definition is:

> *In the context of process management,* ***Culture*** *is the collective values and beliefs that shape process-related attitudes and behaviours.*

Capability Areas

The final proposed list of Capability Areas provided to Participants for rating and comment was:

- BPM Values and Beliefs
- Process-related Attitudes and Behaviours
- Responsiveness to Change
- Attention to BPM
- BPM Networks

Figure 85 shows a summary of final ratings and Figure 86 shows the change in the average and standard deviation of ratings over the three rounds of the Delphi study.

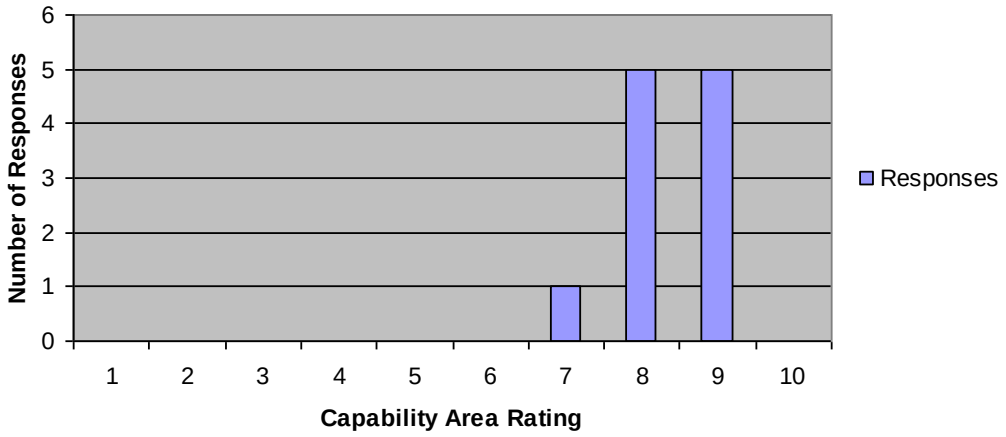


Figure 85: Culture Capability Areas – Responses per Rating

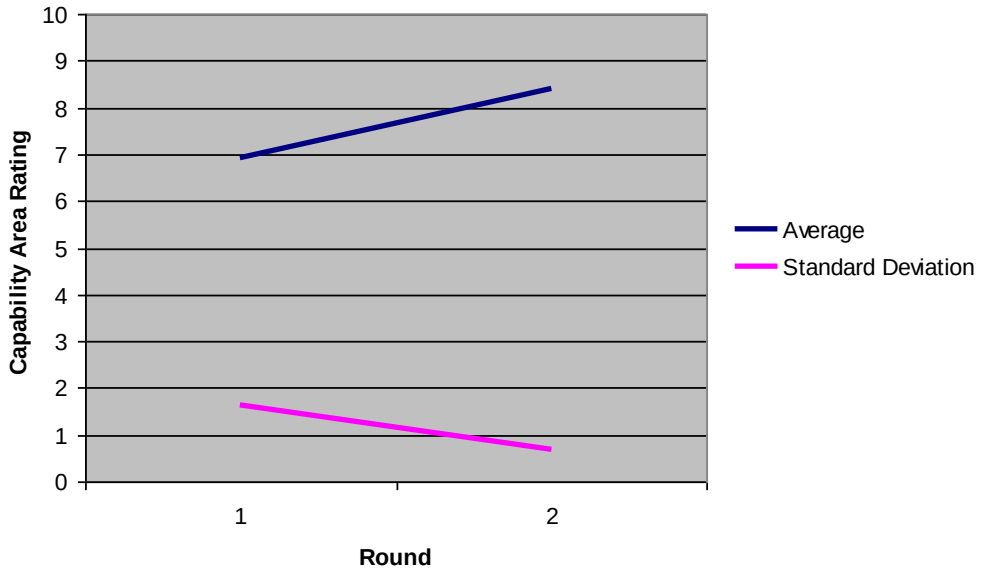


Figure 86: Culture Capability Areas – Average & Standard Deviation

Perceived Importance

Participants allocated a total of 10 points amongst the capability areas based on perceived importance. Figure 87 reflects the average and standard deviation of final ratings.

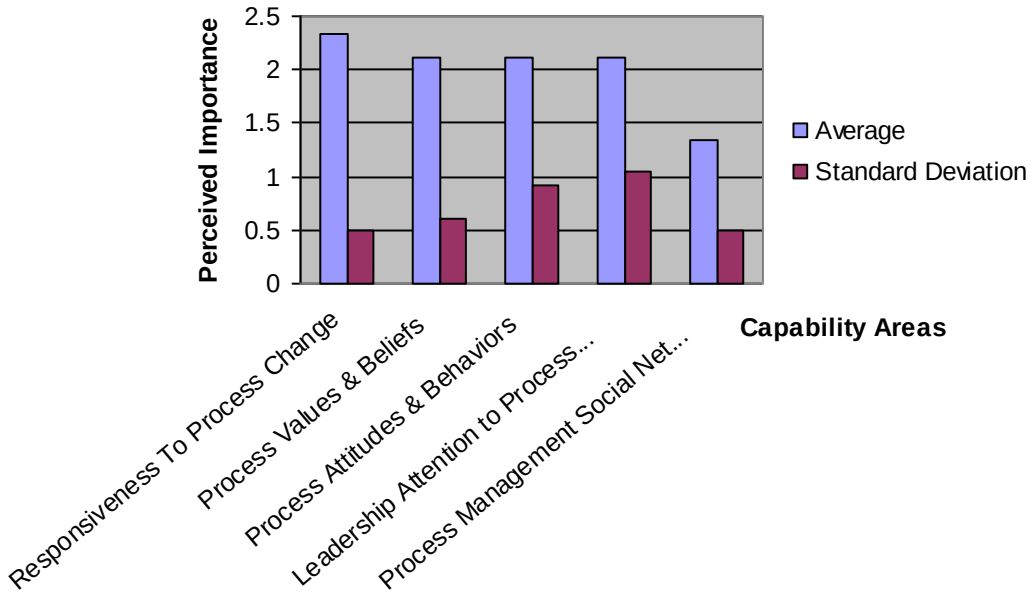


Figure 87: Culture Capability Areas – Perceived Importance

Final Capability Area Comments

There were no direct comments about the final list of capability areas, with most comments directed at the mapping for the various capability areas.

Modified Capability Areas following Final Comments

Based on final comments minor changes occurred in the proposed list of capability areas. Table 141 shows all such modifications.

Proposed	Revised
Responsiveness to Change	Responsiveness to Process Change
BPM Values and Beliefs	**Process Based** Values and Beliefs
Process-related Attitudes and Behaviours	**Process Based** Attitudes and Behaviours
Attention to BPM	**Leadership** Attention to Process
BPM Networks	Process Management **Social** Networks

Table 141: Culture Capability Area Modifications

The final list of capability areas[123] is:

- Responsiveness to Process Change
- Process Based Values and Beliefs
- Process Based Attitudes and Behaviours
- Leadership Attention to Process
- Process Management Social Networks

[123] The Panel did not re-rate changes to definitions and capability areas made following final round comments.

13.2.18 Final Executive Summary: Table of Contents

Process Management Maturity

Delphi Study: Executive Summary

Tonia de Bruin

Brisbane, September 2005

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Figures and Tables

13.2.19 Final Series Summary: Table of Contents & Appendix

Process Management Maturity

Delphi Study: Series Summary

Tonia de Bruin

Brisbane, September 2005

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13.2.20 Mapping of Original Items to Capability Areas

Strategic Alignment Additional Details

Capability Area	Additional Detail
Process Improvement Plan	a) Explicit/specific incorporation of strategy in process improvement plan b) Model/map showing linkage between process improvement and strategy execution c) Plan for process improvement based on strategic prioritization d) Specific process improvement targets e) Defined PIP review cycles including monitoring and measurement of progress f) Process performance measures related to business goals g) Continuous practice enhancement
Strategy and Process Capability Linkage	a) Model/map showing linkage between strategy and process capabilities b) Clear process for linking strategy and process capability c) Identification of process bottlenecks / inhibitors d) Process resourcing strategy (principles for what processes will be done in-house vs. contracted) e) Defined review cycles incorporating loop between strategy and process
Process Architecture	a) Identification/Existence of Enterprise Processes b) Documentation/Design of Enterprise Processes c) Model/map of Enterprise Processes d) Localization/variants of Enterprise Processes e) Execution/deployment of Enterprise Processes
Process Output Measurement	a) Financial Achievement i) Profitability

Capability Area	Additional Detail
	ii) Link to defined goals & business scorecard b) Performance i) Throughput, defects, timeliness, accuracy, productivity ii) Link to business scorecard c) Product delivery i) Time to market ii) Innovation iii) Fit for purpose d) Customer Satisfaction/loyalty e) Market Alignment
Process Customers and Stakeholders	a) Identification of process stakeholders b) Line-of sight to process customers (how processes impact customers) c) Inter-company linkage (degree to which there is linking and aligning of Customer and Supplier processes d) Explicit consideration of process stakeholder views (which might not be identical with official strategy) e) Role of process stakeholder in adjusting processes and resources f) Provision of monitoring information to process stakeholders g) Partnerships/sourcing strategy

Assumes:

Existence of strategy that explicitly incorporates processes

Existence of agreed and documented “strategic priorities”

Well defined business goals

Governance Additional Details

Capability Area	Additional Detail
Process Management Decision Making	a) Existence of clearly defined and documented processes for decision making in both anticipated and unanticipated circumstances that are communicated and continually reviewed b) Speed of process decision making c) Ability to influence process resource allocation d) Formal and informal power influences on processes e) Authority to instigate and communicate process change f) Ability to influence organizational reaction to process change
Process Roles and Responsibilities	a) Examples: Process sponsor, process owner, business owner, chief process officer, process leaders, process councils, process steering groups, process governance board, business process analyst b) Clearly defined and documented process roles c) Identification of only 1 process owner per Enterprise Process d) Delineation of local & global process performer roles e) Incorporation of authority-to-change and accountability for processes f) Degree to which process roles and responsibilities are recognized and accepted g) Co-ordination of process management initiatives throughout the organization h) Process resource allocation
Process Metrics & Performance Linkage	a) Existence and use of clearly defined and documented processes to monitor and measure: • Reward and remuneration • Enterprise process outcomes • Process Change initiatives b) Existence and use of clearly defined and documented processes to link: • Enterprise process outcomes – business goals/strategic priorities • Reward and remuneration – enterprise process outcomes & business performance • Process Change initiatives – business goals/strategic priorities c) Existence and use of clearly defined and documented Process Architecture

Capability Area	Additional Detail
	d) Comparison of Actual vs. Planned e) Undertake and maintain review cycle
Process Management Standards	a) Well defined process management principles b) Review cycle to maintain quality of process management principles c) Guidelines for the establishment and management of: • Process measures and metrics • Process issue resolution • Process change management, risk and communication of same • Relevant reward and remuneration structures • Process Reporting • Accountability Monitoring • Process Communication
Process Management Controls	a) Well defined process management controls b) Process controls including: • Degree to which standards are deployed • Degree to which standards are complied with • Degree to which standards support authority vs. constrict it

Methods Additional Details

Capability Area	Additional Detail
Process Design and Modelling	a) Sophistication of *Process Design and Modelling* method/s • Level of support and documentation • Ability to customize • Linkage to suitable software/tool b) Suitability and Fit of *Process Design and Modelling* method/s • Compatibility with process management approach • Degree of integration with other process-related methods • Assessment against industry practice c) Accessibility and Usage of *Process Design and Modelling* method/s • Measurable contribution use makes to achievement of process related objectives • Availability throughout organization • Availability to customers and suppliers • Consistency of application
Process Implementation and Execution	a) Sophistication of *Process Implementation and Execution* method/s • Level of support and documentation • Ability to customize • Linkage to suitable software/tool b) Suitability and Fit of *Process Implementation and Execution* method/s • Compatibility with process management approach • Degree of integration with other process-related methods • Assessment against industry practice c) Accessibility and Usage of *Process Implementation and Execution* method/s

Capability Area	Additional Detail
	• Measurable contribution use makes to achievement of process related objectives • Availability throughout organization • Availability to customers and suppliers • Consistency of application
Process Control and Measurement	a) Sophistication of *Process Control and Measurement* method/s • Level of support and documentation • Ability to customize • Linkage to suitable software/tool b) Suitability and Fit of *Process Control and Measurement* method/s • Compatibility with process management approach • Degree of integration with other process-related methods • Assessment against industry practice c) Accessibility and Usage of Process *Control and Measurement* method/s • Measurable contribution usage makes to achievement of process related objectives • Availability throughout organization • Availability to customers and suppliers • Consistency of application
Process Improvement and Innovation	a) Sophistication of *Process Improvement and Innovation* method/s • Level of support and documentation • Ability to customize • Linkage to suitable software/tool b) Suitability and Fit of *Process Improvement and Innovation* method/s • Compatibility with process management approach • Degree of integration with other process-related methods

Capability Area	Additional Detail
	• Assessment against industry practice c) Accessibility and Usage of Process *Improvement and Innovation* method/s • Measurable contribution usage makes to achievement of process related objectives • Availability throughout organization • Availability to customers and suppliers • Consistency of application
Process Project and Program Management	a) Sophistication of *Process Project and Program Management* method/s • Level of support and documentation • Ability to customize • Linkage to suitable software/tool b) Suitability and Fit of *Process Project and Program Management* method/s • Compatibility with process management approach • Degree of integration with other process-related methods • Assessment against industry practice c) Accessibility and Usage of *Process Project and Program Management* method/s • Measurable contribution usage makes to achievement of process-related objectives • Availability throughout organization • Availability to customers and suppliers • Consistency of application

Information Technology Additional Details

Capability Area	Additional Detail
Process Design and Modelling	a) Sophistication of *Process Design and Modelling* IT • Level of support and documentation (including use of SMART (specific, measurable, agreed, relevant, time-bound) Service Level Agreements) • Ability to customize • Linkage to suitable method • Degree to which process-related ID/security/privacy issues are incorporated • Level of (meaningful) automation • Extent to which design and modelling performance data are captured within the IT b) Suitability and Fit of *Process Design and Modelling* IT • Compatibility with process management approach • Degree of integration with other IT • Degree to which based on business requirements c) Accessibility and Usage of *Process Design and Modelling* IT • Measurable contribution usage makes to achievement of process related objectives • Availability through organization • Availability to suppliers and customers • Consistency of use
Process Implementation and Execution	a) Sophistication of *Process Implementation and Execution* IT • Level of support and documentation (including use of SMART (specific, measurable, agreed, relevant, time-bound) Service Level Agreements) • Ability to customize • Linkage to suitable method

Capability Area	Additional Detail
	• Degree to which process-related ID/security/privacy issues are incorporated • Level of (meaningful) automation • Extent to which implementation and execution performance data are captured within the IT b) Suitability and Fit of *Process Implementation and Execution* IT • Compatibility with process management approach • Degree of integration with other IT • Degree to which based on business requirements c) Accessibility and Usage of *Process Implementation and Execution* IT • Measurable contribution usage makes to achievement of process related objectives • Availability through organization Availability to suppliers and customers • Consistency of use
Process Control and Measurement	a) Sophistication of *Process Control and Measurement* IT • Level of support and documentation (including use of SMART (specific, measurable, agreed, relevant, time-bound) Service Level Agreements) • Ability to customize • Linkage to suitable method • Degree to which process-related ID/security/privacy issues are incorporated • Level of (meaningful) automation • Extent to which control and measurement performance data are captured within the IT b) Suitability and Fit of *Process Control and Measurement* IT • Compatibility with process management approach • Degree of integration with other IT • Degree to which based on business requirements c) Accessibility and Usage of *Process Control and Measurement* IT • Measurable contribution usage makes to achievement of process related objectives

Capability Area	Additional Detail
	• Availability through organization • Availability to suppliers and customers • Consistency of use
Process Improvement and Innovation	a) Sophistication *of Process Improvement and Innovation* IT • Level of support and documentation (including use of SMART (specific, measurable, agreed, relevant, time-bound) SLA's • Ability to customize • Linkage to suitable method • Degree to which process-related ID/security/privacy issues are incorporated • Level of (meaningful) automation • Extent to which improvement and innovation performance data are captured the IT b) Suitability and Fit of *Process Improvement and Innovation* IT • Compatibility with process management approach • Degree of integrated with other IT • Degree to which based on business requirements c) Accessibility and Usage • Measurable contribution usage makes to achievement of process related objectives • Availability through organization • Availability to suppliers and customers • Consistency of use
Process Project and Program Management	a) Sophistication of *Process Project and Program Management* IT • Level of support and documentation (including use of SMART (specific, measurable, agreed, relevant, time-bound) SLA's • Ability to customize • Linkage to suitable method

Capability Area	Additional Detail
	• Degree to which process-related ID/security/privacy issues are incorporated • Level of (meaningful) automation • Extent to which project and program management performance data are captured within the IT b) Suitability and Fit of *Process Project and Program Management* IT • Compatibility with process management approach • Degree of integration with other IT • Degree to which based on business requirements c) Accessibility and Usage of *Process Project and Program Management* IT • Measurable contribution usage makes to achievement of process related objectives • Availability through organization • Availability to suppliers and customers • Consistency of use

People Additional Details

Capability Area	Additional Detail
Process Skills & Expertise	a) Recognition of different process skills and expertise for different process roles b) Degree to which job definitions include process context c) Identification of 'available' and 'required' process skills and expertise (comprehensive, depth, relevance) d) Identification and management of 'gaps' in process skills and expertise: • Process competency development programs • Demographic understanding of employee segments and impact on processes e) Reviews & advancement based on process-related performance: • Number of people with identified process career paths • Degree to which process skills and expertise are measured and reviewed • Degree to which advancement programs are related to process roles and performance • Incorporation of individual and group process measures in reviews and advancement programs
Process Management Knowledge	a) Depth of knowledge held about BPM principles and practices b) Level of understanding of process improvement and BPM methods adopted c) Extent to which the effect (value add – plus or minus) people have on enterprise process outcomes is known d) Extent of knowledge about information requirements of different process stakeholder groups and how well they are met e) Extent of knowledge about customer satisfaction – for both internal and external process customers
Process Education & Learning	a) Commitment to ongoing process-related education and learning b) Existence, extent and appropriateness of process-related education for: • Individuals on their and other's process roles • Individuals on their own and interfacing processes • Individuals on customer and other stakeholders expectations

Capability Area	Additional Detail
	• Stakeholder groups on process outcomes c) Measurement of process 'learning' i.e. the degree to which education has been successful d) Qualification & experience of BPM Educator/s e) Participation in external BPM programs/certification
Process Collaboration & Communication	a) Communication of process information between different process stakeholder groups b) Discovery, exploration and dissemination of best practice between process stakeholders c) Level of collaboration on process-related activities across processes d) Availability and access to process-related information management repositories
Process Management Leaders	a) People's willingness to lead, take responsibility and be accountable for enterprise processes b) Degree to which desired process leadership skills and management style are practiced c) Degree to which people are allowed to demonstrate process initiative and leadership d) Influential process owners vs. functional leaders e) Degree to which process leaders are seen as role-models f) Ability of process leaders to influence behaviour g) Ability of process leaders to adapt process management to meet individual needs such as appreciation of work/life balance

Culture Additional Details

Capability Area	Additional Detail
Responsiveness to Process Change	a) Receptiveness of the organization to process change b) Propensity of the organization to accept process change and adapt c) Ability to cross functional boundaries and act in best interest of processes d) Amount of process innovation and improvement recommendations made, accepted and successfully implemented e) Speed with which process change can be successfully implemented f) Rigidity of application of process-related systems and rituals
Process Values & Beliefs	a) Broad process thinking – processes seen as the way things get done b) Commonly held beliefs and values on the role and benefits of BPM c) Longevity of BPM expressed by the depth and breadth of ongoing commitment d) Extent to which vision, mission and value statements reflect process thinking e) Intentional rituals and ceremonies that incorporate process related values f) Support for and acceptance of process innovation and change g) Recognition of time and effort required to introduce process change
Process Attitudes and Behaviours	a) Of both those involved in, and those affected by, process management b) Willingness to question existing process practices c) As reflected in 'actual' process-related behaviour d) Discipline in accepting process change that they may not necessarily agree with e) Acceptance of the needs of process-orientation f) Degree to which 'influence' and 'power' is used to affect process outcomes g) Support for open and honest process communication h) Level of trust and empowerment to achieve process outcomes i) Degree and acceptance of "learning by doing" in process execution
Leadership Attention to Process Management	a) Level of commitment & attention to processes by senior executives b) Degree of attention paid to processes at all levels

Capability Area	Additional Detail
	c) Quality of process leadership d) Level at which functional-structure and its impact on process outcomes is recognized and addressed
Process Management Social Networks	a) Existence and influence of “BPM Communities of Practice” (or similar) b) Use of “social network techniques” c) Recognition and use of informal process management networks d) Inclusion of customers and other process stakeholders in process management networks

13.3 Exploratory Case Study Supporting Documentation

13.3.1 Testing the Extended Conceptual Model

This section provides details in relation to the second aim of the case study with Company M, being to test the extended conceptual model in a practical setting.

Strategic Alignment

The maturity score for Strategic Alignment, calculated from the Maturity Survey data, was 2.97. The standard deviation within responses contributing to the maturity score was 0.1 showing a low level of variance between responses. Table 142 shows individual capability area scores that combine to give the overall factor score.

Capability Area	Maturity Score
Process Improvement Planning	3.07
Strategy and Process Capability Linkage	3.05
Enterprise Process Architecture	2.84
Process Measures	3.05
Process Customers and Stakeholders	2.99

Table 142: Maturity Scores for Strategic Alignment Capability Areas

Table 142 reflects capability maturity scores ranging from 2.84 to 3.07. This reflects consistent levels of maturity across the capability areas within the Strategic Alignment factor.

Process Improvement Plan (3.07)

Within the area *Process Improvement Plan,* the Researcher considered the identification, prioritisation and implementation of process improvement projects, including the alignment with strategic goals and objectives.

When discussing the identification of process improvement initiatives,

participants indicated the need for greater consideration of those impacted by subsequent changes. For example, one participant stated:

> *"...Previously in our planning session we said we're going to go off and do this but it had a huge impact on these guys and did we ever talk to anyone? No. It was just when we turned it on and oh, by the way, you've got to do this now. But we can't live in that world any more..."*

In a similar vein, participants identified a need to adopt an integrated approach to communicating with disparate sites with regard to the scheduling and implementation of projects, stating:

> *"…get it more integrated (…) from an operating site perspective, they feel like they're inundated with different initiatives and that it's a bit piecemeal and they struggle with priorities…"*

> *"…look at spreading them out a bit more, not so much at one time…"*

In addition to a focus on process improvement, participants indicated a need to review processes from time to time, evident in comments such as:

> *"…that business processes provide a good outcome but you have to be prepared to review and ensure that the processes are going to deliver the outcome that you want..."*

This indicated a need to consider also, process review, as distinct to process improvement. Furthermore, it highlighted the need to consider process projects as a collective group and not only in isolation.

Strategy and Process Capability Linkage (3.05)

Within the area of *Strategy and Process Capability Linkage*, the Researcher investigated the relationship between setting strategy and the level of process capability. This included considering the direction of any relationship between the two and whether existing capability affected strategic requirements.

In linking strategy and capability, Company M used a variant of Kaplan and Norton's (2004) strategy maps. For example, Figure 88 provides an example of how measures for a process improvement project cascade throughout Company M.

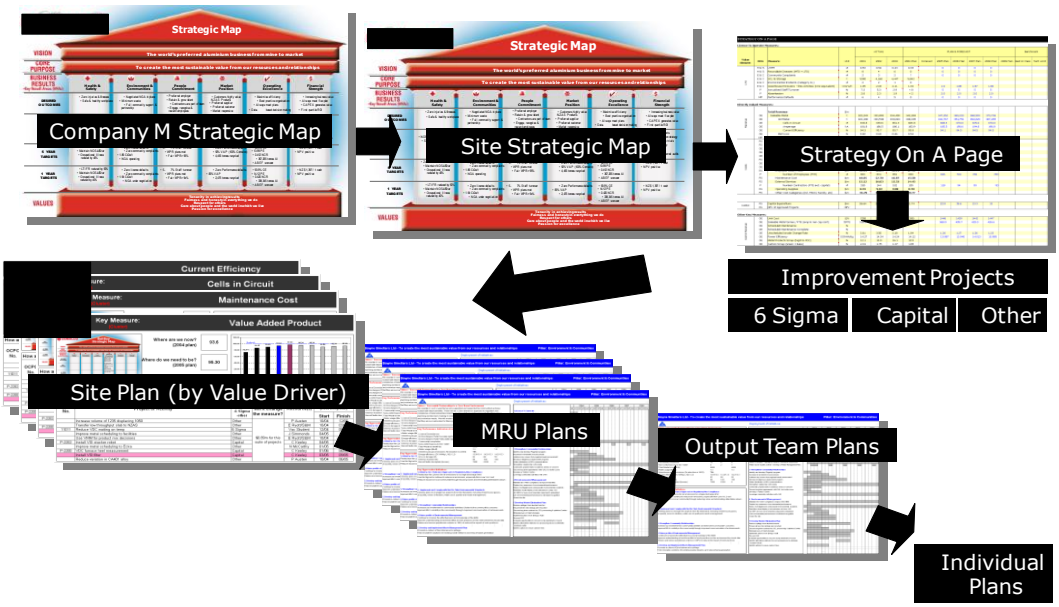

Figure 88: Example: Strategy Map Usage

This figure showed that Company M translates the Strategic Map into a Strategic Map for each site. Following this, the site establishes their "Strategy on a Page" which equated to the identification of key improvement initiatives, together with their contribution to strategy. From there, additional plans for the site, the unit, the team and individuals were set. This ensured a tight link between the initiatives and strategy.

> *"…that you have a combination of strategic thinking so the right focus together with the right tools and the resources to do it and you can get results, some pretty good results..."*

This approach showed that, in Company M, strategy drove capability, and that increasing resources and selecting the right tools were strategies for meeting shortfalls in capability.

Enterprise Process Architecture (2.84)

For the area of *Enterprise Process Architecture* (EPA), the Researcher investigated how, and the extent to which, Company M had formalised an enterprise-wide process framework.

To this end, Company M had identified seven core processes, including Mining and Refining, Smelting, Managed People, Managed Assets, Contract to Cash, Purchase to Pay and Health Safety Environment. Furthermore, Company M had depicted these seven processes on a poster, together with their core values and mission statements. Company M visibly displayed laminated A3 sized copies of this poster throughout their premises. Company M referred to this as their Strategic Map[124]. However, the level of detail behind the seven core processes depicted on the Strategic Map was, according to participants, less consistent. For example, one participant indicated:

> *"…there's various degrees (…) we have a business model that has come from Company P (…) but depending on who you ask you will get quite different answers (…) if you take Managed People (…) there are sub-processes very well documented and laid out…"*

Whilst another participant recognised the work done in this area of the past eighteen months, indicating:

> *"…those process maps at that level of detail didn't exist eighteen months ago (…) a lot of work has gone into them but they're a means to an end…"*

Another participant highlighted the importance of undertaking this work stating:

> *"…its about risk (…) the whole idea about going through the business process was to make sure we've got a common way of doing things before we implement this computer layer on top, and if there is a disconnect then you're in big trouble…"*

[124] For confidentiality reasons, there is no depiction of Company M's Strategic Map.

Despite this, there was no evidence that Company M applied a consistent approach or structure to the definition of processes at a lower level, rather the approach was to develop these layers on a case-by-case basis. In the words of one participant:

> *"…they help with a project then sit on a dusty shelf as opposed to being used for going back and looking for innovative touch points (…) we can probably finesse that…"*

This indicated that participants view an EPA as beneficial for managing risk and for progressing projects. However, developing a structure for getting consistency below the level of core processes requires time, during which process models are not used to their potential.

Process Measures (3.05)

For the area of *Process Measures*, the Researcher considered the means by which Company M ensured process measures align with strategic goals.

In defining and setting process measures, Company M used a variant of Kaplan and Norton's (1993, 2007) Balanced Scorecards. Figure 89 shows how measures cascade through various levels of Company M when setting process improvement targets.

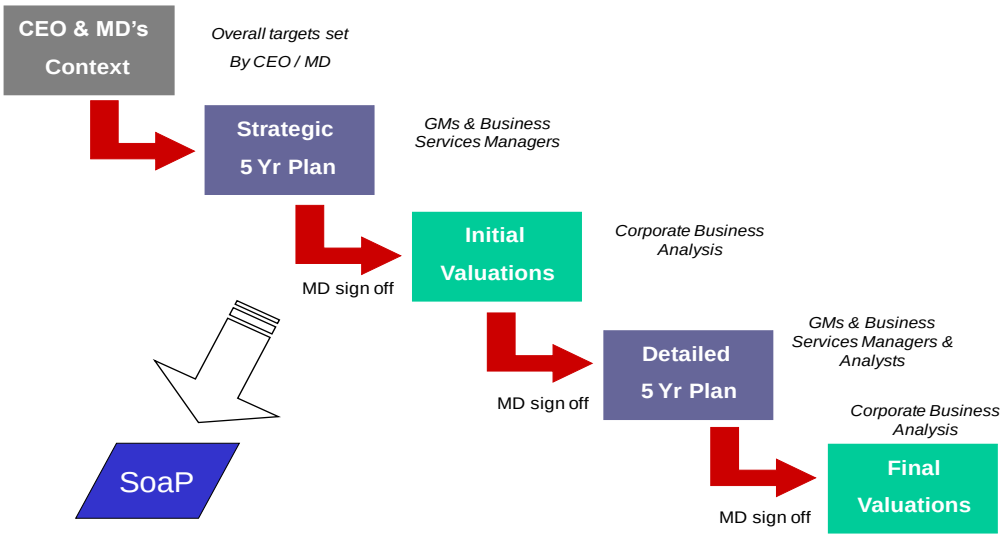

Figure 89: Aligning Process Measures to Strategy

This diagram reflected the process for setting measures within a process improvement project. It shows how the initial targets are set at a strategic level before filtering throughout the organisation. It links to the governance structure, showing the respective sign-off authorities and the use of valuations for ensuring the appropriateness of the measures being set. Participants highlighted the importance of having a series of checkpoints and iterative sign-offs in comments such as:

> *"…how you put it all together, having timelines, having points to stop and check where you are, milestones to make sure you are getting there and that you don't jut continually throw resources at it without meeting certain milestones..."*

Process Customers and Stakeholders (2.99)

In the area of *Process Customers and Stakeholders,* the Researcher considered how Company M identified and engaged with process customers and stakeholders, and subsequently how Company subsequently aligned activities within the *BPM Initiative* between the groups.

When referring to the manner in which Company M engaged customers and stakeholders, participants indicated:

> *"…we've got a change management system in place which says you must consult your stakeholders (…) there's a clear understanding you do need to do that…"*

In discussing the role of customers and stakeholders on the *BPM Initiative* and the extent to which interaction and outcomes were voluntary or required, participants indicated:

> *"…it could be either (…) if something is mandated from Company P (…) let's face it, that's the way it goes…"*

This highlighted the potential for conflict between all stakeholder groups. For example, when talking about the move to One Company P, participants stated:

> *"…it was a strategic decision, the board made it…if you ask one site GM he'd go, I've got all this other stuff to do and I don't want to do it…but other sites where absolutely engaging (…) very much into getting the initial ideas out there and soliciting feedback on how this is going to go and how effective it will be…"*

However, participants also indicated that the priority was with (internal) customers.

> *"…keep the focus on the customer e.g. corporate is here to support the sites and not vice versa…"*

This highlighted that, in practice, organisations need to balance potentially competing requirements of multiple stakeholders to achieve desired outcomes from *BPM Initiatives*.

Governance

The maturity score for Governance, calculated from the Maturity Survey data, was 2.73. This positioned the maturity of the Governance factor as being slightly below the average of all the factors for Company M. The standard deviation within responses to Governance questions was 0.2 reflecting a low level of variance between responses. Table 143 shows individual capability area scores that combine to give the overall factor score.

Capability Area	Maturity Score
Process Management Decision Making	3.12
Process Roles and Responsibilities	2.58
Process Metrics and Performance Linkage	2.82
Process Management Standards	2.58
Process Management Controls	2.55

Table 143: Maturity Scores for Governance Capability Areas

This table reflects capability maturity scores ranging from 2.55 to 3.12, a total range of .57.

Process Management Decision Making (3.12)

In the area of Process Management Decision Making, the Researcher explored how Company M made decisions with respect to both processes and the *BPM Initiative*.

In discussing the development of decision-making frameworks, participants indicated that Company M had not developed an integrated governance framework around process. For example, participants indicated:

> *"…overall our business process governance (…) is implied rather than explicit (…) it's explicit within each area. I think the integration area is where it's implied as opposed to being a specific thing…"*

A number of participants raised similar points when discussing the governance pertaining to the conduct of process improvement projects. For example:

> *"…we have a fairly informal process, there's a small group of people doing this and we communicate between the groups (…) I wouldn't say it was formalised in any fashion (…) we're still playing with that in Project X, it's one of the main issues…"*

> *"…there's not a formal one and some of the teams are making decisions in isolation without thinking of the ramifications on other teams…"*

These comments reflect potential difficulties that arise when there is a lack of a formalised process for governing the conduct of process projects. However, it was apparent within Company M that there was a more defined and structured approach to the approval and initiative of the process improvement projects. For example, the existing EXCO and the recognised process owners and other senior management roles was instrumental in the approval of all process improvement projects, as indicated in comments such as[125]:

[125] EXCO is the Executive Committee and includes all Managing Directors and the CEO. Below this are the General Managers. In Company M, the General Managers were the designated Process Custodians at the time of the case study.

> *"…during the planning process the strategic improvement projects go up to EXCO for approval (…) it doesn't have to be a big expensive project but it can be something that impacts the whole business (…) the EXCO which is run be our CEO makes a call…"*

> *"…before it gets to EXCO it does the rounds (…) it goes through the GM's (…) all GM's are trying to get sign-off (…) if you've got the site GM's lined up everything's sweet (…) the GM – Process Improvement (…) he's a filter for all of the strategic projects as part of the annual planning process"*

> *"…so really the purpose of EXCO is it's more of a rubber stamp by the time it gets there…"*

These comments show that prior to getting to EXCO for consideration, Process Owners and other Senior Managers negotiate for the process projects that EXCO considers.

As with other areas of BPM, the impact of the increasing role of Company P was evident in the area of decision-making. For example, one participant indicated that:

> *"…it used to be a lot clearer. Company P has muddied the waters a substantial bit, especially on the Purchase to Pay side. We used to have a structure and there was a decision made at the GM level, what the strategic direction was and which are the improvement projects and then we filtered that up and down via consultation…"*

This highlights the potential for BPM capabilities and decision making within Company M to become sub-optimal, for improving the performance of Company M, due to involvement and competing priorities of Company P.

Process Roles and Responsibilities (2.58)

For the area *Process Roles and Responsibilities,* the Researcher explored the process roles Company M defined, the assignment of people to these roles, the visibility of process roles, evidence of a process career-paths and the treatment

of process and functional responsibilities.

Company M had identified and assigned a number of process roles within the organisation. This included a General Manager – Process Improvement, and Business Improvement Managers, together with Process Custodians for each of the seven core processes. Process Custodians had a dual role, originally being General Managers of functional areas such as Sales and Marketing. The assignment of the Process Custodian was in addition to the General Manager role. In addition, Company M implemented process roles and responsibilities in conjunction with process improvement methods. For example, existing roles and responsibilities extended to capture Six Sigma roles as shown in Figure 90.

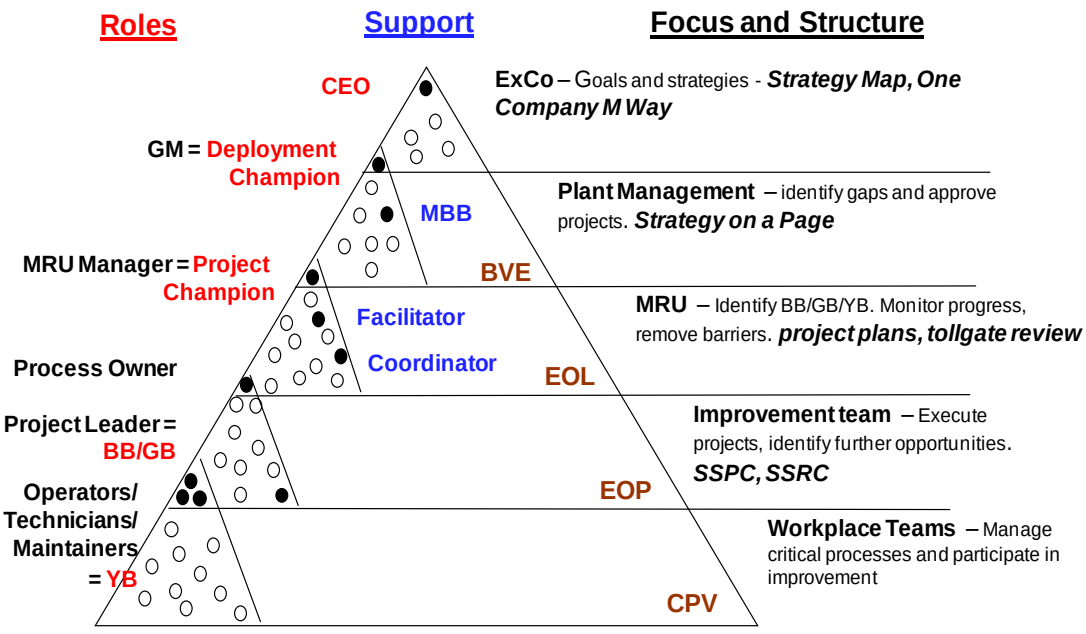

Figure 90: Linking Roles and Six Sigma

Figure 90 provides an example of how Company M integrated process roles and responsibilities with the traditional functional roles at different levels within the organisation. At the lowest level of the organisation, people within workplace teams such as technicians and operators trained to become Six Sigma yellow belts (YB) and participants within the process improvement teams and project leaders trained to the level of green belt (GB) and black belt (BB). A Master Black Belts (MBB) was at higher levels of the organisation being in a position such as a Plant Manager.

Despite the recognition of a number of process roles, according to workshop participants there was a lack of clarity evident in the assignment and acceptance of these. For example, a participant stated:

> *"…if you went out to some of the safety specialists and said who's the business process owner for safety, you'd get varying theories (…) people have got the idea of business process owners but we're not very good yet at clearly defining them, giving them accountabilities and making sure that accountability is well communicated across the organisation…"*

However, the importance of defining and assigning process roles and responsibilities was evident in comments including:

> *"...BPM roles have to be formalised. Roles, responsibilities and authorities, and process ownership must be clear..."*

Process Metrics and Performance Linkage (2.82)

For *Process Metrics and Performance Linkage*, the Researcher explored how Company M linked performance to the achievement of process metrics. In this regard, Company M had some linkage with external customers but not internally. This was evident in comments such as:

> *"...we've got service level agreements with our external customers but internally we don't do it…"*

There was further evidence that internally, Company M had not actively progressed individual performance with process metrics, with participants stating:

> *"…the levers or the drivers or the way we reward people formally and informally aren't necessarily properly aligned with the commonality or within the business process management view…"*

> *"…the formal recognition of other things which are a bit more fuzzy like collaboration, knowledge sharing, process improvement (…) I don't think that we, at the individual level, reward people for that formally enough…"*

One participant within Company M indicated the potential difficulty in aligning operational performance with the broader notion of end-to-end processes, suggesting that:

> *"…the simple tension between operational and strategic, how we motivate people and how we recognise them for contributing to the big picture rather than just doing their job…"*

These comments highlight the tensions that can exist within organisations that can affect the progression of *BPM Initiatives*. On the one hand, there is the need to affect entities external to the organisation that impact performance. On the other, there is the need to review and potentially change the internal mechanisms within the organisation for linking performance and process metrics. For example, internally there are potential tensions between operational and strategic drivers whereby performance traditionally links to shorter-term and more direct operational performance, rather than the less direct or visible strategic performance. Furthermore, there are areas of individual performance that are difficult to capture and measure such as collaboration and knowledge sharing which present challenges to organisations.

Process Related Standards (2.58)

In exploring *Process Related Standards,* the Researcher considered the adoption of standards that affect processes and practices within the *BPM Initiative*. The historic need for legislative compliance meant that participants were familiar with the notion of standards and their relationship with processes. This reflected in comments such as:

> *"…things like common policies and procedures at a Company P level (…) they're another way of just talking about business process and what's expected (…) those from a compliance point of view (…) the code of conducts (…) the common expectations and behaviours…"*

Despite this, there was no requirement within Company M to develop standards to guide process activities. For example, when discussing whether there were standards established around process modelling methods, one participant indicated:

> *"…we're all going to model our process using a particular methodology (…) but if someone's got enough passion to drive it, they will (…) I could probably do it in my role if I really felt moved to do so, but I don't, I think that's probably a little black hole…"*

In this comment, the participant also highlighted the potential issues arising from relying on the willingness of individuals, that is that nobody has the willingness and consequently standards are not applied. A potential consequence of this is inconsistent application of practices stemming from a lack of standardisation. However, with regard to standardisation one participant indicated:

> *"…I guess there is some form of standardisation from the GM – Process Improvement (…) but we just don't have a standard…"*

This suggests that, at this time, Company M relies on individuals to ensure standardisation within practices rather than the use of standards to achieve this end. However, comments such as the reference to *"a little black hole"* suggest that participants do not see this situation as ideal, and that it is an area they need to progress.

Process Management Compliance (2.55)

For *Process Management Compliance*, the Researcher explored how Company M ensured performance, behaviours and actions were in accordance with agreed standards and governance structures.

In the main, existing forums such as Corporate Governance ensure that

Company M meets legislative requirements. For example, one participant stated:

> *"…legislatively compliant, typical compliance work eventually ends up at the Company M Audit Forum (…) part of Corporate Governance…"*

There was use of both internal and external audit for checking on the performance of processes, although from an internal perspective there is little audit of IT systems. This was evident in comments from participants including:

> *"…we do audits through an internal audit program with warning systems on a regular basis (…) there's not much IT stuff in this unfortunately… "*

> *"…external auditors come in and say this is not right, it's got to be fixed. There's no question …"*

There are internal surveys regarding employee satisfaction that provide direction to improvements, for example:

> *"…the employee survey, that's a formal process and it's going to have defined targets. Like we might want over 60% of employees totally satisfied in this area. Now where we're below that the divisions have to come up with a plan to move above the line, that's the standard…"*

However, the lack of standards in use means that the performance of individuals with regard to the *BPM Initiative* goes largely unchecked.

Methods

The maturity score for Methods, calculated from the Maturity Survey data, was 2.66. This was lower than the average maturity score for all factors within Company M of 2.89. The standard deviation within responses contributing to the Methods maturity score was 0.07 showing a low level of variance between responses. This represented the lowest standard deviation of all factors within Company M. Table 144 shows individual capability area scores that combine to give the overall factor score of 2.66.

Capability Area	Maturity Score
Process Design & Modelling	2.58
Process Implementation & Execution	2.65
Process Monitoring & Control	2.78
Process Improvement & Innovation	2.64
Process Program & Project Mgmt	2.65

Table 144: Maturity Scores for Capability Areas

The closeness of these scores is consistent with the view expressed earlier, that a part of the *BPM Initiative* was to equip people with the right tools and techniques to perform there jobs.

During the workshop, participants identified the methods used within each of the capability areas, together with the major opportunities and challenges they perceived in each of these areas. Table 145 provides a summary of this data.

***Design* and *Modelling* Processes**	**Opportunities and Challenges**
• Design for Six Sigma	• Long duration of processes • Not consistently seeing end-to-end processes • Understanding the underlying principles for use • Speed with which methods change • Engagement of users • Cost drivers
***Implementing* and *Executing* Processes**	**Opportunities and Challenges**
• Lean • Asset Management (some SAP some not) • ITIL / ITSMF • DuPont Safety	• None noted
***Monitoring* and *Controlling* Processes**	**Opportunities and Challenges**
• Six Sigma • Lean	• Trending • Redundant data

• Asset Management • Taproot (incident mgmt) • ITIL / ITSMF • In Control Then Capable • Apollo (root cause analysis) • NOSA (National Organisation of S.Africa) • ISO 14/18/19 • NATA (National Accreditation Technical Association) • WPR (Work Performance Reviews)	• Knowing what is important
***Improving* and *Innovating* Processes**	**Opportunities and Challenges**
• Six Sigma • Lean • Asset Management • Tap Root	• Communication of the tool boxes • Awareness of PM initiatives • Initiative overload • Sustainability • Reduction of complexity e.g. capacity release is now valued
***Managing* BPMI Programs and Projects**	**Opportunities and Challenges**
• Six Sigma • Prince2 • PMBOK • AIM Certification • ABEF • Frontline Leader Development Program • OLDP – Organisational Leader Development Program • BLDP – Business Leader Development Program • Strategic Planning Map (site plans, SOAP, process design trees)	• Resource usage • Sustainability • Right people matched with right skills • Training and education • Initiation • Recruitment in accordance with philosophy and work

Table 145: Summary of Existing Methods[126]

[126] Participants collaboratively developed this table during the Methods Workshop

The data in Table 145 shows that an organisation can adopt a range of methods in each of the capability areas. In a number of areas, the methods are recognised process-based methods such as Six Sigma for process improvement. However, in the area of Process Program and Project Management the methods tend to be more general and less process specific, including recognised project/program management methods such as Prince2 and PMBOK as well as leadership development methods. The methods identified also represent a mix of publicly available methods such as Six Sigma, Lean, PMBOK, ITIL, ISO and ABEF together with a number of proprietary methods such as Organisational and Business Leader Development Programs and In Control Then Capable.

The range of methods in use affects the measurement of maturity to the extent that measurement questions focus on the *attributes* and *purpose* of the methods rather than the *name* of the method.

An example of the intended complementary use of selected methods was evident in the communication of Six Sigma and Lean within Company M, an example of which is in Figure 91.

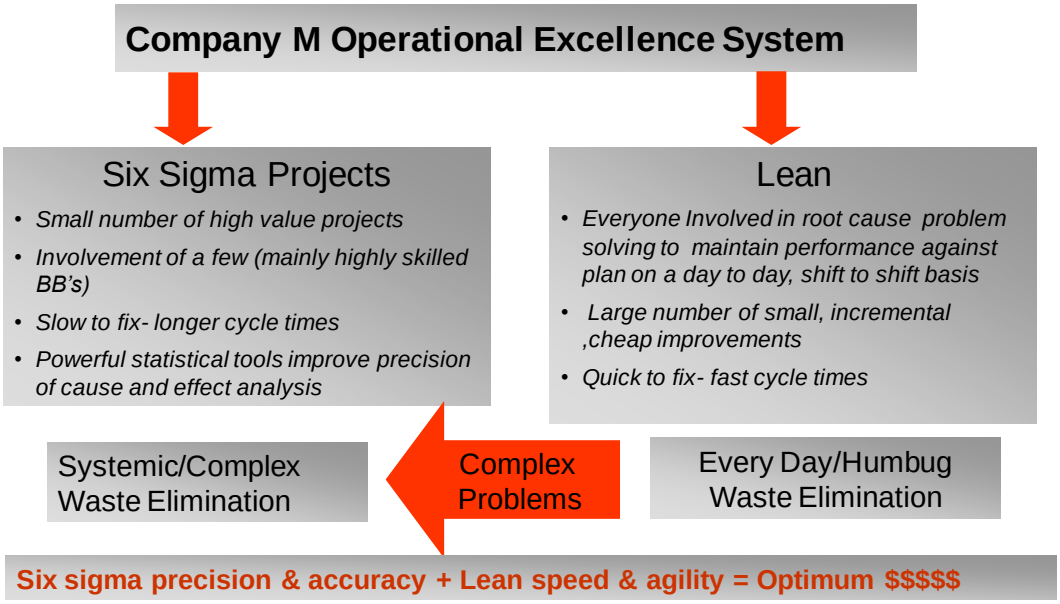

Figure 91: Linking Six Sigma and Lean

The challenges and opportunities for each of the capability areas, identified in Table 145, highlighted the human aspects of adopting methods. This reflected in issues such as resourcing, training, common process understanding, matching people and skills, recruitment and communication. Other key issues with methods related to the identification and use of data. This included knowing which data was important and knowing what to do with the data.

This highlights the potential for relationships between the capability areas across different factors. For example, the adoption of new methods in a given capability area may result in a corresponding increase in training and education and/or skills and expertise.

Company M had learnt a number of lessons with respect to selecting and using methods within its *BPM Initiative* as shown in Table 146.

Lessons Learned	Supporting Statements from Interviews and Workshops
Avoid the fads	...the market is always re-branding improvement opportunities e.g. Six Sigma, TQM, Lean... ...need to be sure that initiatives aren't simply the latest fad...
Use tools and techniques appropriately	...different techniques are required to solve different problems...

Table 146: Methods – Lessons Learned

These comments highlight the need to provide people with a range of methods to meet varying needs and to be conscious of market promotion when selecting methods. Furthermore, some participants indicated a need to shift the focus of past efforts onto less progressed areas:

> *"…bring the disparate groups onto common approaches and methodologies..."*

Information Technology

The maturity score for Information Technology, calculated from the Maturity Survey data, was 2.43. This was lower than the average maturity score for all factors within Company M of 2.89. The standard deviation within responses contributing to the Information Technology maturity score was 0.4 showing a low level of variance between responses. This represented one of the higher standard deviations of all factors within Company M, with only People and Culture (both with 0.6), being higher. Table 147 shows individual capability area scores that combine to give the overall factor score.

Capability Area	Maturity Score
Process Design & Modelling	2.34
Process Implementation & Execution	2.72
Process Monitoring & Control	2.33
Process Improvement & Innovation	1.89
Process Program & Project Mgmt	2.86

Table 147: Maturity Scores for Information Technology Capability Areas

This table reflects the range in scores from 1.89 to 2.86, suggesting a marked difference in the maturity of technology within the various capability areas.

The use of technology in the execution of many processes and in managing projects/programs, reflected in these two areas receiving higher scores. The use of technology in process improvement and innovation was the lowest of all areas with only limited use of IT recognised.

During the workshop, participants identified the information technology used within each of the capability areas, together with the major opportunities and challenges they perceived in each of these areas. Table 148 provides a summary of this data.

***Design* and *Modelling* Processes**	**Opportunities and Challenges**
• MS-Visio • MS-Excel • MS-Access • MS-SQL • MS-Powerpoint • Mini-tab (Six Sigma) • Mine Planning (Town C) • Simulation Model (Product B) **[#]** • Performance Driver Tree Models (80% capacity and financial, 20% capability)	• Widespread use/access making it difficult to manage application • Control over model versions • Accuracy of modelling (in excel) • Fragmented and ad hoc approach to modelling • Poor visibility of models • Knowledge still resides within individuals
***Implementing* and *Executing* Processes**	**Opportunities and Challenges**
• Fuel Management **[*]** • Metpro **[* !]** • SAP (commercial is workflowed) **[# ^]** • Documentum **[#]** • Ship Scheduling • LMS (Learning Management System) **[^]** • EBI (Enterprise Building, security monitoring, gate keeping, linked to SAP ID's, stats for safety) **[!]** • EMS (Environment Manager System (linked to everything) **[* !]** • B2B suites (custom interfaces, customer / supplier, invoice scanning – workflowed) **[*]** • CRM (Client Relationship Management)– SAP integrated **[^]**	• More integration with a view to rationalisation (B2B area) • Need to remove manual intervention • Integration between sites is required • Too much interfacing • Not all on same version (e.g. sites have different versions of EBI and Documentum) • Company P integration (e.g. EMS)
***Monitoring* and *Controlling* Processes**	**Opportunities and Challenges**
• Compass (Product A shuts down if controls are breached, Product B – no signal easy determinant) **[* = !]** • SCADA systems (Supervisory Control and Data Acquisition) • PIMS (Plant / production Information Management System) **[=]** • LIMS (Laboratory Information Management System) **[=]** • Business Warehouse **[^]**	• Interface between gathering data and reporting (production and SAP) • Standard tool-set for data extraction and manipulation • Simplification • Consistency • Standardisation of controls

***Improving* and *Innovating* Processes**	**Opportunities and Challenges**
• MS-Visio (process mapping) • Mini-tab (Six Sigma) • Simulation Model (CAR) **[#]** • Tap Root **[!]** • OEE (Overall Equipment Effectiveness)	• Integration with execution IT e.g. SAP • Data mining
***Managing* Process Projects and Programs**	**Opportunities and Challenges**
• Project Centre (OPCP–Six Sigma) **[* !]** • Documentum (Next version workflowed) **[# ^]** • Intranet (document & information mgmt) **[*]** • Change Recording (to capture change management documents, not mandatory, workflowed) **[* !]** • Open View Service Desk (IT – collects stats) **[^]** • Drawing Register (Town C – every site has one, drawings of plants, electrical and mechanical) • MS-Project • Primevera (building refinery) • Estimation tools	• Data mining • Standardisation across Company M e.g. intranet • Change recording • Document management standardisation
Legend:	
*****	Internal Company M
!	One Company M Initiative
=	Internal Alert
^	Company P Corporate
#	Heavily customised/configured

Table 148: Existing Information Technology

The data in Table 148 shows that an organisation can adopt a range of information technology in each of the capability areas. Within Company M, there was little use of recognised process-based technology such as the use of process modelling software in the design and modelling of processes. Rather there was use of generic diagram drawing software such as MS-Visio. Furthermore, the use of MS-Excel, MS-Access and MS-SQL in modelling

processes highlighted the need to consider different purposes of modelling, and the difficulties arising from the use of terminology. For example, within Company M, historically there was a need for *financial* modelling of processes, hence the use of databases and complex spreadsheets for manipulating and modelling process data.

The range of technology in use, and its categorisation using the legend, highlighted the use of both proprietary software and commercially available software in a number of areas, but particularly in the execution of processes. The major issue arising from the different applications in use was the integration of process data across systems, often involving manual intervention and a range of interfaces between systems.

People

The maturity score for People, calculated from the Maturity Survey data, was 3.32. This was the highest of all maturity scores for Company M. The standard deviation within responses contributing to the People maturity score was 0.6 showing a low level of variance between responses. Table 149 shows individual capability area scores that combine to give the overall factor score.

Capability Area	Maturity Score
Process Skills and Expertise	3.29
Process Management Knowledge	3.22
Process Education and Training	2.47
Process Collaboration and Communication	4.06
Process Leaders	3.58

Table 149: Maturity Scores for People Capability Areas

Table 149 reflects capability maturity scores ranging from 2.47 to 4.06, suggesting a marked difference in the progression of the capability areas.

This highlights the potential for a lack of high correlation between measures of capability areas within a given factor.

This is important to the development of a theoretical measurement model for BPM Maturity as it brings into question the suitability of reflective measures that require high levels of correlation between measures.

Process Skills and Expertise (3.29)

Within Process Skills and Expertise, the Researcher explored how Company M identified and management process skills and expertise. This included how Company M captured **available** skills and expertise, how they matched those required and how they managed any imbalance.

When discussing the identification and mapping of process skills and expertise within Company M, participants indicated:

> *"…our competency development system is about individual or organisational development. What you need to do, how you're going, what gaps have you got, where can we take you, what do you want to do, where do you want to go, what do you want to see (…) against the organisational requirement…"*

> *"…what is it that key roles need in order to be competent (…) there is a significant process that's been followed, both using internal and external resources – Duke University, Harvard, Princeton, Curtin University in Australia for asset management. They are using educational psychologists and then working with experts within the group and then doing benchmarking against world best practices organisations, GE, Shell and so on…"*

The competency program was not specific to process competency, also including functional competency. However, the development of the competency program, and the inclusion of process competencies, showed that Company M (and Company P) was committed to the identification and management of process skills and expertise. This was evident in comments such as:

> *"…we are looking at people understand our business models, our business improvement models such as Six Sigma and Lean, understanding our strategic vision, understanding the key result areas, the pillars and where they fit…"*

Furthermore, participants discussed the potential for integrating resource capability with other aspects of business. For example, participants indicated:

> *"…over the next 5 years we'll be implementing the business solution which is based on the SAP, enterprise resource platform (…) Company P are looking at developing it as a whole of business cycle system as opposed to just an accounting system or a production management or a learning management system…"*

> *"…via a common port (…) to do knowledge management work, identify the processes and then store all that data and then use that data objects multiple times in multiple different areas to derive benefit, capacity planning, workforce planning, skills development, individual development…"*

These comments reflect the integrative role of processes throughout the business and the need to identify, build and align process skills and expertise.

Process Management Knowledge (3.22)

In the area of Process Management Knowledge, the Researcher explored how Company M used and built knowledge about the *BPM Initiative* within the organisation. In discussing the benefits of developing process-based knowledge, participants stated:

"…it's aligning the way that we do work so that if we want to move this manager to this organisation they don't spend the first six months trying to figure out how to order (…) they can walk in and they've got general familiarity…"

"…you don't have to retrain and relearn and so the portability of staff and the portability of knowledge becomes that much greater…"

This suggests that a key benefit for building this knowledge was the increased effectiveness of staff that transferred to different locations within the business. Participants also acknowledged the benefit of retaining process management knowledge stemming from the increased integration of BPM across the wider Company P group.

When discussing how individuals built knowledge of BPM within the organisation, participants credited process improvement methods such as Six Sigma with increasing BPM knowledge, indicating

"…there's probably a good understanding of process management at crew leader level, previously it would've been at superintendent level so I think Six Sigma has pushed that down…"

"…knowledge of process management initiatives would be varied across MRU's (…) I think the driver of that would be the number of projects that have gone on in those particular MRU's…"

This suggest that direct involvement in process projects will lead to higher levels of BPM knowledge that through other tacit means of knowledge acquisition. To this end, participants noted the difficulty in capturing and embedding tacit process management knowledge and experience. For example, participants indicated:

"…that is one of the issues at the higher levels, people probably stay in roles three to four years and then move on (…) it is very difficult to actually hand over that knowledge (…) reading through doesn't really explain why decisions were made (…) it doesn't give context (…) and a lot of things which relate to a decision aren't written down in the documentation anyway…"

"…we do capture in our systems the way we document and the process but we don't necessarily document the experience that we got from that. We're hoping that the people who interact with consultants in the project team pick up knowledge but it's not part of their task to say okay, you shall become the expert from this person..."

"…I don't think we capture it and embed it. We have it there for a fleeting moment and then it goes again…"

As seen earlier with the reliance on individuals for ensuring standardisation of practices, in deference to implementing standards, an inability to easily and successfully capture and transfer BPM knowledge raises the potential for such knowledge to remain within individuals.

Process Education and Training (2.47)

For the area of *Process Education and Training,* the Researcher explored the means by which people are able to gain and develop their required process related competencies and knowledge.

The importance of Process Education and Training was evident in comments including:

"...business process education is critical..."

"...communication and training is key..."

The lower level of maturity calculated for Process Education and Training may seem contradictory to earlier evidence of education and training occurring with

the introduction of process improvement methods such as Six Sigma and Lean. For example, Figure 106 shows the commitment to training staff within Six Sigma.

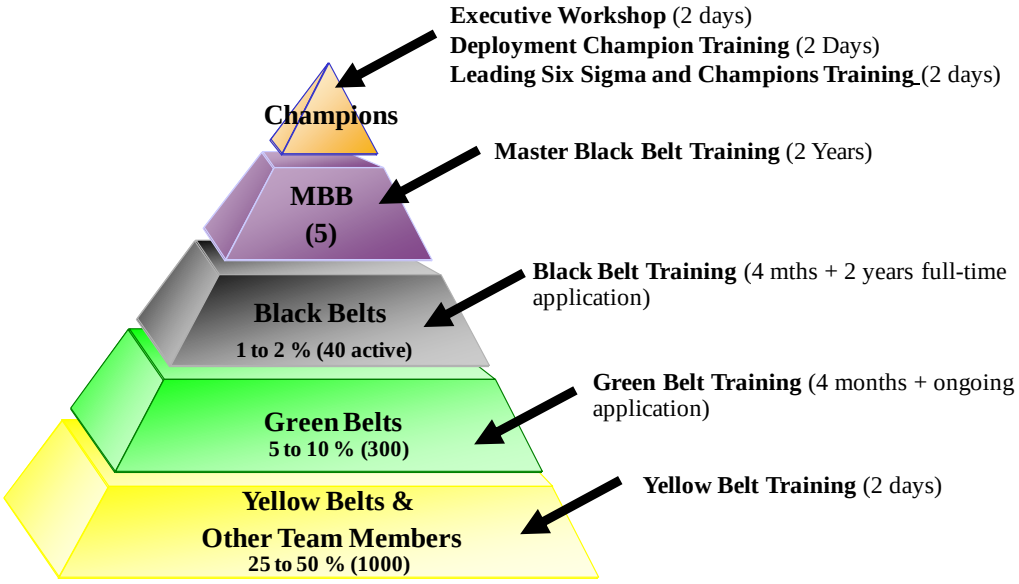

Figure 92: Training for Six Sigma

Figure 92 showed that training encompassed staff at all levels of the organisation and that formal training combined with on the job application in a co-ordinated program. However, the data also showed that whilst Company M had focused on aspects of education and training (such as training in Methods) some areas of training and education were lacking. For example, participants commented:

> *"…where we are historically very poor is in sustaining that change over time (…) if somebody comes into a position that the system will detect that they haven't done certain training or they haven't brought with them qualification that have been identified…"*

> *"…we are really good at implementing so that went really well (…) but of course for anyone new to the organisation never got that sort of overview (…) they just come into a role and you need to start doing this, without getting the overall picture of things…"*

These comments highlighted the importance of ensuring an on-going commitment and attention to training as people enter the organisation or move around the organisation. Furthermore, some comments reflected the need to ensure people were educated about the entire process. For example, participants indicated:

> *"…soon we are going to be One-Company P (…) that is going to be the real challenge and then understanding what their part is in that overall process and how they play an important part in that areas has a know on effect, upstream and downstream of where they are…"*

> *"…not just system training, but the way an end-to-end process is rolled out across the business in a common way..."*

> *"...leadership must understand end-to-end process to provide appropriate guidance..."*

Thus, for Company M educating about the use of tools or methods are only a part of what is necessary for their *BPM Initiative*. These comments highlighted the importance of educating people about the bigger picture so that they could understand how their role contributed to the entire process. Furthermore, they showed the necessity to educate at both the operational and the leadership level.

Process Collaboration and Communication (4.06)

In the area of *Process Collaboration and Communication,* the Researcher considered how people collaborate ***within*** and ***across*** processes. This includes the ability to access information about other key processes or other components of a key process and the way people worked together to resolve issues that affect processes.

The importance of collaboration to the *BPM Initiative* was evident in the introduction and progression of the One-Company M concept and comments including:

> *"...collaboration to see the 'One-Company M' benefits..."*

This showed that collaboration played a key role in overcoming regional segregation and in increasing consistency across the sites.

The continuing importance of collaboration was evident when discussing the increasing role of Company P in the *BPM Initiative*. Here participants indicated:

> *"…Company P will be driving (…) collaborative forums to be much more knowledge sharing amongst like groups…"*

This highlighted the continuing role of collaboration in the extension of BPM concepts within Company P, and consequently, within Company M.

Process Leaders (3.58)

In exploring *Process Management Leaders,* the Researcher considered the approach taken to recognising and advancing process management leaders. In discussing how Company M identified process leaders participants indicated that:

> *"…there's no formal process in the system to identify process leaders (…) there are no triggers…"*

Participants indicated there was an informal approach to letting process leaders evolve in line with further definition occurring around processes. For example one participant indicated:

> *"…business process leaders will start to evolve within that speciality (…) I don't know of a particular strategic move to do that…"*

The consequence of not formalising what is required in process leaders was evident when discussing the expectations of individuals seen to be process leaders. For example, one participant indicated:

> *"…in some areas we don't clearly define it for people but we expect it of them (…) they tend to work it out (…) sometimes quite quickly, sometimes quite painfully…"*

During the workshop, participants recognised a range of skills and attributes considered desirable in Process Leaders. The Researcher has grouped these

into *People skills* that include the ability to encourage collaboration and manage change, *process skills* encompass technical ability and understanding of end-to-end process consequences, *problem-solving skills* capture the ability to think creatively and innovatively whilst *personal attributes,* reflect elements such as being thick-skinned and having high energy levels as detailed in Table 150.

Attributes	Supporting Statements
People skills	…they've got to have a good understanding (…) that it's not a silo, it's across stream where you can't be in your own silo and that's something that's been hard for Company M to get over …good change agents …leadership skills, communication skills (…) people skills side of it is probably more important than the purely technical side of whatever the process is …dynamic, willing to change, willing to drive changes (…) probably people focused, not driven so much by status …leadership skills …good negotiation/influencing skills …communication skills, interpersonal skills, negotiation skills …good interpersonal skills and the ability to lead process improvement teams
Process skills	…a pretty good understanding of end-to-end impacts, upstream and downstream of their process …some technical knowledge of the processes they're involved in, some levels of commercial acumen …good process knowledge …process experience …technical knowledge of the process
Problem-solving skills	…they need to be able to think outside the box so that they look at opportunities, not the way we've been doing it for the last thirty years …logic …good analytic skills
Personal Attributes	…thick skinned …someone who makes sure the controls work and work properly …tenacity and energy to drive the goal

Table 150: Desirable Attributes of Process Leaders

Culture

The maturity score for *Culture*, calculated from the Maturity Survey data, was 3.15. Next to *People*, this was the highest maturity scores for Company M. Similarly, as with *People* the standard deviation within responses contributing to the *Culture* maturity score was 0.6 showing a low level of variance between responses. However, this represented the highest standard deviations of all factors within Company M. Table 151 shows individual capability area scores that combine to give the overall factor score.

Capability Area	Maturity Score
Responsiveness to Process Change	3.38
Process Values and Beliefs	3.42
Process Attitudes and Behaviours	2.88
Leadership Attention to Process	3.79
Process Management Social Networks	2.29

Table 151: Maturity Scores for People Capability Areas

This table reflects capability maturity scores ranging from 2.29 to 3.79, suggesting a marked difference between the capability areas.

Responsiveness to Process Change (3.38)

For the area *Responsiveness to Process Change,* the Researcher considered how individuals respond to process change and how individuals contribute to the identification and instigation of process change. In this regard, participants felt that, through the adoption of improvement methodologies, Company M supported individuals in showing initiative, stating that:

> *"…if you come up with a reasonable idea, and it's well thought through, it potentially will get up (…) Six Sigma's driven that and Lean will probably make us a little bit tighter but Lean is only new and it's certainly not something that's embedded right across the organisation (…) I don't think we've got a Lean view just yet…"*

Comments such as this highlight the long-term nature of achieving benefits and embedding practices, in this case embedding the use of methods in the mindsets of individuals.

With regard to how people respond to process change, participants indicated that, providing individuals could see the benefit of the change, they would generally be positive. For example, participants stated:

> *"…they're used to the process of change and people are very accepting of it as long as it seems to be improving their life…"*

> *"…people seem to be very used to change and happy with change…"*

The constant state of flux created by continual process change was something participants saw as becoming a potential issue, stating:

> *"…the challenge is in how quickly you change because (…) when you're in a constant state of change you are not embedding the value…"*

> *"…they just don't know which way is up at the present time (…) and obviously that's going to have major impact on business…"*

In discussing the increasing role of Company P with respect to instigating process change within Company M, participants provided mixed feedback. On the one hand, one participant indicated resistance was likely stating:

> *"…there'll be some resistance to that, there already has been but (…) the decision's been made and we've got to work through that with the best mechanism, but there's a lot of change management in that…"*

On the other hand, another participant indicated that a positive response was more likely to be forthcoming, stating:

> *"…if there's less change people will be fairly happy, because there has been a lot of change over the last few years but I think even if the change is coming from Company P, as long as they're kept informed and brought along from the very start of the process I think it will go quite smoothly…"*

These statements show that individuals are more likely to be positive about change if they understand and can see benefit in the consequence of change. Furthermore, the comments highlight the importance of communicating the rational for change and for engaging individuals in the acceptance and promotion of process change. However, the comments from participants also indicate a need to monitor the pace of change and to allow time for embedding benefits and the potential for conflict and negative reaction when too much change happens within a relatively short period.

Process Values and Beliefs (3.42)

Within the area *Process Values and Beliefs,* the Researcher considered the commitment, integration and articulation of BPM values within Company M. This included consideration of corporate communications such as vision and mission statements, annual reports, internal presentations and articles in the press

In discussing the organisations values and beliefs with regard to BPM, there was a strong sense that the senior executives within Company M actively promoted the values through the organisation. For example, participants stated:

> *"…well it started with the then CEO (…) he had a relatively new executive committee and so there was work done around vision and core purpose with the EXCO and then that got cascaded to the general managers…"*

According to participants, this commitment reflected in the external corporate identity, through changes in the logo, and in the awareness of individuals of EXCO and their role. One participant stated:

"…number one is that everyone was aware of the EXCO so from a top down perspective that was huge, hey we are One-Company M (…) we've even changed the logo to read One-Company M …"

The role of BPM was also clearly visible in the diagram depicting the vision, an extract of which is in Figure 93.

Figure 93: Linking Company M Vision with Key BPM Concepts

Participants indicated that the role of this depiction, and its use in Company M was to show how the different concepts tied together. For example, participants indicated:

"…what we're doing is we look at the (…) vision and all the rest of it and how we all try to work within that, and quite often the vision part, people don't necessarily believe them or whatever but what we're trying to do here in the organisation is actually tie what we do to that and keep tying it back all the time…"

"…it's not all that much new here but (…) what this did was actually put it into a structure and a framework that people could all of a sudden, oh shit that's our things, all the different things that we're doing, that's how it fits together to help us reach the vision and core purpose..."

Despite this articulation of the BPM concept in the vision, some participants indicated that there was potentially a lack of clarity in the detail around this. For example, participants stated:

"…there isn't this blueprint that's been printed (…) thou shalt do such and such…"

"…I don't think we have that, like you probably gathered from our questions about what BPM is, I haven't seen Company M formalise a concept of it…"

These comments indicate that a visible connection between the *BPM Initiative* and the vision of the organisation is important to promoting the role of the Initiative within the organisation. The comments show the value in doing so lies in the ability to relate progress back to the vision and to show how the big picture comes together.

Process Attitudes and Behaviours (2.88)

In the area of *Process Attitudes and Behaviours*, the Researcher considered the role of attitudes and behaviours of individuals in supporting the *BPM Initiative*. In discussing issues that were critical to progressing BPM, participants indicated the need to focus on individual attitudes and behaviours, stating:

"...managing change in people's attitudes and perceptions..."

"...cultural aspects and transition support is essential..."

Participants highlighted the role of communication in influencing BPM attitudes and behaviours and achieving buy-in from individuals stating:

"…people are still in that state of flux they don't know what's going on and it comes down to just how much communication they've had in each of those areas too…"

"…it probably comes down to the communication and the buy-in up front. I think if they feel part of the processes it will go very well and very smoothly. If it's done leaving them in isolation then like most places it will get a fairly bumpy ride…"

The potential for attitudes and behaviours to affect the *BPM Initiative* moving forward was evident when discussing the increasing role of Company P. Participants stated:

"…each site can control what they do, and that's kind of going down to that level, the individual is, you've got the tools well go and use them and go and improve (…) at the lower level people still get the ability to look at how can they improve their non SAP processes (…) as long as they don't lose that it will get enough support that the philosophy of openness and giving people the freedom…"

"…it'll be about enablers, down to behaviour, down to what's actually driving it, have we delivered those enablers or how have we had that behaviour, we've actually identified behavioural changes that need to happen (…) so has that behavioural change happened, are people aligned with where we want them to be aligned…"

"…the minute they can't find it they're going to go off and buy it somewhere else and they'll buy it direct charge and it won't be through our inventory (…) because the minute they hit the issue they'll go off and do it externally, or they'll put it on their credit card or they'll do something else and all of a sudden we're in chaos…"

Furthermore, some participants recognised the likelihood of a detrimental effect on attitudes and behaviours in the immediate time after a major process change. For example, one participant indicated:

"…my earlier comments on the valley of despair (…) it's about keeping us in the top of that and not letting us get down to the bottom because otherwise it's long haul out of it again…"

These comments show that communication plays an important role in changing the attitudes and behaviours of individuals. They also show that attitudes and behaviours are likely to ebb and flow with the impact of major change in the organisation so regular attention to these is important.

Leadership Attention to Process (2.88)

Within the area *Leadership Attention to Process*, the Researcher explored the role of senior management and executives in the promotion and support of the *BPM Initiative*.

Participants within Company M highlighted the importance of leadership attention to the progression and sustainability of BPM, stating that:

"...must be lead from the top and have buy-in across the whole organisation..."

"...senior management support and visible involvement is essential..."

"...senior leadership engagement/alignment is needed to drive change..."

"…if there wasn't a very visible engagement by the operating GM's and management, executive levels of the organisation, the long term viability of the initiative would be in jeopardy…"

Challenging the perception that lower levels of an organisation can instigate BPM within organisation, participants within Company M indicated:

"…the bottom up can create a bit of noise about it but unless you get that high level engagement then it just stays there as noise…"

Furthermore, participants indicated that the level of commitment from executive leadership affected the success of the Initiative even when there was

engagement of lower levels, stating:

> *"…it would be more difficult to do a bottom up approach without clear indication of the importance at the top end. We have a number of initiatives that we have seen not do well because it was evident that the top layers weren't engaged…"*

Participants indicated that this was primarily due to the inability of lower levels of the organisation to affect change in necessary areas. For example, participants indicated that:

> *"…because there are so many things that are across a business unit and across product groups and potential across Company P, until you've got that high level stakeholder engagement, who can say yes okay we're going to take it across those units, then it will only go so far…"*

> *"…resourcing, whether it be time or, a new org structure that needs to be put in place (…) if that commitment's not there at the top level then those things won't happen…"*

These comments indicate that whilst lower levels of the organisation can generate interest in BPM, it is the leadership attention and support that most affects the success of the initiative. To enable the organisational transition that goes hand in hand with implementing *BPM Initiatives*, people with authority and the ability to affect fundamental changes in the organisation are required to lead the initiative.

Process Social Networks (2.29)

For the area of *Process Management Social Networks,* the Researcher explored the extent to which Company M facilitated the use of process-related forums and networks.

Participants highlighted the role of process networks in comments including:

> *"…we've got a fair way to go yet (…) we're definitely getting better (…) over the last few years a lot more initiatives have brought groups together (…) people start thinking about how will we do it one way…"*

Furthermore, the need to maintain a focus on these and their importance to overall collaboration across disparate areas reflected in comments such as:

> *"...people have tended to go off into their silos a little bit more purely because those forums fell away a little and a few people changed positions and those sorts of things that go on and that sustainability model just wasn't quite there..."*

This indicated that the role of process networks was important, acting to overcome barriers and contribute to a standardised approach to conducting business. However, without consistent attention during the formative period, there was no assurance of sustainability.

13.3.2 Information Sheet and Informed Consent

Information Sheet

Chief Investigators:	Tonia de Bruin	Michael Rosemann
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Project Description

QUT researchers have recognised that business process management (BPM) is emerging as an important management practice, providing organisations with a means of increasing competitiveness and sustainability in times of market uncertainty, increasing globalisation and constantly changing business conditions.

Investigation undertaken by QUT researchers from July 2003 until now has confirmed that, despite the potential benefits to be gained, there are relatively few organisations that have been able to successfully implement comprehensive BPM practices. A number of studies have highlighted anomalies in the meaning and application of BPM. These studies have also identified factors critical to the success of BPM practices together with barriers to successful implementation of such practices. These studies however provide little context for BPM application or assistance to organisations in understanding how to progress with BPM implementation and improvement.

QUT researchers are working to develop a generic BPM Maturity (BPMM) model that can be used as a tool within a comprehensive BPM toolkit. The BPMM model will enable the diagnosis of current BPM maturity stages and the development and targeting of BPM strategies based on the relative strengths and

weaknesses identified. This will enable organisations to improve their BPM activities and their ability to attain BPM benefits.

About this phase of the study:

QUT has approached Company M with a view to advancing research on the BPMM model that has been developed. In particular, the researchers see working with an industry partner as an opportunity to:

- Assess the BPMM model with regard to its significance and usefulness to organisations that are practicing BPM;
- Conduct in-depth interviews with industry practitioners in order to gain a deeper understanding of the Factors selected for use within the model (i.e. Strategic Alignment, Governance, Methods, Information Technology, People and Culture);
- Conduct workshops and survey assessments to assess the validity of questions contained within the BPMM model's assessment surveys for assessing BPM capability areas; and
- Ensure that the model has a strong practical basis that will provide benefit to industry practitioners and improve BPM practices both within Australia and internationally.

The structure of this partnership will include 7 distinct phases including:

- Initial meeting and planning session
- One-on-one interviews with nominated Executives
- Workshops and BPM Operational Planning survey with nominated key BPM personnel
- On-line BPM Operational Practice survey with nominated employees
- Final presentation
- Written report
- Feedback survey on the assessment process

In the initial stages of this case study, Company M will nominate a specific 'unit of analysis' for which the BPMM model assessment will be undertaken. Participants for the various stages of the assessment will be nominated by Company M management at the commencement of the study. Participants will be contacted regarding their participation in the manner agreed between the Chief Investigators and Company M at the initial planning session. The study will be undertaken on Company M's premises where facilities will be made available in a manner agreed between the Chief Investigators and Company M at the initial planning session.

The **one-on-one interviews** will be conducted with Company M executives to gain an understanding of the strategic intent with respect to BPM practices. These sessions will focus on the 6 factors included in the model and are expected to take approximately 1.5 hours each. Each interview will involve a Chief Investigator and a nominated Company M executive. The number of interviews conducted will be dependent upon the number of executives nominated by Company M. The aim of the interviews is to gain an in-depth understanding of what Company M is doing (or planning to do) in each of the 6 factor areas. Participants will be provided with a Case Study Worksheet approximately one week prior to each session to enable preparation for the session. All interviews will be recorded and later transcribed for analysis purposes. Transcriptions will be provided to Company M for confirmation of accuracy prior to finalising analysis. Following analysis, tapes will either be returned to Company M or destroyed (as preferred by Company M). Transcriptions will be retained by the Chief Investigators until such time as they are no longer required for the research being conducted at which time they will either be returned to Company M or destroyed (as preferred by Company M). The major outcomes from these interviews will be a comprehensive understanding of the intended BPM principles and desired BPM practices as perceived at a strategic level.

The **workshop sessions** will be conducted with selected groups of Company M's key BPM personnel. Each workshop will focus on a specific factor and the 5 capability areas identified within this factor. Each workshop will include a small number of 'expert' participants nominated by Company M together with a Chief Investigator who will facilitate the workshop sessions. Each workshop will be approximately 3 hours in duration and will be conducted in two sessions. The first

session will run for approximately two hours and will utilise the same questions asked during the executive interviews. The second session will run for approximately 1 hour and will include the completion of a BPM Operational Planning survey. A second representative from QUT who has been involved in the development of the BPMM maturity assessment instrument and database is also likely to be present at the second session within each workshop. All workshops will be recorded and later transcribed for analysis purposes. Transcriptions will be provided to Company M for confirmation of accuracy prior to finalising analysis. Following analysis, tapes will either be returned to Company M or destroyed (as preferred by Company M). Transcriptions will be retained by the Chief Investigators until such time as they are no longer required for the research being conducted at which time they will either be returned to Company M or destroyed (as preferred by Company M). Results from the survey will be stored in a database created by QUT for the purpose of undertaking the BPMM assessments. Results will retained within this database until such time as they are no longer required for the research being conducted, or until such other time as agreed between the Chief Investigators and Company M. The major outcomes from the workshops will be a comprehensive understanding of BPM principles and practices from an operational planning perspective including a deeper understanding of the operational planning for the capability areas identified for each of the factors.

The **on-line surveys** will be undertaken by staff within the 'unit of analysis' for which the BPMM assessment is to be conducted. Participants will be provided with access to a survey contained within a secure environment. They will gain access using a user-name and password provided by the Chief Investigators. The aim of this survey is to assess the actual BPM practices and perceptions within the unit of analysis. Results from the survey will be stored in a database created by QUT for the purpose of undertaking the BPMM assessments. Results will retained within this database until such time as they are no longer required for the research being conducted, or until such other time as agreed between the Chief Investigators and Company M. The major outcomes from these surveys will be a comprehensive understanding of BPM principles and practices as perceived by staff at an operational level including a deeper understanding of the operational application of the capability areas identified for each of the factors.

The **final feedback survey** will be undertaken by the Chief Investigators in conjunction with the Company M representative/s that are sponsoring the case study. The aim of this survey is for the Chief Investigators to receive feedback on the conduct of the assessment in order to improve this process. This assessment will not be undertaken until all presentations and reports are completed and provided to Company M.

Expected Benefits and Risks

Participation in this study is expected to provide Company M with an in-depth assessment of their current BPM maturity and the Chief Investigators with a rich source of data for use in further developing the BPMM Model. Company M will receive first hand results of the study whilst their representatives will receive exposure to current BPM research and information. The outcomes from all sessions will be analysed and presented to Company M in a final presentation at a date agreed between the Chief Investigators and Company M. This presentation will include providing Company M with a maturity assessment for each of the factors and capability areas within the BPMM model based on the data gathered throughout the various assessment sessions. Following this presentation, Company M will receive a written report that provides further details of the assessment undertaken. There are no foreseen risks associated with Company M's representative's involvement in this study.

Audio Recording of Interviews

With Company M's permission, the Chief Investigators would like to audio record all interviews and workshops for improved data capture, transcription and analysis. Company M may not wish to grant permission to have the interviews and workshops with their representatives recorded. This will not impact on Company M's continuing participation in the project. If permission is granted for the use of audio recording, all audio files will be either destroyed or returned to Company M once they have been transcribed.

Confidentiality

All recordings, transcripts, documentation and other information and data gathered during the assessment will be kept strictly confidential. Documentation will be assigned a code for use in information management by the Chief Investigators. The identity of participants will be kept confidential and will be known only to the Chief Investigators. Furthermore, no-one outside the QUT research team will have access to the information provided by Company M representatives. In general, aggregated results will be reported. While, some individual responses may be reported, no individual will be identified with any of these responses unless explicitly agreed between the Chief Investigators and Company M. All publications arising from the case study will be approved by Company M prior to publication.

Voluntary Participation

Participation in this study is purely voluntary. Company M may wish to withdraw participation of their representatives at any time, without penalty or judgement.

Questions / further information

If a Company M representative would like to obtain additional information or has any queries they would like addressed, they can contact the research team:

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Concerns / complaints

If you have any concerns or complaints about the ethical conduct of the project you could contact the Research Ethics Officer on 3864 2340 or ethicscontact@qut.edu.au.

Feedback

Feedback to Company M will be in the form of results of the study provided in a presentation and report. Feedback to the Chief Investigators will be in the form of a Feedback assessment conducted with the Company M sponsors following the conduct of the final presentation and provision of the written report.

Thank-you Company M for your interest and support of this project.

Informed Consent Form

Chief Investigator: Tonia de Bruin (PHD Candidate, QUT)
Email: t.debruin@qut.edu.au

Chief Investigator: Michael Rosemann (Professor, QUT)
Email: m.rosemann@qut.edu.au

Statement of consent

By signing below, you are indicating that you (on-behalf of Company M):

- ❑ have read and understood the information sheet about this project;
- ❑ have had any questions satisfactorily answered;
- ❑ understand that any additional questions can be raised with research team at any point;
- ❑ understand that Company M is free to withdraw participation of its representatives at any time, without comment or penalty;

(Please tick only one)

- ❑ agree for Company M representatives to participate in the project.
    - ❑ And grant permission to audio record interviews
    - ❑ But, do not grant permission to audio record any interviews

Name

Signature

Position

Date / /

13.3.3 Interview Guide

Company M Logo Removed

Business Process Management Maturity Assessment Strategic Intent Interviews

Company M has commenced a project to assess Business Process Management within the organisation. The outcomes from this assessment will provide guidance to Company M for developing future Business Process Management strategies. This assessment is being conducted by researchers from the Business Process Management Group at Queensland University of Technology (QUT). The overall assessment is conducted from three discrete perspectives being: strategic intent, operational planning and operational practice. You have been nominated by Company M to participate in the strategic intent component of the overall assessment.

The strategic intent component is designed to evaluate the maturity of Company M's Business Process Management initiative based on the perceptions of senior management and executive level staff. The focus is on understanding why the Business Process Management practices have been developed in the manner in which they have. The assessment takes the form of one-on-one interviews which are expected to take approximately 2 hours. In total six interviews will be conducted with senior managers of Company M.

The interview itself is structured in three parts. First, there are a number of demographic questions. These questions are to assist us (the QUT researchers) in the analysis of data gathered during the survey. Second, there are a number of general explorative questions relating to the Business Process Management initiative within Company M. Finally, the remaining questions are separated into

six distinct sections each relating to a specific aspect considered critical to the success of business process management initiatives. The six aspects are considered specifically in the context of business process management and include: Strategic Alignment, Governance, Methods, Information Technology, People and Culture.

The assessment is undertaken in accordance with QUT's ethics requirements. Your confidentiality is assured at all times. At no time will responses be attributed to specific individuals without the explicit permission of the person involved. If you would like further information regarding the ethics arrangements that are in place for this assessment please contact Tonia de Bruin at t.debruin@qut.edu.au.

The following questions relate to the *Strategic Alignment* of Business Process Management. In this context, *Strategic Alignment* ensures the continual tight linkage of organisational priorities and processes critical to achieving business goals.

Question 1

From a strategic perspective, how and why are process improvement initiatives identified and prioritised within Company M? How is this expected to change as the Business Process Management initiative matures?

Question 2

Describe the existing relationship between process capabilities and strategy. How does Company M's strategy guide process-related objectives, and to what extent do process-related capabilities enable or constrain this strategy? What plans are in place for affecting this relationship and why?

Question 3

To what level have processes been defined within Company M? How are relationships and interfaces between processes and with other entities (e.g.

subsidiaries, parent company, suppliers, customers) incorporated? What has been the driver of defining processes within Company M? Are there any plans to extend the process-view of Company M and why?

Question 4

How is process-related performance captured, used and reported? How and why is this expected to change as the Business Process Management initiative matures?

Question 5

Who are the major Business Process Management stakeholders? What role does each of these stakeholder groups have? Are there other major stakeholders internal or external to Company M that are not included in this list? Why or why not?

Question 6

Do you think the present relationship between critical processes and strategy is an enabler or a constraint for the Business Process Management initiative and why?

The following questions relate to Business Process Management *Governance*. In this context, BPM *Governance* provides relevant and transparent accountability and decision-making processes together with reward and remuneration programs to guide actions.

Question 1

Within the broader Company M governance framework how is Business Process Management Governance positioned and what role does it play? How has BPM governance been structured and why was it done this way? What plans are in place for the further development of BPM Governance and why?

Question 2

Who is responsible for introducing and developing process-related roles within Company M? How are process-related roles and responsibilities assigned? What is their actual impact? How are these roles reflected in the organisational structure and individual career paths? What plans are in place for further development of process-related roles and responsibilities and why?

Question 3

How is process-related performance linked to organisational performance and strategic goals? Who is responsible for establishing and monitoring process-related metrics? How and why does process-related performance impact reward and remuneration programs? What plans are in place to further develop the linkage between process-related performance and strategy and why?

Question 4

What process-related standards are used? How are these standards selected? What plans are in place to change these and why?

Question 5

How is compliance with process-related standards governed? What are the drivers of compliance and why is this? What plans are in place to change this and why?

Question 6

Do you think the present governance framework is an enabler or a constraint for the Business Process Management initiative and why?

The following questions relate to the *methods* employed to manage processes throughout their lifecycle of: define, execute, monitor and improve; as well as to other methods used within the Business Process Management initiative, e.g. BPM training methods or methods used to deploy strategic objectives. Furthermore, in this context BPM methods are the approaches and techniques that support and enable consistent process-related actions and outcomes.

Question 1

What approach is taken to select process-related methods? Who has been the driver of past selection? How and why has this changed over time?

Question 2

What methods are currently used within the Business Process Management initiative? What plans are in place to change these and why?

Question 3

What facets of these methods are most important to the Business Process Management initiative and why? How and why has this changed over time?

Question 4

What facets of these methods are least important to the Business Process Management initiative and why? How and why has this changed over time?

Question 5

Do you think the current methods are an enabler or a constraint for the Business Process Management initiative and why? What is the overall level of satisfaction with the existing methods?

The following questions relate to the *information technology (IT*) employed to manage processes throughout their lifecycle of: define, execute, monitor and improve; as well as to other IT used within the Business Process Management initiative e.g. project management software or a process-management dash-board. Furthermore, in this context *Information Technology* is the software, hardware and information management systems that enable and support process activities.

Question 1

What approach is taken to select process-related IT? Who has been the driver of past selection? How and why has this changed over time?

Question 2

What IT is currently used within the Business Process Management initiative? What plans are in place to change this and why?

Question 3

What facets of this IT are most important to the Business Process Management initiative and why? How and why has this changed over time?

Question 4

What facets of this IT are least important to the Business Process Management initiative and why? How and why has this changed over time?

Question 5

Do you think the current IT is an enabler or a constraint for the Business Process Management initiative and why? What is the overall level of satisfaction with the existing process-related IT?

The following questions relate to the human resource element of Business Process Management. In this context, *People* are the individuals and groups who continually enhance and apply their process-related expertise and knowledge.

Question 1

Describe the current level of process skills and expertise that exist within Company M. What opportunities and challenges are presented by existing levels and why is this? What plans are in place to change these levels and why?

Question 2

Describe the current level of Business Process Management knowledge that exists within Company M. What opportunities and challenges are presented by existing levels and why? What plans are in place to change these levels and why?

Question 3

How are individuals supported in extending and updating their process-related skills, expertise and knowledge? Why has this approach been adopted? What plans are in place to change this and why?

Question 4

How do individuals collaborate on processes that cross functional boundaries? How is this supported by the communication of process management activities? What plans are in place to change this and why?

Question 5

What attributes are considered to be important in 'process leaders' and why? Within Company M do 'process leaders' equate to 'process owners' (or the equivalent)? If not, why not? What plans are in place to change this and why?

Question 6

Do you think existing process-related skills and knowledge is an enabler or a constraint for the Business Process Management initiative? Is this consistent with the 'official' view?

Question 7

Do you think communication and collaboration on process-related activities is an enabler or a constraint for the Business Process Management initiative?

The following questions relate to Company M's organisational culture and how this culture impacts and influences the Business Process Management initiative. In this context, *Culture* is the collective values and beliefs that shape process-related attitudes and behaviours.

Question 1

How would you describe the culture within Company M? How and why did Company M's culture influence the way in which the Business Process Management initiative was approached and implemented? How and why has the culture changed as the initiative has progressed?

Question 2

How and why does the existing culture impact on the Business Process Management initiative? What plans are in place for changing the existing culture and why?

Question 3

How is support for the Business Process Management initiative reflected in the overall corporate philosophy? How and why is this reflected in Company M's vision and mission? What plans are in place for changing this and why?

Question 4

What is the role of executive leadership within the Business Process Management initiative? What opportunities and challenges do you think the current executive leadership presents to the initiative? What plans are in place to address these and why?

Question 5

What social networks (formal or informal) influence the Business Process Management initiative? What plans are in place to change this and why?

Question 6

Do you think the present culture is an enabler or a constraint for the Business Process Management initiative and why?

13.3.4 Workshop Guide: Strategic Alignment

Company M Logo Removed

Business Process Management Maturity Assessment Operational Planning Workshops

Company M has commenced a project to assess Business Process Management within the organisation. The outcomes from this assessment will provide guidance to Company M when developing strategies, providing support and allocating resources to process-related activities. This assessment is being conducted by researchers from Business Process Management Research Group at Queensland University of Technology (QUT). The overall assessment is conducted from three discrete perspectives being: strategic intent, operational planning and operational practice. You have been nominated by Company M to participate in the *operational planning* component of the overall assessment.

The *operational planning* component of this assessment is designed to evaluate Company M's Business Process Management capabilities as perceived by staff with a high level of knowledge about the business process management activities that take place within Company M. The focus is on understanding *how* current and planned activities are conducted. The assessment takes the form of a ***workshop*****.** These workshops complement the interviews conducted in the strategic intent component and provide a basis for further assessing the operational practice of Business Process Management within Company M. Each workshop will be supplemented by the completion with a Business Process Management – Operational Planning survey by all participants.

In total six workshops will be conducted with each workshop relating to one aspect considered critical to the success of Business Process Management

initiatives (i.e. Strategic Alignment, BPM Governance, Methods, IT, People and Culture). Separate workshops have been established to ensure that the best people are included for each area. Each workshop will take approximately 3-4 hours and will include up to five people.

Each workshop is structured in three parts. First, there are a number of demographic questions. These questions are to assist us (the QUT researchers) in the analysis of data gathered during the survey. Second, there are a number of general explorative questions relating to the Business Process Management initiative within Company M. Finally, the remaining questions relate to the activities that occur within the specific aspect of Business Process Management being assessed i.e. Strategic Alignment, Governance, Methods, Information Technology, People or Culture.

The assessment is undertaken in accordance with QUT's ethics requirements. Your confidentiality is assured at all times. At no time will responses be attributed to specific individuals without the explicit permission of the person involved. If you would like further information regarding the ethics arrangements that are in place for this assessment please contact Tonia de Bruin at t.debruin@qut.edu.au.

Agenda

9.30 – 9.40	Introductions
9.40 – 10.00	Completion of General Questions Worksheet
10.00 – 10.25	Process Customers and Other Stakeholders
10.25 – 10.50	Strategy and Process Capability Linkage

10.50 – 11.15	Process Improvement Initiatives
11.15 – 11.40	Process Output Measurement
11.40 – 12.00	Process Architecture
12.00 – 12.15	BPM Maturity Survey
12.15 – 12.25	Consolidation of General Questions Worksheets
12.25 – 12.30	Wrap-up

The following questions relate to the *Strategic Alignment* of Business Process Management. In this context, *Strategic Alignment* ensures the continual tight linkage of organisational priorities and processes critical to achieving business goals.

Question 1

How are process improvement initiatives identified? How are these initiatives linked to the strategic goals of Company M? How are initiatives prioritised and co-ordinated?

Question 2

How do existing process capabilities influence Company M's strategies? Similarly, how do strategies influence processes? How are existing process

capabilities determined? How are required process capabilities determined? What happens when there is a difference between existing and required capabilities?

Question 3

What is the structure of Company M's current process architecture? How has this architecture been derived? To what level have processes been devolved? Is the identification of processes considered to be complete? Are relationships to processes of subsidiary or parent companies, supplier or partnering/outsourcing organisations known? How are processes and their relationships and interfaces documented?

Question 4

How are the data and information required for measuring process-related performance captured? What happens when actual performance does not meet expected performance? Does this vary dependent on the situation? What happens with the results of process-related performance?

Question 5

Who are the major Business Process Management stakeholders? Do these stakeholders vary between processes? How are the needs of various stakeholders identified and incorporated into processes? How is the stakeholder satisfaction with process-related performance measured?

Question 6

Are there any other important aspects of aligning strategy and processes that have not been discussed?

13.3.5 Background Survey

Demographics

Name:				
Age:		**Sex:**	M	F
How long have been employed by Company M?				
Which town/city do you work in?				
Which business unit do you work for?				
What is your current position?				
How long have you been in this position?				
What position did you hold prior to this?				
What level of business process management experience do you have?	Limited	Moderate	Extensive	
What level of education/training have you attained? ***(tick all applicable)***	Yr 12			
	TAFE			
	University			
	Apprenticeship			
	Professional			
	Other			

BPM Initiative

Question 1

What does Business Process Management mean within Company M? Is this meaning consistent with your views of Business Process Management? If not, how does your view differ?

Question 2

What are the major drivers of Business Process Management within Company M?

Question 3

Who is the sponsor of Business Process Management within Company M? Does this sponsor also have operational responsibility for Business Process Management?

Question 4

Describe the history and development of Business Process Management within Company M?

Question 5

Describe the current state-of-play of Business Process Management within Company M?

Question 6

What has been the most significant impact made by the Business Process Management initiative so far?

Question 7

What have been the major “lessons learned” on the Business Process Management journey thus far?

Question 8

If you could do things differently with respect to Business Process Management initiatives undertaken to date, what would you change?

Question 9

What are your expectations with respect to future Business Process Management initiatives within Company M?

Question 10

What are your expectations with respect to undertaking this Business Process Management Maturity assessment?

13.3.6 Background Survey: Governance Participants

Question 1

What does Business Process Management mean within Company M?

Participant 1: Governance of the overall business process including design, improvement and application of processes within systems

Participant 2: The management of core process within the business or RT service providers including process design, management and improvement.

Participant 3: Notification of what the Business Processes are: How do they 'operate'? Are they any good? What can we do to improve? The distinction for me RE: 'physical' VS business process

Question 2

What are the major drivers of Business Process Management within Company M?

Participant 1: Common way of doing work, "Learning organization"

Value add through efficiencies and cost reductions

	Physical processes ‘in control then capable’ Compliance and legislation
Participant 2:	Cost and safety performance driving a lean and effective business
Participant 3:	Current frustrations
	Implementation of new tools – Forces to look at underlying business processes

Question 3

Who is the sponsor of Business Process Management within Company M?

Participant 1:	CEO, through business process custodians identified with accountabilities and resources for executing BP through the business. GM business improvement has the overall view and ownership of the business solution.
Participant 2:	CEO via MD’s and GM’s
Participant 3:	Chief Information Officer

Question 4

Does this sponsor also have operational responsibility for Business Process Management?

Participant 1:	No, this varies. The Manage People, Purchase to Pay, Contact to Cash. Plan and Manage custodians have operational responsibility. The Manage Physical Assets, Health Safety and Environment and Manage Production aims are in support roles and need to work through the sites to operationalise BPM

Participant 2: Yes, the performance of the organisation is monitored via its processes

Participant 3: No HSE – M. Swyiepa

PTP – I. Lataa

HR – New Fella

Question 5

When did Company M commence adopting Business Process Management?

Participant 1: Early 90's

Participant 2: Unsure – stronger focus in last 4-5 years

Participant 3: 1997 – Smelting. PEP Driver

Question 6

What have been the major Business Process Management initiatives undertaken since that time?

Participant 1: First driven by SAP R/2 project then a number of business process mapping and improving initiatives through the nineties including: "PEP", Continuous Improvement, "In Control then Capable" in 2000 then Six Sigma, Lean 2004 – Company M Business Solution, including defined framework and visions articulated right across the business

Participant 2: Company M SAP program, Six Sigma and Lean programme are the tools and methodology used

Participant 3: Detailing B.P's. as part of MYSAP rollout – new tool was catalyst for the work. More holistically - PEP – APP – ICTC – 60 – LEAN

Question 7.

What has been the most significant impact Business Process Management has made so far?

Participant 1: Improvement in Safety Performance

Cost Reductions

Stability of physical processes

Culture of 'one Company M' and collaboration beginning to be embedded

Participant 2: Making some of the Company M personnel aware of the right processes and inter-relationships between process

Identify improvement points and risks and then providing action plans/improvement plans

Participant 3: Standardisation of process - common platform from which to improve across the business

---

Question 8.

What have been the major challenges faced on the Business Process Management journey thus far?

Participant 1: Tension between strategy and operational focus and cultural differences between operating sites, resourcing *BPM Initiatives*

Participant 2: Bringing a common understanding of process and practices and change management

Participant 3: Standardising and understanding importance at all levels in organization.

Question 9

What have been the major "lessons learned" on the Business Process Management journey thus far?

Participant 1: Cultural aspects and transition support essential – not just system training, but the way an end-to-end processes are rolled out across the business in a common way

Participant 2: Company M has a way to go as not all personnel are working from a common base

Participant 3: We execute B.P. differently (between smelters and between M&R smelting)

Question 10

What are your expectations with respect to future Business Process Management within Company M?

Participant 1: Clearly defined processes embedded, culturally that we move to a more collaborative model and velocity of change is increased.

Improved safety and business performance

Clarity around roles and that effectiveness of processes is measured

Participant 2: A common tool kit to apply across the business

Participant 3: Build on current documented processes:

More visible

Integrated with 'Other – Process – Management"

Standardisation across Company P (where possible / appropriate)

13.3.7 Changes to Maturity Survey Scales

Individual - Groups

Executives
Managers
Other Employees
Customers
Suppliers
Other Stakeholders

Individual - Scale

None or Hardly Any	Some	About Half	Quite a Lot	Most or All	Unknown

Process – Groups and Scale

- Process with inputs and outputs contained within the same work unit.

Processes with inputs coming from:

- another internal work unit
- a *related* external source
- an *unrelated* external source

Processes with outputs going to:

- another internal work unit
- a *related* external source
- an *unrelated* external source

13.3.8 Maturity Survey: Sample Screen Shots

Figure 94, Figure 95 and Figure 96 provide sample screen-shots from the BPMM on-line survey instruments.

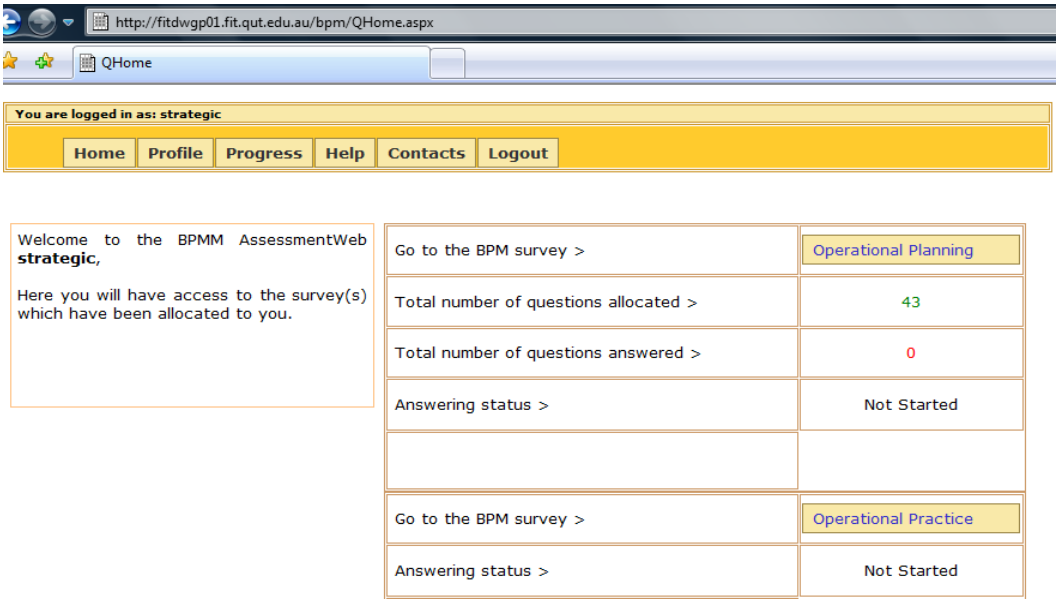


Figure 94: Entry screen from BPMM On-line Assessment

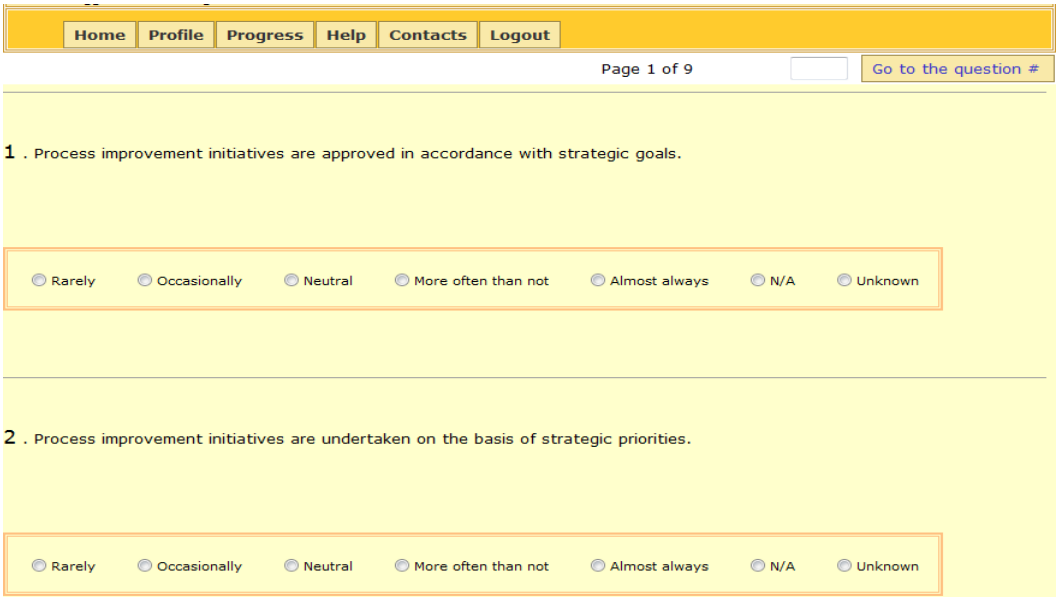


Figure 95: Example from BPMM Operational Planning Survey

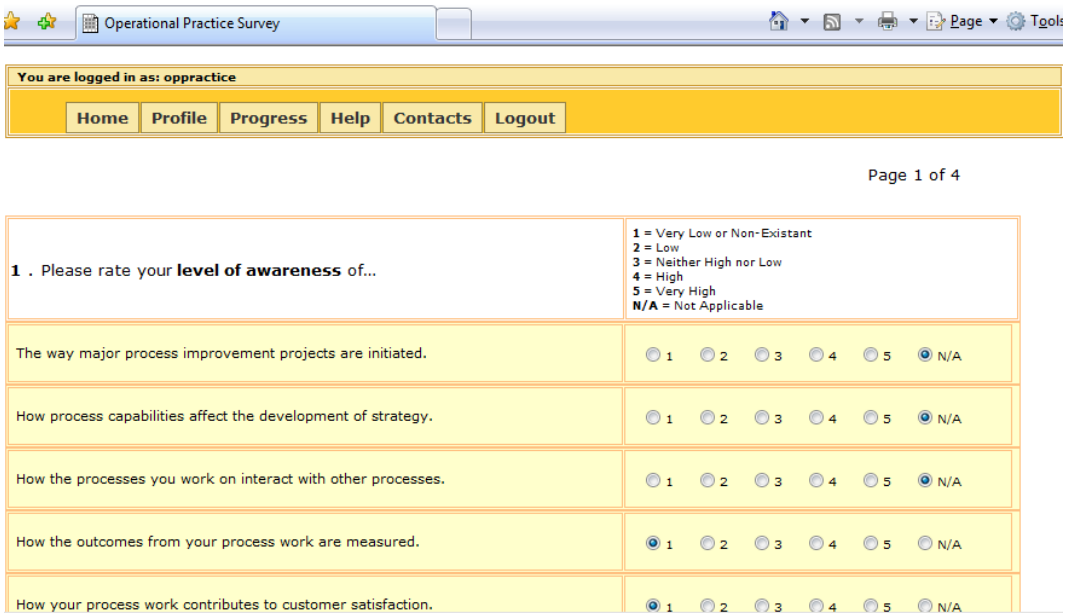


Figure 96: Example from BPMM Operational Practice Survey

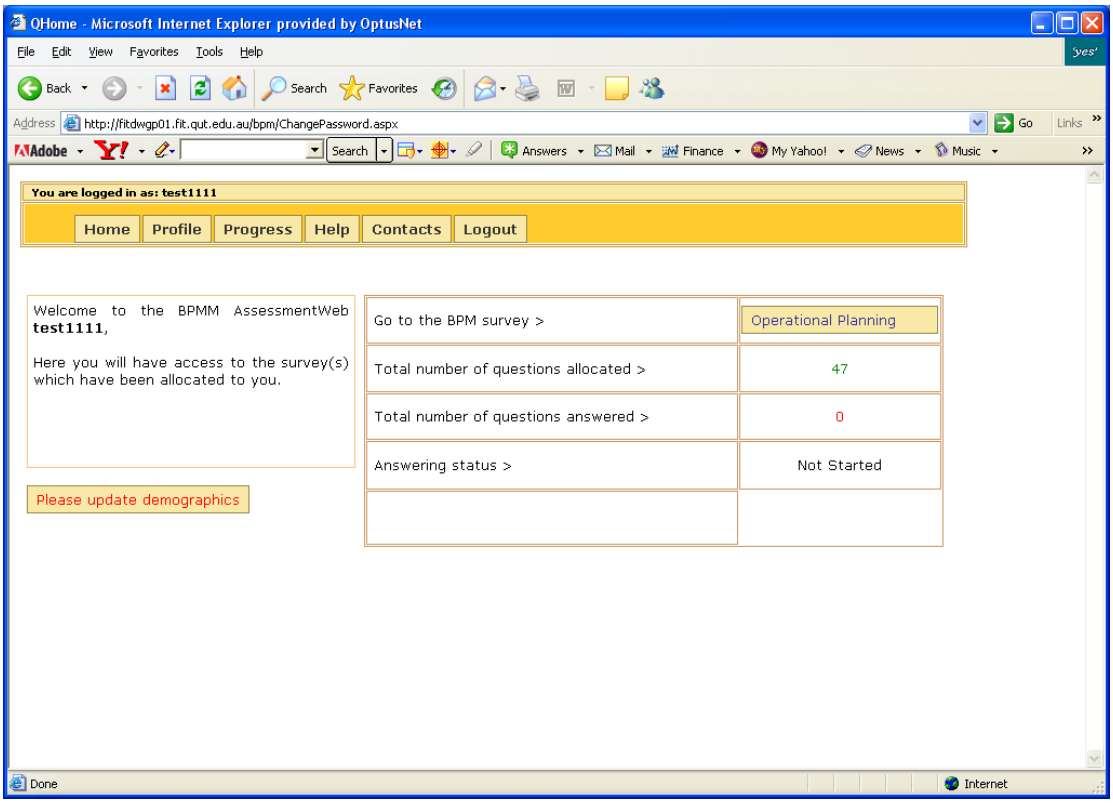
13.3.9 Instructions for Maturity Survey

Additional Information for Maturity Survey Access and Completion

Survey is located at: http://fitdwgp01.fit.qut.edu.au/bpm

When first logging-in, you will be asked to change your password. Passwords need to be at between 8 and 15 alpha-numeric characters.

Following this you will be taken to the entry page of the survey. On this page you need to select the yellow Operational Planning button to commence questions.



The number of questions you are required to answer will vary dependent on the area that you have been nominated for. Expected completion time is 15-20 minutes.

You can leave the survey at any time and your answers will be retained providing you click the **Save Your Answers** button at the bottom of the page. This button does not need to be clicked on each page only at the point of exiting the survey.

You can re-enter the survey again at any time prior to submitting your completed survey. However, once you have submitted your completed survey you will not be able to re-enter the survey again.

When you have completed all survey questions you need to click the **Save Your Answers** button and then select the **HOME** tab from the top left-hand corner. When you are returned to the **HOME** page you need to click the grey **Submit Your Answers** button. Once you have clicked this button you will not be able to re-enter the survey.

You will not be able to **Submit Your Answers** unless you have provided a response to all questions.

If you have any questions or comments regarding the survey please contact me on:

t.debruin@qut.edu.au 0402 794 866 (m)

13.3.10 Final Report: Executive Summary & Contents

(Company M Logo Removed)

Company M

Business Process Management Maturity Assessment

Tonia de Bruin

March 2007, Brisbane

Executive Summary

Company M has a strong history of recognising process management as a means of improving operational profitability and gaining competitive superiority. The strong and continual support for process management at a strategic level is well evidenced in programmes such as the leadership programs of the 90's, Sam's One-Company M and more recently, Six Sigma and Lean. The success of Company M's *BPM Initiatives* has not gone unrecognised with parent company, Company P using Company M as a pilot site for their Aligning Business Systems (ABS) project and as a source of valuable resources for initiatives such as the Improving Performance Together (IPT). With such a rich history of process management, Company M were keen to assess the level of maturity of their existing practices.

This report presents the findings of a business process management maturity (BPMM) assessment undertaken as a joint initiative between Company M and QUT. This assessment was initiated by the CIO of Company M, with the support of Willie Streeter from Company P. The assessment was undertaken by QUT researchers using the BPMM model, developed as a diagnostic tool for evaluating the maturity of BPM practices. The purpose of a BPMM assessment is to enable existing practices to be benchmarked and to provide comprehensive insights into current practices that can be used in the development, prioritisation and implementation of future BPM strategies. The BPMM model is structured around 6 factors identified as critical to the success of a holistic approach to BPM being: Strategic Alignment, Governance, Methods, Information Technology, People and Culture. Each factor is further defined by 5 so-called capability areas that act to cluster BPM practices into manageable units.

Assessment data was gathered during 2006 using a range of techniques including: interviews, workshops, surveys and documentation review. In total more than 30 individuals across Company M participated in this assessment providing the first comprehensive review of BPM practices within Company M. Following a comprehensive analysis of assessment data, results were reported to Company M in the first quarter of 2007.

Key Findings

The overall maturity of BPM practices within Company M confirms the long-term commitment and support given to embedding a strong process management philosophy at all levels of the organisation.

Higher maturity scores in *People* and *Culture* reflect past initiatives focused on developing and promoting staff internally and supporting process management principles through initiatives such as One-Company M and In Control Then Capable. These scores also reflect the open and collaborative culture, evident in Company M through its non-unionised workforce. Similarly, the *Strategic Alignment* results reflect the work that has been done with key processes and strategic planning. This includes the identification of the seven key processes within the Strategy Map, the introduction of the strategy on a page concept (SOAP), the widespread use of Balanced Scorecards and the structured approach to the identification and progression of process improvement initiatives as a part of the strategic planning process. Recent initiatives such as the ABS project have focused attention on defining processes that are consistent across the wider Company P community.

Lower than average *Governance* scores reflect the largely informal approach to BPM governance that exists in Company M. Whilst EXCO is responsible for process decisions relating to the approval and instigation of new projects there is little governance applied consistently across and within process projects. Furthermore, the EXCO process is heavily reliant on informal negotiation and whilst such an approach can improve the buy-in and commitment to process improvement projects it can also create issues with no clear procedures for issues resolution. Clear direction and authority for the overall *BPM Initiative* within Company M is also lacking. The results for *Methods* reflect an imbalance in process-based methods used to manage process actions through all stages of the process lifecycle. Despite significant efforts in adopting and embedding *process improvement* and *process controlling* methods such as Six Sigma and Lean little attention has been paid to methods for *process modelling*, *process execution* and broader *process management* activities. Results for *Information Technology (IT)* reflect a similar imbalance. Little attention has been focused on

process modelling and *process improvement* whilst more significant progress has been made in the areas of *process execution* and *process control*.

Recommendations

The increasing involvement of Company P is creating a state of flux in Company M's process management practices. Whilst the increased participation of Company P **provides the impetus for the on-going sustainability of BPM within Company M** it also presents many new challenges which will need to be addressed to ensure opportunities are realised. The increasing dominance of *strategy* over *process capability* and the resultant strain on process specialists has the potential to become increasingly problematic for Company M. Potential consequences include: **staff disillusionment, increased staff turn-over, fatigue and burn-out, increased frustration and increased non-compliance.** The risk of these consequences occurring will be heightened where the *optimal* BPM approach for Company P at a global level is seen to be increasingly divergent from an optimal Company M position.

Recommendation 1

Implement strategies to manage, enhance and support specialist process resources.

For example: strategies focused on (1) increasing process skills and knowledge; (2) appropriately recognising and rewarding desirable process behaviour; (3) assisting process specialists to maintain a good work/life balance; (4) communicating how Company M fits and contributes to Company P's BPM program; and (5) developing process roles and responsibilities and career paths for process specialists.

The increasing integration of Company M's BPM with that of Company P provides vast opportunities for **streamlining processes and supporting methods and technologies**. Benefits to be achieved include: **increased comparability of data, reduction in duplication, greater ability to optimise the allocation of resources, more consistent decision making within**

processes and greater portability of staff. The ability to achieve these benefits will be seriously jeopardised if standardised methods and technologies are not available or not used consistently.

Recommendation 2

Focus on adopting process-based methods and process-aware technologies across all stages of the process lifecycle.

For example, adopting standardised methods for modelling processes will result in models that can be shared across a number of entities, meet the needs of different audiences, may automatically generate code for process execution and enable comparison between different models. Similarly, utilising process-aware tools for modelling processes will result in greater ability to manage local variants of standard global process e.g. to cater for difference legislation in different regions, will create an ability to store, manage and access process models across different entities and enable the use of reference models.

The **application of process management practices is inconsistent and in many cases narrowly applied** to various groups of *individuals* and *processes*. Not only does this **increase the pressure on process specialists it also acts to restrict the benefits to be achieved from broader application of practices**. Limited inclusion of individuals such as customers can result in process improvement initiatives that do not add value to the customer whilst at the same time limits the benefits, insights and synergies that could be gained from this group. Similarly, practices that are inconsistently applied to processes can lead to confusion amongst process-workers and limit the effectiveness of having greater portability of managers and employees.

Recommendation 3

Implement strategies to increase the consistency and coverage of BPM practices to all classes of individuals and processes.

For example: strategies focused on (1) ensuring wide-spread compliance with approved process management practices; (2) becoming more pro-active towards process change aiming towards questioning *why* processes are done in addition to *how* processes can be done better; and (3) implementing process-related standards to develop a common process language across practices.

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Table of Acronyms	
ABEF	Australian Business Excellence Framework
ABS	Aligning Business Systems
AIM	Australian Institute of Management
B2B	Business-to-Business
BLDP	Business Leader Development Program
BPE	Business Process Engineering
BPI	Business Process Innovation
BPM	Business Process Management
BPMM	Business Process Management Maturity
BPR	Business Process Re-engineering
CEO	Chief Executive Officer
CRTS	Company M Research and Technical Support
EMS	Environment Manager System
EXCO	Executive Committee
GM	General Manager
ITIL	Information Technology Infrastructure Library
ITSMF	Information Technology Service Management Forum
IPT	Improving Performance Together
ISO	International Organization for Standardization
OEE	Overall Equipment Effectiveness
OLDP	Organisational Leader Development Program
NATA	National Accreditation Technical Association
NOSA	National Organisation of South Africa
PMBOK	Process Management Body of Knowledge
QUT	Queensland University of Technology
SOAP	Strategy on a Page
SOx	Sarbanes Oxley
TQM	Total Quality Management
WPR	Work Performance Reviews

13.3.11 Categorisation of Past Challenges

Major Challenges Past	Supporting Statements	Capability Area	Factor
Engagement & Commitment	...Tension between strategy and operational focus...	Process Improvement Plan	Strategic Alignment
	...Cultures are diverse between the business units so adoption of global approaches can face natural challenges/opposition... ...Aversion to change...	Responsiveness to Process Change	Culture
	...Cultural differences between operation sites... ...Building commitment and overcoming resistance at the operational level...	Process Values and Beliefs	
	...Waiting for people to accept the change and learn how to use the tools... ...Engagement of staff...	Attitudes and Behaviours	
	...Engagement of leaders...	Leadership Attention to Process	
Common View & Understanding	...Knowing what initiatives are underway and how they fit together (losing view of the woods for all the trees)...	Process Improvement Plan	Strategic Alignment
	...Divergent site drivers, including culture...	Strategy and Process Capability	

Major Challenges Past	Supporting Statements	Capability Area	Factor
	...Standardising... ...Reducing complexity...	Enterprise Process Architecture	
	...Poor understanding generally of methodology (as opposed to having a fixed way of doing a task)...	All	Method
	...Implement the culture so that everyone is thinking in the same direction... ...Understanding the importance at all levels in organisation... ...Bringing a common understanding of process and practices and change management...	Process Values and Beliefs	Culture
Co-ordinating & Resourcing	...Resourcing *BPM Initiatives*...	Strategy and Process Capability	Strategic Alignment
	...Achieving well-established processes/existing systems – 'selling' the value of alignment...	Enterprise Process Architecture	
	...Lack of co-ordination and champion/sponsor on on-going basis...	Process Roles and Responsibilities	Governance
	...Cost of implementing tools to drive business process management...	Process Management	Information Technology
	...Managing end-to-end fragment over organisation boundaries... Silo-mentality...	Process Collaboration	People
	...Individual operational sites each using separate approaches as	Process Values and Beliefs	Culture

Major Challenges Past	Supporting Statements	Capability Area	Factor
	‘managed sites’ rather than units of a single business approach...		
Consolidation & Sustainability	...Consolidation of approach, implementation and institutionalisation of processes like six sigma and change management - including training of suitably qualified practitioners and stakeholders...	Process Improvement	Methods
	...Retaining learnings...	Process Education	People
	...Maintain momentum...	Process Values & Beliefs	Culture
	...Engaging and sustaining with line management...	Attitudes and Behaviours	

Table 152: Major Historical Challenges

13.3.12 Categorisation of Future Challenges

Major Challenges – Future	Supporting Statements from Interviews and Workshops	Capability Area	Factor
Common View & Understanding	...Clearly defined processes embedded, culturally that we move to a more collaborative model and velocity of change is increased...	Process Improvement Plan	Strategic Alignment
		Strategy & Process Capability	
		Enterprise Process Architecture	
		Process Education	People
		Process Collaboration	
		All	Culture
	...Clarity around roles...	Process Roles & Responsibilities	Governance
	...A common tool kit to apply across the business...	All	Methods
		All	Information Technology
	...Build on current documented processes...	Enterprise Process Architecture	Strategic Alignment
		Process Modelling	Methods

Major Challenges – Future	Supporting Statements from Interviews and Workshops	Capability Area	Factor
		Process Modelling	Information Technology
	...Expect an increase in understanding and acceptance of BPM as integral management tool...	Process Management Knowledge	People
		Process Education	
		Values & Beliefs	Culture
		Attitudes & Behaviours	
	...there will be a continued focus on making all people in organisation think in the same ways regarding BPM...	Process Management Knowledge	People
		Process Education	
		Process Values & Beliefs	Culture
Co-ordination & Resourcing	...increasingly focus on the integration of BPM to all roles so as to increase ownership and use i.e. at site levels...	Process Roles & Responsibilities	Governance
Consolidation & Sustainability	...we can simplify and streamline further, reduce the corporate overhead, reduce wastes and deliver more value...	Enterprise Process Architecture	Strategic Alignment
		Process Customers & Stakeholders	
	...BPM that is more adaptive to changing market pressures...	Strategy and Process Capability	
		Customers & Other Stakeholders	

Major Challenges – Future	Supporting Statements from Interviews and Workshops	Capability Area	Factor
		Process Values & Beliefs	Culture
	...integrated with 'other-process-management'...	Process Management Knowledge	People
		Process Values & Beliefs	Culture
	...Continue to adapt different techniques to improve performance...	All	Methods
	…that we have a system which is reasonably robust that we are able to add things to without having to fundamentally go back and change the whole thing again and that it provides us with forward looking information rather than just history...	All	Information Technology
	...Continuing to grow, learn and improve...	Process Education	People
		Process Attitudes & Behaviours	Culture
	...Not take the focus off...	Process Values & Beliefs	Culture
Visibility & Results	...That effectiveness of processes is measured...	Process Measures	Strategic Alignment
	...Improved safety and business performance...	Process Measures	
	...Better awareness of how we are managing our processes...	Process Management Decision Making	Governance
		Process Management Compliance	

Major Challenges – Future	Supporting Statements from Interviews and Workshops	Capability Area	Factor
	...More visible...	Process Values & Beliefs	Culture
Standardisation & Globalisation	...Although there's meant to be continuous improvement it's going to be big continuous improvement rather than little continuous improvements...	All	All
	...Move from more commercial processes to more production and value stream oriented activities...	Process Improvement Plan	Strategic Alignment
		Process Customers & Stakeholders	

Table 153: Major On-going Challenges

13.4 Longitudinal Case Study Supporting Documentation

13.4.1 Expression of Interest in BPM Evolution Case Studies

This research study is aimed at investigating the way in which business process management (BPM) evolves within organisations. The research is motivated by the desire to assist organisations understand and adopt BPM as a sustainable management practice. The BPM Maturity model is used as a basis for this research to provide a stable and consistent base from which to gather data and compare results across organisations.

The study starts with a series of one-on-one interviews with key BPM personnel in the organisation. The purpose of the interviews is to build a comprehensive and chronological view of the organisation's BPM journey. In particular we explore the major initiatives, drivers, challenges and lessons learned along the way. Each interview is approximately 1-1.5 hours in duration and we aim for a minimum of 4 interviews per organisation. Following the interviews, participants are asked to complete a survey (approximately 20 minutes) that assesses the level of emphasis the organisation has placed on each of the BPMM capability areas. The data gathered during the interviews and surveys is consolidated into a comprehensive picture of the organisation's BPM position. This picture is then used as a basis for the workshop. The aims of the workshops are (1) to review the consolidated results and discuss any anomalies or oversights; and (2) to identify the practices currently undertaken in each of the BPMM capability areas.

The **value** gained by organisation's participating in this research includes:

- A comprehensive account of the organisation's BPM journey in the format of a final report; and
- A deeper understanding of the BPM capabilities essential to developing sustainable BPM practices.

The **commitment required** from organisations participating in this research would include 4 – 6 individuals knowledgeable about the organisation's BPM journey participating in the following way.

- Each individual would be interviewed separately about the organisation's BPM journey (approximately 1-1.5 hours each) and would be required to complete a short survey (20 minutes);
- As a group, all individuals would attend a 6 hour workshop (conducted over 1 day) during which we would:

Review the consolidated BPM journey to confirm completeness;
Discuss the influencing variables and lessons learned;
Provide a brief introduction to the BPMM capability areas; and
Identify the major practices and activities undertaken in each of the BPMM capability areas.

The events would be scheduled at times and locations convenient to the participants and ideally would be conducted by the end of 2007. Ideally all interviews would be conducted on the same (or consecutive) days. The workshop can be conducted on the day following interview completion or at a later date (as required).

If your organisation is able to participate in this research please contact:

Tonia de Bruin on 0402 794 866 or at t.debruin@qut.edu.au

13.4.2 Information Sheet and Informed Consent

– Case Study with *Company X* –

Information Sheet

Chief Investigators:	Tonia de Bruin	Michael Rosemann
	PHD Candidate, QUT	Professor, QUT
	Email: t.debruin@qut.edu.au	Email: m.rosemann@qut.edu.au
	Phone: 3864 9476	Phone: 3864 9473

Project Description and Background

Business process management (BPM) is emerging as an important management practice, providing organisations with a means of increasing competitiveness and sustainability in times of market uncertainty, increasing globalisation and constantly changing business conditions. Existing studies have investigated BPM practices within organisations primarily using exploratory research such as case studies. These studies have identified that many organisations are keen to progress BPM to higher levels of maturity but that few organisations have been able to do so. Evidence from earlier research indicates that there is both a lack of understanding of *how* organisations progress BPM practices as well as a lack of validated instruments available for measuring progress in a consistent and comparable manner. Furthermore, a number of studies have highlighted anomalies in the definition and use of BPM terminology making it difficult to compare, contrast and build upon past research in a meaningful way. From a practical perspective there is also the added concern from some practitioners that BPM is just another fad. This research project therefore aims to ultimately address the question:

How can organisations progress and sustain BPM practices?

Based on the findings from earlier research, the QUT researchers determined that it was prudent to address the issues of terminology and measurement within the BPM domain and to first develop a consistent platform from which to advance their BPM research. Therefore a two phased approach was planned with Phase 1 focused on *consistent definition and measurement of BPM practices in organisations*, and Phase 2 focused on the *identification and progression of BPM practices within organisations*. Therefore in **Phase 1** of the project the researchers addressed the question:

How can BPM progress be consistently measured and compared across organisations?

In response to this question, QUT researchers worked to develop a generic BPM Maturity (BPMM) model that could be used to measure the progress of BPM practices within an organisation. The high-level BPMM consists of 6 factors that were identified from prior research and 30 so-called capability areas which were subsequently derived through an international series of Delphi studies (one study for each of the six BPMM factors). The BPMM model with its factors and capability areas is reflected in Figure 97. The BPMM model is designed to investigate the maturity of existing BPM practices within an organisation on the basis of how well they are done (as compared to best practice) and how extensively they are applied (to defined classes of individuals and processes). Results from a BPMM assessment provide an organisation with deeper insights into existing practices that can be used to inform the development and prioritisation of BPM strategies based on the relative strengths and weaknesses identified. Through the first stage of this project, the BPMM model has been applied in a number of case studies and has been found to provide a comprehensive understanding of existing BPM practices within organisations. The factors and capability areas contained within the BPMM model have now been sufficiently developed and tested through a number of case studies to provide a consistent and stable platform from which the researchers can begin to address the ultimate aim of the research, **how do organisations progress BPM practices**.

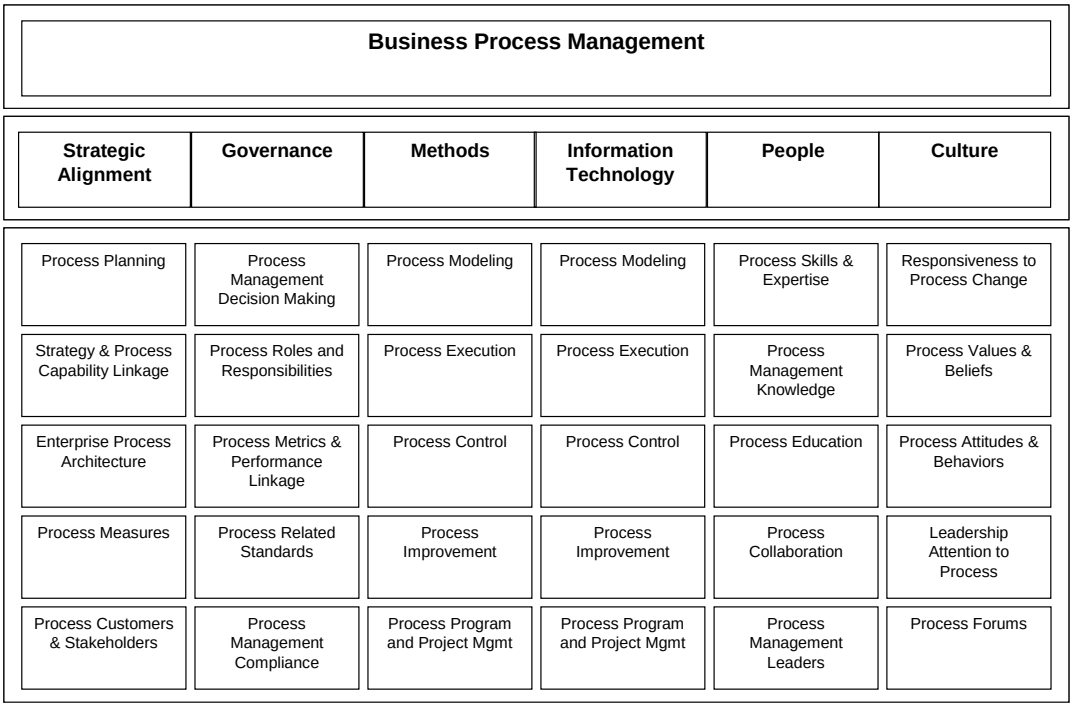

Figure 97: Conceptual BPM Maturity Model

In **Phase 2** the researchers plan to address the question:

How do organisations progress and sustain BPM practices?

QUT has approached *Company X* with a view to using the BPMM model as a basis for investigating *how* BPM has evolved within the organisation. Of interest to the researchers is the relative emphasis placed on each of the BPMM factors during the BPM journey and the identification of variables which may have influenced the BPM journey. The researchers see working with industry partners as an opportunity to:

- Utilise the BPMM model as a consistent basis for conducting exploratory research into how an organisation progresses BPM practices;
- Gain deeper insights into *whether* BPM evolves differently from organisation to organisation, and if so, why this might be;
- Gain an understanding of *how* and *why* the relative emphasis placed on the BPMM factors might change over time as BPM progresses within an

organisation (if at all);

- Identify the major determinants of BPM progression within an organisation; and

- Identify any discernible patterns of BPM evolution that may exist and how these might be used to progress and sustain BPM practices.

Phase 2 – Expected Benefits and Risks to *Company X*

Participation in Phase 2 is expected to provide *Company X* with a number of benefits including:

- A documented, overview of the BPM journey together with a summary of the lessons learned.

- A comprehensive overview of the relative emphasis that has been placed on the various BPMM factors.

- Insights and a deeper understanding into other variables that have influenced the BPM journey.

- An understanding of the BPMM model and its capability areas to assist informal application of the model concepts e.g. using the structure of the model to guide strategy development without having a formal BPMM assessment conducted.

- Insights into BPM progression in other organisations by way of a final summary report provided to all participating organisations at the completion of all studies.

There are **no** foreseen risks associated with participation in this study. All costs associated with this research will be the responsibility of the researchers unless agreed otherwise.

Phase 2 – Structure

The structure of the research undertaken in Phase 2 will include a number of distinct sessions including:

- Initial Planning Session
- Interviews
- Workshop
- Written report

In the initial stages of the case study, *Company X* will nominate a 4 – 6 individuals to participate in the study. Participants will be required to participate in a one-on-one interview, survey and workshop about the BPM journey at *Company X*. Therefore participants will need to have an in-depth knowledge and understanding of the progression of BPM over time. Participants will be contacted in the manner agreed between the Chief Investigators and *Company X* at the initial planning session. The study will be undertaken on *Company X* premises where facilities will be made available in a manner agreed between the Chief Investigators and *Company X* at the initial planning session.

The one-on-one interviews and BPM Evolution survey will be conducted first. The purpose of the interviews is to obtain a comprehensive and chronological view of the BPM journey. Each interview will take approximately 1-1.5 hours with the survey taking no more than 20 minutes to complete. Ideally interviews will be scheduled to occur over a one or two day period and can be conducted via telephone if required.

The workshop will include all participants and will be conducted following the consolidation of interview and survey data. This can be the following day or a later date if required. The workshop will take approximately 6 hours over the course of 1 day. The workshop will be facilitated by the Chief Investigator and potentially one other researcher from QUT.

Phase 2 – Schedule

The scheduling for sessions is to be agreed between the Chief Investigators and *Company X* dependent upon the availability of participants. Sessions could be scheduled to occur over consecutive days with all interviews and surveys being completed first with the workshop being conducted on the following day allowing time for analysis of the interview and survey data. Schedules are structured to suit the availability of participants.

Phase 2 – Outcomes

The major outcomes from the study will be a comprehensive view of the BPM journey, a deeper understanding of the BPM journey and insights into the variables that have had a major influence over the course of the journey. Following the completion of this phase of the research, *Company X* will receive a written report that details the findings of this phase.

Audio Recording of Interviews

With the permission of *Company X*, the Chief Investigators would like to audio record all interviews and workshops for improved data capture, transcription and analysis. *Company X* may not wish to grant permission to have the interviews and workshops with their representatives recorded. This will not impact on *Company X* participation in the project. If permission is granted for the use of audio recording, all audio files will be either destroyed or returned to *Company X* once they have been transcribed.

Confidentiality

All recordings, transcripts, documentation and other information and data gathered during the assessment will be kept strictly confidential. The identity of participants will be kept confidential and will be known only to the Chief Investigators. Furthermore, no-one outside the QUT research team will have access to the information provided by *Company X* representatives. Only aggregated results of the study will be reported. While, some individual responses may be reported, no individual or company will be identified with any

of these responses unless explicitly agreed between the Chief Investigators and *Company X*.

Voluntary Participation

Participation in this study is purely voluntary. *Company X* may wish to withdraw participation of their representatives at any time, without penalty or judgement.

Questions / further information

If a *Company X* representative would like to obtain additional information or has any queries they would like addressed, they can contact the research team members below:

Ms Tonia de Bruin

(*Chief Investigator* / Researcher)
Business Process Management Group
Faculty of Information Technology
QUT
Level 5, 126 Margaret St
Brisbane 4000,

Australia

Tel: (07) 3864 9476
Fax: (07) 3864 9390

Mobile: 0402 794 866
Email: t.debruin@qut.edu.au

Prof. Michael Rosemann

(Chief Investigator / Professor)

Business Process Management Group
Faculty of Information Technology
QUT
Level 5, 126 Margaret St
Brisbane 4000,

Australia

Tel: (07) 3864 9473
Fax: (07) 3864 9390

Email: m.rosemann@qut.edu.au

Concerns / complaints

If you have any concerns or complaints about the ethical conduct of the project you could contact the Research Ethics Officer on 3138 2340 or ethicscontact@qut.edu.au**.**

Feedback

Feedback to *Company X* will be in the form of results of the study provided in a presentation and report.

Thank-you for your interest and support of this project

– Case Study with *Company X* –

Informed Consent Form

Chief Investigator: Tonia de Bruin (PHD Candidate, QUT)
Email: t.debruin@qut.edu.au

Chief Investigator: Michael Rosemann (Professor, QUT)
Email: m.rosemann@qut.edu.au

Statement of consent

By signing below, you are indicating that you (on-behalf of Company M):

- ❑ have read and understood the information sheet about this project;
- ❑ have had any questions satisfactorily answered;
- ❑ understand that any additional questions can be raised with research team at any point;
- ❑ understand that Company M is free to withdraw participation of its representatives at any time, without comment or penalty;

(Please tick only one)

- ❑ agree for Company M representatives to participate in the project.
  - ❑ And grant permission to audio record interviews
  - ❑ But, do not grant permission to audio record any interviews

Name _____

Signature _____

Position _____

Date _____ / _____ / _____

13.4.3 Interview Guide

Following a brief introduction to the research, this interview will focus on your views of the BPM journey within Company X. The interview is loosely structured to allow you to talk about the journey in your own fashion. However during the discussion we will aim to cover the following points.

- **Triggers** for BPM within Company X (i.e. the event/s that started interest in BPM)
- **Drivers** of BPM within Company X (i.e. the business goals and objectives of the *BPM Initiative*)
- **Enablers** of BPM within Company X (i.e. the 'things' that have to be in place or take place for BPM to progress)
- **Challenges** for BPM within Company X (i.e. issues that had to be overcome during the BPM journey)
- **Learnings** from Company X' BPM journey (i.e. the 'take-aways' from the BPM journey thus far)
- **Critical/contextual variables** that have influenced the BPM journey (i.e. the major things that have affected the way in which BPM has unfolded)
- **Other Comments** – about BPM at Company X or about BPM in general

13.4.4 BPM Evolution Survey

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Exploring the Evolution of Business Process Management Within Organisations

- Contact Survey -

Background

In the past many organisations have expressed a desire to achieve the well publicised benefits from a co-ordinated organisational approach to process management and improvement. The problem is that little is known about how best to progress BPM. Thus this research is motivated by the desire to assist progress and sustain BPM within organisations. By investigating how *BPM Initiatives* evolve in a range of organisations we endeavour to understand what variables are found to impact on the success, maturity and structure of *BPM Initiatives*. In doing so, we seek to gain deeper insights into potential patterns/trends evident in the BPM evolution within organisations.

Benefits

In addition to a detailed report containing insights specific to BPM in your organisation, at a later date, your organisation will receive a copy of the final consolidated report that details the broader findings arising from this research.

Voluntary Participation

Participation in this survey is purely voluntary. If you do not wish to continue with the survey at any point you are free to exit without penalty or judgement. Incomplete survey responses will be discarded.

Confidentiality

All data, comments and responses gathered during the survey will be treated strictly confidential and anonymous. The provision of personal information is not mandatory at any point during the survey. Where sensitive information is required, the identity of participants will be kept confidential and will be known only to the Chief Investigators. Only aggregated results of the survey will be reported. There are no risks associated with your participation in this research.

Questions / further information

If you would like to obtain additional information or have any queries you would like addressed, you can contact the research team members below:

Ms Tonia de Bruin

(*Chief Investigator* / Researcher)
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Faculty of Information Technology, QUT
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Prof. Michael Rosemann

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Faculty of Information Technology, QUT
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Australia
Tel:+61 7 3138 9473

Email: m.rosemann@qut.edu.au

Concerns / complaints

QUT is committed to researcher integrity and the ethical conduct of research projects. However, if you do have any concerns or complaints about the ethical conduct of the project you may contact the QUT Research Ethics Officer at +61 7 3138 2340 or email: ethicscontact@qut.edu.au. The Research Ethics Officer is not connected with this research project and can facilitate a resolution to your concern in an impartial manner.

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Definitions

This section defines the terms *BPM, BPM Initiative* and *end-to-end process* as they are used in this survey. It is important to read these definitions to ensure questions are interpreted as intended.

The term **'BPM'** is used to refer to a holistic management practice aimed at adopting a process-orientation as a way of doing business. It is recognised that an organisation may not refer directly to BPM however in the context of this research this term is taken to encompass a management approach that includes a focus on:

- Having a strategic focus on process management;
- Defining the end-to-end processes of the organisation;
- Standardising and streamlining processes;
- Creating a customer perspective and generating value-add;
- Collaborating on processes;
- Connecting with customer and supplier processes;
- Eroding cross-functional boundaries; and
- Simplifying process work.

The term ***'BPM Initiative'*** or ***'BPMI'*** is used as a proxy for your organisation's process-based initiative. Such an initiative might be in the form of:

- an ad hoc approach to process improvement and management;
- a project-based approach to process improvement and management;
- pockets of BPM excellence e.g. a centre of excellence, contained within discrete business units or perhaps a specialist team; and
- an enterprise wide *BPM Initiative*.

Again, it is recognised that the initiative may not be called 'BPM' within each organisation but may be called something like Business Transformation, Business Improvement or Change Project. In essence, such an initiative would display (to a greater or lesser extent) similar attributes as those detailed above in the definition of BPM.

The term ***'end-to-end process'*** is used as a proxy for other terms such as key, core, and critical business processes, used to indicate the high-level processes that define an organisation's business.

Section 1: Participant Details

a) Does your organisation have a current *BPM Initiative* (BPMI)?

- Yes
- No, but had one in the past
- No, and it has never had one

b) Please indicate your level of involvement with your organisation's BPMI:

I am **currently** involved with the BPMI:

- and have been since it began *or* I was involved with the BPMI for its entirety (where the BPMI has finished).
- but became involved after it started and have a strong understanding of its history.
- but became involved after it started and have only a limited understanding of its history.

I am **not currently** involved with the BPMI:

- ☐ but was in the past.
- ☐ and never have been.

c) What is your position within the organisation?

_____

d) What is your position level in the organisation:

- ☐ Strategic
- ☐ Tactical
- ☐ Operational
- ☐ Other (specify)_____

e) How long have you been with your organisation?

_____years

Section 2: *BPM Initiative* Details

a) In what year did your organisation first start its BPMI? _____

b) **If finished**, in what year did your organisation complete its BPMI? _____

c) How would you best describe your organisation's current *BPM Initiative*?

- ☐ Ad Hoc
- ☐ Project-based
- ☐ Pockets of excellence e.g. BPM Centre / BPM Team / Business Unit
- ☐ Enterprise-wide Program
- ☐ Other, please provide details

d) Please indicate the three main *drivers (i.e. the reasons for undertaking the initiative)* of your organisation's *BPM Initiative* **when it started.**

i)
ii)
iii)

e) Have the main *drivers* changed over time? *Yes* *No* *Don't know*

f) If *Yes*, please indicate what the main drivers are now and the major reasons why they changed:

_____

g) Please indicate the three main *objectives (i.e. what the organisation wanted to achieve)* of your organisation's *BPM Initiative* **when it started.**

i)
ii)
iii)

h) Have the main *objective/s* changed over time? *Yes* *No* *Don't know*

i) If *Yes*, please indicate what the main objectives are now and the major reasons why they changed:

_____

j) Please indicate the three main *success measures* of your organisation's *BPM Initiative* **when it started.**

i)
ii)
iii)

k) Have the main *success measures* changed over time? *Yes* *No* *Don't know*

l) If *Yes*, please indicate what the main success measures are now and the major reasons why they changed:

_____

m) How satisfied is your organisation with its progress in achieving these success measures?

Very Dissatisfied									**Very Satisfied**
1	2	3	4	5	6	7	8	9	10

n) How would you rate the maturity of your organisation's *BPM Initiative*?

Very Immature									**Very Mature**
1	2	3	4	5	6	7	8	9	10

Section 3: Level of Emphasis

The following questions require answers for two periods of time (if applicable). That is during the *first twelve months* and the *last or most recent twelve months* of your organisation's *BPM Initiative*.

Please indicate the *level of emphasis your organisation has given* to the following items during each period of time.

a) Ensuring process initiatives are agreed and prioritised in line with strategic goals

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

b) Establishing a two-way relationship between process capabilities and organisational strategy

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

c) Developing an enterprise-wide architecture that defines the end-to-end processes and their interrelations

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

d) Aligning process measures explicitly with the strategic goals they are to achieve

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

e) Balancing the process requirements of customers with those of other process stakeholders

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

f) Implementing a process-based governance structure

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

g) Assigning process related roles and responsibilities

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

h) Linking reward and remuneration to the optimisation of end-to-end process performance

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

i) Adopting process-related standards

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

j) Ensuring compliance with process-related standards

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

k) Utilising agreed methods for representing processes e.g. BPMN, IDEF0, Value Chain, Strategy Maps or similar

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

l) Utilising agreed methods for monitoring processes e.g. process audits, service level agreements, quality checks or similar

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

m) Utilising agreed methods for evaluating processes e.g. ABC analysis, benchmarking, value chain analysis or similar

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

n) Utilising agreed methods for improving processes e.g. Lean, Six Sigma, blue-sky thinking or similar

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

o) Utilising agreed methods for managing the overall BPM program and projects, e.g. process portfolio management, a process for process lifecycle management or similar

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

p) Utilising agreed IT for modelling processes, e.g. Aris, Staffware, Holocentric or similar

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

q) Utilising agreed IT for executing processes, e.g. a workflow engine, ERP, BPMS or similar

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

r) Utilising agreed IT for controlling process performance, e.g. triggers, control variables, flags or similar

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

s) Utilising agreed IT for analysing processes, e.g. simulation software, scenario analysis tools or similar

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

t) Utilising agreed IT for managing process information, e.g. process dash-boards, intranet, portals, on-line forums or similar

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

u) Ensuring the availability of appropriate process skills and expertise

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

v) Establishing a comprehensive body of BPM knowledge

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

w) Providing a range of process-based education programs e.g. covering both process-specific and broader BPM aspects

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

x) Increasing collaboration on process-related work

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

y) Developing the attributes required in process management leaders

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

z) Creating an environment that is proactive towards process change

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

aa) Communicating the organisation's values and beliefs regarding BPM

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

bb) Encouraging attitudes and behaviours that support BPM

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

cc) Promoting BPM through executive and senior management leadership

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

dd) Facilitating the active sharing of process-related knowledge and experiences

	No Emphasis						**Strong Emphasis**	**Don't know**
First Year	1	2	3	4	5	6	7	☐
Last Year	1	2	3	4	5	6	7	☐

Section 4: Level of Agreement

In this final section, questions require answers for two points in time being (1) at the *start* of the *BPM Initiative* and (2) *now*. Please indicate your *level of agreement* with the statements for each point in time. Please note, any change in your *level of agreement* over time DOES NOT HAVE TO BE AS A RESULT OF THE *BPM INITIATIVE*.

a) *Employees* within the organisation are highly motivated.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

b) *Employees* have confidence in the abilities and skills of other employees.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

c) *Employees* have confidence in decisions made by other employees.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

d) *Employees* have confidence that other employees act in the company's best interest.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

e) *Employees* from within the same department communicate on a regular basis.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

f) *Employees* from different departments communicate on a regular basis.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

g) *Employees* are willing to commit time and energy to improving processes.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

h) *Employees* view BPM as being critical to the future of the organisation.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

i) **Executives** create an environment that encourages learning through experience.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

j) **Executives** stimulate employees to be creative and innovative.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

k) **Executives** focus on the long-term viability of the organisation.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

l) **Executives** ensure employees are provided with the tools they need to do their work as best they can.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	□
Now	1	2	3	4	5	6	7	□

m) **Executives** create an environment that promotes BPM.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	☐
Now	1	2	3	4	5	6	7	☐

n) **Executives** support BPM through their words and actions.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	☐
Now	1	2	3	4	5	6	7	☐

o) **Executives** are convinced of the business value of BPM.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	☐
Now	1	2	3	4	5	6	7	☐

p) **Executives** view BPM as being critical to the future of the organisation.

	Strongly Disagree						**Strongly Agree**	**Don't know**
Start of BPMI	1	2	3	4	5	6	7	☐
Now	1	2	3	4	5	6	7	☐

Section 5: Organisation Demographics (completed by Contact only)

Organisation's name: _____

Headquarters located in: _____

Industry type:

- ☐ Agriculture
- ☐ Building and Construction
- ☐ Banking and Financial services
- ☐ Education
- ☐ Health
- ☐ Innovation, Science and Technology
- ☐ Manufacturing
- ☐ Mining
- ☐ Professional Services
- ☐ Retail
- ☐ Telecommunications
- ☐ Tourism
- ☐ Transport
- ☐ Utilities
- ☐ Other, namely _____

Annual turn-over: _____

Approximate number of employees:_____

Approximately what percentage of employees is full-time? _____ %

Approximately what percentage of employees is in a work-related union? _____%

Sector:

☐ Private ☐ Public ☐ Not For Profit (NFP) ☐ Other, (please specify)

Organisation's ownership structure:

- ☐ Stand alone company
- ☐ Wholly owned or controlled subsidiary
- ☐ Parent company
- ☐ Other (please specify)_____

If your organisation is a wholly owned or controlled subsidiary, please indicate your parent company:

Name: _____

Headquarters location: _____

The following questions relate to your organisation's *BPM Initiative*.

Which area instigated your organisation's *BPM Initiative*?

- □ Parent company
- □ Board of directors
- □ Executives
- □ BPM Centre
- □ Line of Business
- □ IT Department
- □ Finance Department
- □ Sales & Marketing Department
- □ Human Resources Department
- □ Other (please specify) _____

How would you best describe the structure of your organisation's *BPM Initiative* when it started?

- □ Ad Hoc
- □ Project-based
- □ Pockets of excellence e.g. BPM Centre / BPM Team
- □ Enterprise-wide Program

Which area was responsible for the *structure* of your organisation's *BPM Initiative* when it started? (select one)

- □ Parent company
- □ Board of directors
- □ Executives
- □ BPM Centre
- □ Line of Business
- □ IT Department
- □ Finance Department
- □ Sales & Marketing Department
- □ Human Resources Department
- □ Other (please specify) _____

Which area is responsible for the *structure* of your organisation's *BPM Initiative* at this point in time? (select one)

- □ Parent company
- □ Board of directors
- □ Executives
- □ IT Department
- □ Finance Department
- □ Sales & Marketing Department

□ BPM Centre
□ Line of Business
□ Human Resources Department
□ Other (please specify) _____

Who was accountable for the conduct of your organisation's *BPM Initiative* when it started?

□ CEO □ CIO □ CFO □ COO □ COO □ Other, namely _____

Who is accountable for the conduct of your organisation's *BPM Initiative* at this point in time?

□ CEO □ CIO □ CFO □ COO □ COO □ Other, namely _____

How long is your organisation planning to continue with its *BPM Initiative* (in some form)?

□ At most2 years
□ 2 to 5 years
□ 6 to 10 years
□ Ongoing
□ Other, namely _____

If there are plans to continue the *BPM Initiative* for more than 2 years, briefly explain what these plans involve?

13.4.5 Workshop Agenda

8.45 – 9.00	Welcome and Introduction
9.00 – 10.00	Overview of the BPMM Model
10.00 – 11.00	The role of **Contextual Variables**
11.00 – 11.15	*Morning Tea*
11.15 – 12.15	Results from interviews and surveys
12.15 – 12.45	**Strategic Alignment** Capability Areas and Practices
12.45 – 1.15	**Governance** Capability Areas and Practices
1.15– 1.45	*Lunch*
1.45 – 2.15	**People** Capability Areas and Practices
2.15 – 2.45	**Culture** Capability Areas and Practices
2.45 – 3.15	**IT** Capability Areas and Practices
3.15 - 3.30	*Afternoon Tea*
3.30 – 4.00	**Methods** Capability Areas and Practices
4.00 – 4.15	Next Steps & Close

13.4.6 Mapping Activities to Factors: Company S & U

Company S

Figure 98 depicts a number of preliminary events that occurred prior to the commencement of the WPI project.

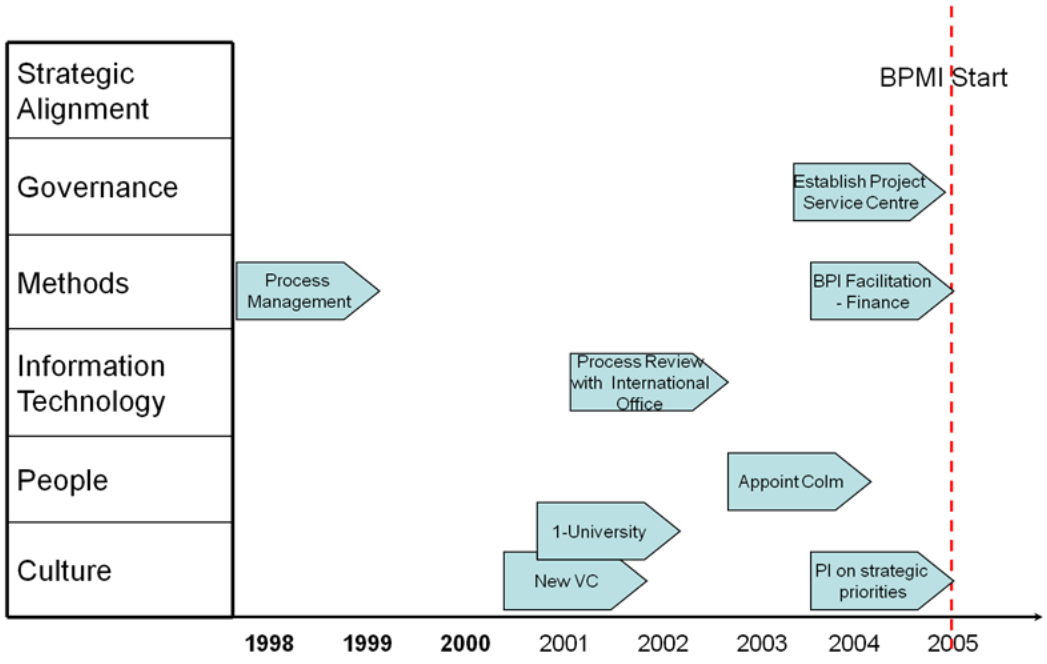

Figure 98: Major Activities Leading to BPMI Commencement

This diagram shows that the preliminary activity was largely to do with the organisational culture as it pertains to BPM and investigating methods for moving forward. It also highlights the critical impact of getting a new Vice Chancellor who wanted to achieve a "one university" culture. This change led to a lot of integration work and an interest in streamline work across the geographically dispersed campuses. The appointment of the Program Manager was also critical, as he later became the program manager for the WPI.

Similarly, Figure 99 reflects the major activities undertaken following the approval of the WPI project and the Workplace Productivity Program funded by the DEST grant. From this mapping, it appears that the factors of Strategic Alignment,

Methods and Culture received the bulk of the emphasis during early stages of the WPI. The factors of Governance, IT and People appear to have received little or no attention during the early stages of the BPM journey.

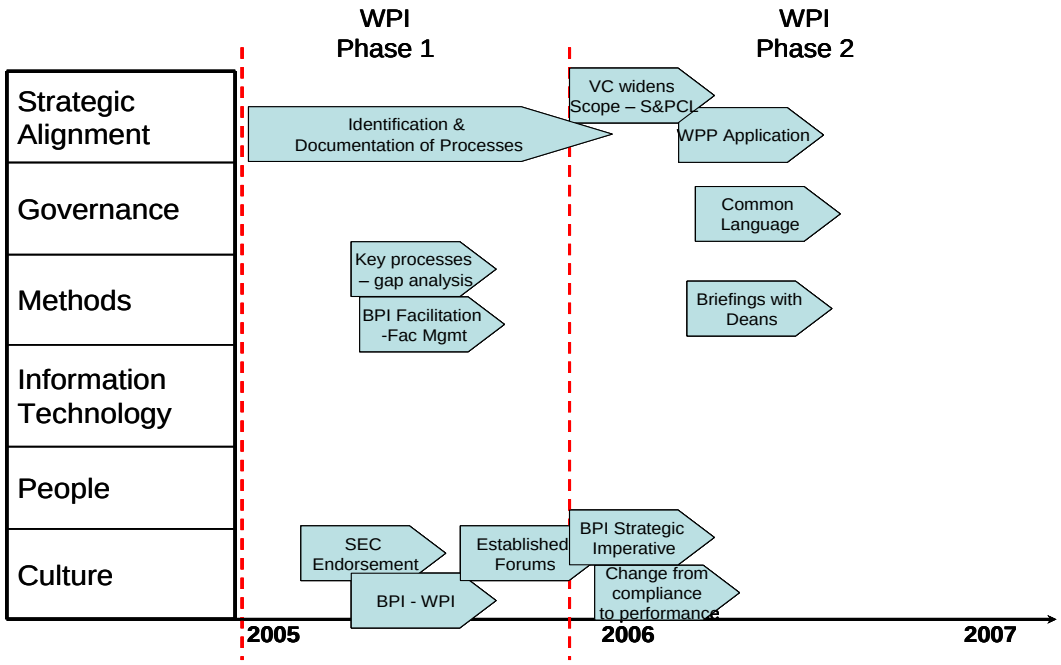

Figure 99: Company S – Major Activities during BPM Initiative

In comparing this map to the above figures, it appears that they are consistent for the emphasis on Strategic Alignment, Culture and Methods and the lower level of emphasis on Governance and Information Technology. There appears to be an anomaly however, with the People factor that has seemingly rated higher in the surveys than this depiction suggests. On revisiting the interview transcripts, it became apparent that the significant involvement and education of people reflects in the larger purpose of the activity or event taking place, not necessarily as a separate aspect. Thus, the survey reflects the active involvement and increased collaboration of people in projects to develop the process architecture but this only appears as one activity in Figure 99 (i.e. Identification and Documentation of Processes). Similarly, the informal education and learning undertaken with individuals through the various communication mediums aimed at progressing the *BPM Initiative* and the increase in BPM knowledge. Participant statements that support this include:

"...you've got to develop people who have a kind of deep knowledge, not only of your organisation but I think of universities..."

"...you can have perfectly rational consultations and discussions and working parties and shared this and that and communicate to people and yet, even people engaged with those processes don't necessarily get it..."

"...we would need to involve and include reference groups, a variety of reference groups in the effort. So we worked through the organisation we could speak to the course coordinators, we could talk to the organisation, we could talk to the professoriate (...) however recently we put together a forum (...) we also had later in the piece a middle manager forum..."

"...we brought that forward to our briefings of the forum to explain what we were doing..."

"...we then conducted a series of briefings with the Deans. We had been talking to Executive Directors and we had been dealing with senior management around about April 2006 we briefed the Deans..."

"...we opted to do a review at a high level (...) we wanted the Deans themselves to be involved (...) typical representation was from Deans and Heads of School, school Admin Officers, Faculty Executive Officers and others as nominated..."

Company U

The history of the *BPM Initiative* reflects in the major activities that have occurred over time. Figure 100 shows these activities over the course of the initiative. It is clear from the diagram that significant activity occurred following the creation of COG and the subsequent appointment of an external GM. Similarly, the close integration between COG and the IT department reflects in the emphasis on the IT factor.

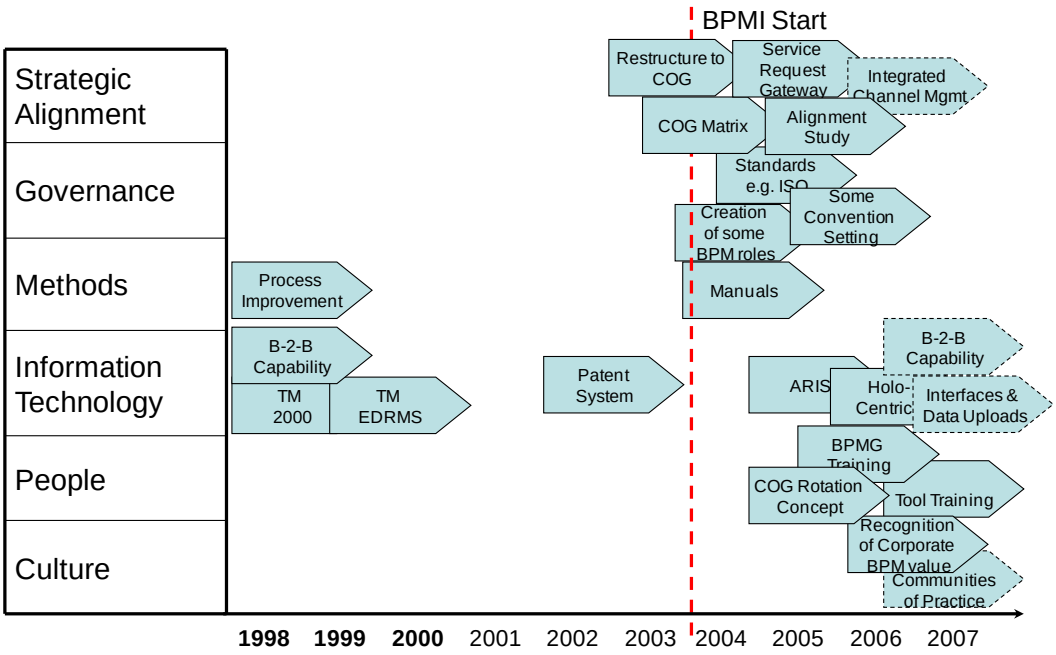

Figure 100: Major Initiatives in BPM Initiative – Company U

During the workshops, participants validated this map an in comparing this map to the figures above, it appears they are consistent with the level of emphasis on all factors except Methods. This factor appears to have a higher emphasis in the survey data than in the initial depiction. Revisiting the interview transcripts enabled the exploratory of this anomaly. What became apparent from this review was that the single item of "Manuals" showing on the validated diagram, was actually a significant body of work, including changes to the technology available and the training and induction of new staff.

"...all our manuals are now online and I thought it was unreasonable for me to expect that an operator can be reading the online manual and undertaking transaction work in the host system on the same screen, because you can't flick between the instruction and the screen and have it make any sense, so we installed dual monitors on everybody's desk tops so now they can read their online instructions on one screen and use the transaction system on the other...it makes it so much easier for them..."

"...it's been really help with new staff because...you can point them to the screen and they've got the right manual (...) you don't have to wonder if it's that manual over there with the red cover or that manual with the green cover that's the

current one, am I training them the wrong way..."

Additionally, an activity coded to the Governance factor (i.e. Standards – ISO) resulted in a significant focus on the adoption and use of methods for improving the quality of processes within the COG. This reflects in statements:

"...we went from something like 2,000 uncontrolled documents down to 24. We now have in my group, all but three people operating under a certified QMF 9001 process. The only reason those three people aren't certified is they only joined us 6 months ago and we haven't got them into the certification rounds..."

This shows that it is not the number of activities but rather the magnitude of the activities that best reflect emphasis.

13.4.7 BPM Capability Area Overview

BPM Capability Area Overview

Tonia de Bruin

May 2008

This document provides a brief overview of the Capability Areas included in the Business Process Management Maturity Model.

It is supplementary material provided to everybody participating in the BPMM Identification Workshops.

The aim is to give participants a high-level understanding of the capability areas to aid in the identification of key practices or instruments used within the various capability areas.

It is helpful if participants can familiarise themselves with the factors/capability areas for which they are participating in, **prior to the Identification Workshops**.

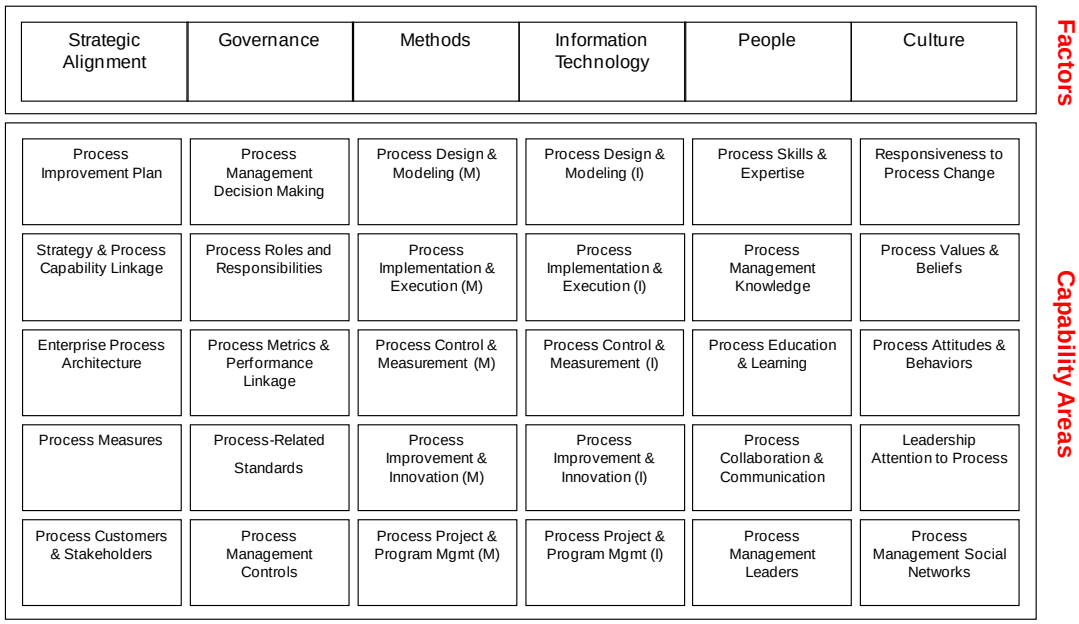

Figure 1: The BPM Maturity Model

Strategic Alignment

Within the context of the BPMM, *Strategic Alignment* refers to the continual tight linkage of organisational priorities and key processes enabling the achievement of business goals.

This factor encompasses the extent to which an integrated and co-ordinated plan exits for all process improvement projects, including how these are prioritised in line with strategic goals and objectives. It also considers the relationship between strategy and process capability and how these two areas are linked in order to optimise the delivery of strategic goals and objectives through process outcomes. Consideration is given to the existence of an enterprise-wide process architecture that defines the end-to-end processes of the organisation and describes the levels of detail required for distinct levels that support the key processes. Included is the assessment of process measures and how they are aligned with process goals and objectives. Finally, this area includes balancing the often competing requirements of process customers and stakeholders such as suppliers and the community.

Process Improvement Plan

Within the capability area *Process Improvement Plan* consideration is given to how process strategies are developed, prioritised and implemented in line with strategic goals and objectives. This includes scheduling process *management* initiatives such as process reviews to assess the extent to which a particular process contributes to the achievement of strategic goals and objectives as well as identifying, aligning and managing process *improvement* initiatives as a collective group (i.e. as a portfolio).

Strategy and Process Capability Linkage

Within the capability area *Strategy and Process Capability Linkage* consideration is given to the bi-directional relationship between strategy and process capability. This area considers whether existing process capability is sufficient to deliver strategic requirements and how imbalances between capability and requirements are managed and addressed. Consideration is also given to whether one party

to this relationship is dominant and if so, what the consequences are and how they can be managed.

Enterprise Process Architecture

Within the capability area *Enterprise Process Architecture* (EPA) consideration is given to the formalisation of an enterprise-wide process framework. Such a framework would encapsulate the key end-to-end processes of an organisation together with the requirements for decomposition of these processes to lower levels of detail. Also included is how the EPA links and relates to other enterprise-wide frameworks (such as IT, HR, asset management, risk management and similar) and the extent to which it captures and represents information that meets the needs of varying process stakeholders.

Process Measures

Within the capability area *Process Measures* consideration is given to the use of process measures in the achievement of strategic goals and objectives. This encapsulates the linkage of process measures to strategic goals and objectives, the point/s at which process measures are captured (i.e. the use of *in-process* measures as well as *process outcome* measures), the use of different types of process measures (e.g. financial and other non-financial measures) and how these process measures are subsequently used.

Process Customers and Stakeholders

Within the capability area *Process Customers and Stakeholders* consideration is given to how process initiatives are aligned and balanced between the often competing needs of process customers and other stakeholder groups. This includes how requirements are gathered and evaluated.

Governance

Within the context of the BPMM, *Governance* refers to the establishment of relevant and transparent accountability, decision-making and reward processes to guide desirable process actions.

This includes how process related decisions are made at various levels within an organisation, how reward and remuneration is related to process performance and the extent to which these optimise end-to-end process performance, how standards and controls are used to improve the consistency, repeatability and predictability of process related actions and outcomes and how process positions are defined, applied and integrated into the organisational structure.

Process Management Decision Making

Within the capability area *Process Management Decision Making* consideration is given to how decisions are made with respect to processes and on establishing an organisation-wide framework on how process-related decisions are made. This includes decisions made **within** discrete processes and process improvement projects, decisions made **across or between** processes and process improvement projects and broader decisions about the strategic direction and development of BPM.

Process Roles and Responsibilities

Within the capability area *Process Roles and Responsibilities* consideration is given to how various process roles are defined, how people are assigned to process roles, the visibility of process roles, evidence of a process career-paths and the treatment of process and functional responsibilities. Examples of process roles could include Executive Process Owners, Operational Process Owners, Process Executive Committee, Process Analyst, Process Modeller and Process Council.

Process Metrics and Performance Linkage

Within the capability area *Process Metrics and Performance Linkage* consideration is given to how the performance of individuals and/or teams is linked to the achievement of process metrics and the relationship of these measures to the remuneration of individuals and teams. Having specific performance measures that contribute to an end-to-end process at both an operational and a strategic level also contributes to this area.

Process Related Standards

Within the capability area *Process Related Standards* consideration is given to the adoption of standards to process and process management activities. Process-related standards encompasses those of a general nature such as health and safety standards which go to set a minimum level of process performance as well as more process-specific standards such as the decision to use of BPMN for creating Level 4 process models in order to enable the comparison of all models at this level.

Process Management Compliance

Within the capability area *Process Management Compliance* consideration is given to how the organisation ensures performance, behaviours and actions are in accordance with agreed BPM standards and governance structures. This area also includes how results and reported and communicated and how the results of compliance assessments are utilised in the continual improvement process.

Methods

Within the context of the BPMM, *Methods* refer to the approaches and techniques that support and enable consistent process actions throughout the process lifecycle.

Process Design and Modelling (aka Process Representation)

Within the capability area *Process Design and Modelling* consideration is given to the availability and use of a range of methods to document and depict processes. This includes formal process modelling methods used when creating executable process models e.g. BPMN, IDEF0, Petri Nets or similar as well as less formal methods such as value-chain mapping and strategy maps for the representation of process models requiring less detail.

Process Implementation and Execution (aka Process Monitoring)

Within the capability area *Process Implementation and Execution* consideration is given to the availability and use of methods in monitoring the execution of processes. This includes ensuring processes are executed in accordance with underlying models and that process inputs and outputs are in line with expectations using methods such as service-level agreements, quality checks and similar.

Process Control and Measurement (aka Process Evaluation)

Within the capability area *Process Control and Measurement* consideration is given to the methods employed in the evaluation of processes (as opposed to the evaluation and analysis of potential process improvement solutions). This includes assessing a process or process performance against competitors and industry standards using methods such as value-chain analysis, activity-based costing, benchmarking or similar.

Process Improvement

Within the capability area *Process Improvement* consideration is given to the methods used through all aspects of process improvement. This includes the identification and selection of a process for improvement as well as the generation, analysis and implementation of a proposed solution. As such, this includes the use of on-going process improvement methods such as Six Sigma, Lean, TQM and similar whilst it also includes methods aimed at questioning the actual existence of processes such as BPR, green-field thinking, process elimination and similar.

Process Project and Program Management

Within the capability area *Process Project and Program Management* consideration is given to the methods that are used in managing the entire the development, implementation and ongoing conduct of process management projects and programs. This includes the 'process of process management' as well as the more general project management methods such as PMBOK or Prince2.

Information Technology

Within the context of the BPMM, Information Technology is the software, hardware and information management systems that enable and support process-related activities through the various stages of a process lifecycle.

Process Design and Modelling

Within the capability area *Process Design and Modelling* consideration is given to the IT used in the generation, storage, access and management of process models e.g. ARIS, IDEF0, BPEL and similar.

Process Implementation and Execution

Within the capability area *Process Implementation and Execution* consideration is given to the use of technology in the automation and execution of processes e.g. workflow systems, ERP's and similar.

Process Control and Measuring

Within the capability area *Process Control and Measuring* consideration is given to how technology and information systems are used in the control of processes e.g. the use of system control variables and triggers, audit trails and similar. This area also captures the use of technology for capturing process performance data at the point of execution.

Process Improvement and Innovation (aka Process Optimisation)

Within the capability area *Process Improvement and Innovation* consideration is given to how the organisation uses technology such as simulation software in the identification, generation, comparison and evaluation of different process scenarios or solutions.

Process Project and Program Management

Within the capability area *Process Project and Program Management* consideration is given to the tools that facilitate the management of process information. They are essential, but typically less BPM-specific e.g. portals, intranet, MS-Project, knowledge management systems and similar.

People

Within the context of the BPMM, *People* encompass the individuals and groups that continually extend and apply their process-related knowledge.

This factor focuses on the people resources and how they work together to optimise their process and process management skills, expertise and knowledge. Consideration is given to what process and process management skills and

knowledge are available, how these are being combined and shared, what is required and what is being done to enable the generation of new skills and knowledge.

Process Skills and Expertise

Within the capability area *Process Skills and Expertise* consideration is given to how process skills and expertise are identified and managed. This includes how **available** skills and expertise are captured, how they are matched to those required and how any imbalance is managed.

Process Management Knowledge

Within the capability area *Process Management Knowledge* consideration is given to the knowledge people have of BPM **in general,** what BPM means **within the organisation**. This includes how/why different initiatives fit together and how the overall initiative changes over time. How is this knowledge captured and transferred? Who has it and who doesn't?

Process Education

Within the capability area *Process Education* consideration is given to the means by which people are able to improve and build their process and process management skills and knowledge. This includes the *scope* of programs as well as the *types* of programs and educators utilised.

Process Collaboration

Within the capability area *Process Collaboration* consideration is given to how people collaborate **within** and **across** processes. This includes the ability to access information about other key processes or other components of a key process, the extent to which variance in expected output is discussed with the areas impacted and the way people work together to resolve issues that impact process performance.

Process Management Leaders

Within the capability area *Process Management Leaders* consideration is given to the approach taken to recognising process management leaders. This includes the role of process management leaders have, the skill-sets and attributes that are most highly valued and how process leaders are developed.

Culture

Within the context of the BPMM, *Culture* refers to the collective values and beliefs that shape desired process and process management attitudes and behaviours.

At a strategic level consideration is given to how the organisation depicts and promotes its BPM philosophy within key medium such as its vision and mission statements or publications such as its annual report or press statements. Consideration is also given to the influence of leadership and the level of attention executive and senior management leadership gives to process initiatives throughout the organisation and how these are reflected in the attitudes and behaviours of individuals and groups connected with the organisation. On another level *Culture* integrates how the organisation responds to process change, does it actively seek change, are people generally receptive towards change with the development of process forums which enable and encourage the sharing of process knowledge and skills.

Responsiveness to Process Change

Within the capability area *Responsiveness to Process Change* consideration is given to how individuals **respond to** process change and how individuals **contribute to** the identification and instigation of process change. This includes whether process change arises as a consequence of solving existing problems as well as arising from actively questioning **why** a process actually occurs.

Process Values and Beliefs

Within the capability area *Process Values and Beliefs* consideration is given to the commitment, integration and articulation of BPM values. This includes corporate communications such as vision and mission statements, annual reports, internal presentations and articles in the press.

Process Attitudes and Behaviours

Within the capability area *Process Attitudes and Behaviours* consideration is given to how the attitudes and behaviours of individuals support, reflect and promote process thinking and actions.

Leadership Attention to Process

Within the capability area *Leadership Attention to Process* consideration is given to how senior management and executives promote and support process and process management activities though their actions and words.

Process Management Social Networks

Within the capability area *Process Management Social Networks* consideration is given to the extent to which the organisation facilitates the use of process-related forums and networks as a means of communicating and sharing process knowledge and experiences.

13.4.8 BPM Capability Areas: Key Practices (Sample)

This appendix provides a sample of the key practices from select companies across the Strategic Alignment and Information Technology capability areas. In all cases, participants identified these practices during the workshop with access to the definitions of the capability areas. The purpose of the appendix is to support the findings of the study and provide further insights into the complexities of measuring the capability areas. The diverse range of practices and levels of capability development within each area provides strong support for the use of formative rather than reflective measures for assessing BPM capabilities.

Strategic Alignment

Process Improvement Planning

Company S

- No formal mechanism at this point
- Stakeholder reviews / IT projects
- Informed Infrastructure Enabling plans
- Know why, pretty good sense of what, floundering with how – no institutionalised method of doing so at this time
- WPI Stage 1 report outcomes – asked ED's and Deans to implement things they could within the own unit
- Challenges around systems ownership, process ownership etc
- Looked at initiatives, link to strategy, but don't look at processes in their own right – go line of sight down
- Identified at exec level the need of understanding and identifying and prioritising appropriately – and resourcing accordingly
- People are more comfortable with asking why resourcing being placed where it is

Company U

- There is no structured method of looking at end-to-end processes
- BIMS has a system development process focus
- Wide reaching process improvement has been undertaken
- There is little co-ordination, consensus or communication of process work
- Initial planning is ad hoc and starts with business units through the use of improvement logs and defects

- Prioritisation is ad hoc although there is some feeling that this is starting to be grouped together and become more co-ordinated
- The work done with ISO 9001 was focused more on compliance and adherence with the approved 'as-is' and not on improvement
- There is some proactive work being done in with environmental issues (e.g. Patent Strategy) although this is not integrated
- COG has improved its planning in line with strategy and environmental issues using a system of high level issues being logged to a Process Board
- The linking of issues by the Process Board is limited
- There is little balance between strategic and operational focus with an emphasis being on operational issues such as resourcing
- There is no clear interpretation of some initiatives e.g. Integrated Channel Management
- Rather than prioritising against strategic goals it is more a case of first-in-first-served
- There is a feeling that things are better this year with the realisation of the importance of taking time out and thinking about things and the recognition that process planning forms a part of strategic planning and that hand-overs between strategic planning and the operationalisation of that planning is not good
- BIMS are trying to pick things up along the way and through communications with the Product Managers
- There is no co-ordinated framework to guide the way people think and work with process and process management

Company W

- after training A05s identify processes in their area that need attention, talking to FC to see what has happened, Julie to co-ordinate with FC on how to make that work, look at capacity and resource allocation, delivery of service/resourcing/records management / move to new building
- Have done high level value chain to look at top down and working towards vanilla process patterns, variations of types of work

Strategy and Process Capability Linkage

Company S

- Making changes that are in conflict and asking the same people to simultaneously make changes that pull them in different directions
- Unified Session Model
- Filling gaps and playing catch-up, don't think about what the process capability is, very much in catch up mode, ambitious nature of current strategy and little consideration of capability

- 4 enabling plans, no idea or understanding of import of the plans
- Not aware of current process capability – need to identify what the capability is
- University level and then at organisational unit levels – cascading approach to be adopted at all levels

Company U

- There is a push to look at process as radical innovation and talk about this being a way of gaining international recognition although this is uneven across the organisation. The idea of the "ideal patent process" was started
- As a part of ISO 9001 there is recognition of a difference in using process capability but it has not been overtly discussed to date
- When considering process capability the focus is on looking at the status-quo and not on improving the process
- There has been some consideration of changing process capability by streamlining with other regions however once again this is looking mostly at the logistics of managing workload and not on changing the underlying processes
- The short-term solution for a shortfall in process capability is to adopt a resource strategy of recruiting more examiners. However, there is also the recognition that this is not necessarily a viable business solution and there is a need to look at more than just resourcing. At the moment this has resulted in talk but no action and thus a view that little is being done to develop process capability in line with strategy
- There is an issue in that there is internal and external (customer) resistance to increasing the use of policy and legislation to change process. For example, it is known that a lot of trademarks don't last 10 years but rather they last 3 years however this is process is limited by an existing international treaty. It is perceived that there is irony in the fact that the IP industry does not suit innovation

Company W

- Still sorting out, strategy map and BSC, not done business plan approach, must connect business plan to other plans within the government strategic plan – Financial Audit Act
- Process capability helps prioritise – what do we **have** to deliver on and what else can we do
- No real feeds between the where do we want to go and being part of the government

Enterprise Process Architecture

Company S

- Process Model – basic conceptual model, some detail underneath (2 or 3%)
- Considering making this available (your Company S booklet)
- Gathered data – working out strategy for how to deploy and leverage this, work out who needs what, what to give to who
- Varying levels of understanding – traditionally people didn't think about processes but rather the people that do things
- The invisibility of enterprise architecture made it difficult to get engagement
- Linkages to other frameworks, legislation, people, data identified but understanding and articulation may need to be progressed

Company U

- Nothing currently exists but there are plans to start working on this
- There are bits and pieces and pockets of process models but these are not related or are linked to discrete systems
- Existing process models are not used
- The top level processes have been identified and are felt to be okay however, these have not been devolved to lower levels
- A lot of high-level process modelling was done in ARIS for ISO manuals but these are not used
- Process models are not used for identifying improvement possibilities
- There has been no organisational decision about what an enterprise process architecture might look like including what levels would be reflected, what details would reside at each level, how such an architecture would be used and link to other enterprise architectures or frameworks or what forms of representation might be used for various levels

Company W

- Different levels, what the department is doing and what FC is doing
- Don't have a picture of EPA, but have break down of case management within Company W
- Enterprise Architecture for department struggling in terms of commitment from staff and department, lack of mgmt support, and how things link together, knowledge loss, committee starting in the next few weeks, process architecture/information/technology/group

Process Measures

Company S

- Understanding the issues with core processes and enabling processes through WPI Stage 1 and re-testing these as part of the DEST[127] funded Workplace Productivity Program, i.e. have they gone away yet?
- Measuring the condition of processes
- Still lots of work to be done on looking at in-process measures
- Measurement structures exist as part of operational and strategic management linking measures to strategy but the link to processes may not be there (or is very tenuous)

Company U

- A gap-analysis conducted for ISO 9001 found that a lot of measures already existed but:

  Existing process measures are largely ad hoc

  Most are output and outcomes based with little focus on in-process, enabling measures

  Cycle times, response times and back-log monitoring are prominent
- There is some use of Customer Service Charters and Service Level Agreements but there is only a tenuous link with strategy, a focus on meeting the measures and not using these to drive process improvement
- Some volumes and forecast figures are captured but these are not high level and are not process based
- Benchmarking with international peers is beginning to be used with examinations in patents but is in its infancy
- There is a need to relate process measures to strategic outcomes
- Situational measures are related to IT performance and work-arounds that have been developed

Company W

- Working out existing stats and performance and looking to measure what we want to measure
- Looking at measuring at the end not throughout the process
- Expecting that as understanding of process improves will be able to address critical points along the way
- In CPIP were looking at BSC but has fallen away – difficulty in reconciling with departmental – no data quality on even basic stuff

[127] Now DEEWR

Process Customers and Stakeholders

Company S

- WPI Stage 1 included identification of customers and stakeholders, through describing the stakeholder context of functional areas. In addition, we developed process profiles that included identification of process stakeholders
- Facilitated the organisation in identifying stakeholders but whether anything shifted because of the identification is another step
- Unevenness of recognition of requirements for various stakeholders thus difficult to balance at this point – Service Alignment Project
- Challenges around internal and external environment
- A lot of education needed

Company U

- Existing stakeholders are thought to inhibit process development
- It is felt that the first step will take a long time and then people will behave like sheep
- Small-medium enterprise attorneys are driving change by pushing for new ways of interacting as they don't have the capacity of traditional larger firms. It is thought that this group presents a new generation that are more internet savvy and entrepreneurial

Company W

- Try to understand the different court sites throughout QLD and look at organisational structure to find person to talk to
- Judicial focus group happening for endorsement and support
- Litigants in Person
- Lots of things happening to engage stakeholders along the way
- Staff important stakeholders and have been a focus
- Including key external people in some areas and will have to keep doing this (P&E thing)
- Previously anecdotal as stakeholders not really known
- Still in formative stage, but increasing to include Law Society
- Method to identify who they are before going out to involve them (method was to discuss with people who are regularly involved in the process)

Information Technology

Process Design and Modelling

Company S

- Visio, informal lower level drawing tools

Company U

- ARIS (in the past – no longer)
- Holo-centric
- Oracle Designer
- I-Graphix
- Visio

Company W

- ARIS
- System Architect (in the past) and will be migrated across, doing information models as well as process models
- Some use of VISIO, excel and power-point for Value Chain during early stages
- Identify IT involved in each task within the model, and use of other variables to support process activities
- Central repository, product support (local), ability to do information side without too much customisation, reporting without great deal of knowledge, linking of the different views

Process Implementation and Execution

Company S

- Aware of – have some capability – not used much
- Touchpaper – implementation
- eBox, myCompany S
- Alesco (HR)
- Banner Student Finance
- CASIMS

Company U

- Electronic Data Records Management System
- Borland for Software Development Life Cycle

- Bulk Upload/s *(future)*
- Interface/s *(future)*
- B2B technologies *(future)*

Company W

- No workflow but looking at going there
- CIMS (Civil Information Management System)
- QWIC (QLD Wide Interlinked Courts)
- CLAIMS (Civil Listing and Information Management System)
- CAMS (Court of Appeal Mgmt System)
- QJAS (QLD Jury Administration System)
- IJIS (Integrated Justice Information Strategy) – will have a number of interfaces to talk to other criminal agencies
- Spreadsheets
- SAP
- TRAILS (used for Agency work by regional courts)

Process Control and Monitoring

Company S

- Not a lot of performance data being captured
- Hard-coded control – limited capacity to change
- CASIMS most sophisticated
- Don't have closed processes
- Some components are integrated but ad hoc from a corporate perspective
- BEIMS – job management system
- Very poor in research – some reliance on access databases

Company U

- Use of in-system events and triggers
- Batch processing
- Spreadsheets
- Administration system for workflow event checking – the focus is on measuring where they area and measure discrete steps not the process as a whole

Company W

- JK
- Caseflow – uses triggers to remind to issue a notice – doesn't work well

but the concept is there – related to CIMS (S&D only)

- Similar in CLAIMS – in Magistrates Court only – the trigger is you put a response in a diary and this will generate printing and then reports at various times for things that are still open
- Crystal reporting for Mag Court
- Monthly reporting looking at performance data
- A lot of things are kept in people's heads about what to do in certain circumstances and not in systems

Information Technology – Process Improvement and Innovation

Company S

- None at all, although key on the horizon
- Some thought of how to use IT with the Enterprise model

Company U

- Lotus notes (for improvement logs)
- On-line feedback forms (e.g. Customer Feedback forms)
- Touch- paper (for defect tracking)

Company W

- ARIS is intended for this in the future
- Couldn't get System Architect to do planning so used excel to do matrices – simulator was separate and quite expensive so didn't use but didn't have resources and information to use either

Process Program and Project Management

Company S

- PM environment, web page and management of process information to support that
- Web version of yourCompany S (coming)
- CASIMS
- Register of initiatives – part of initiative management that has been developed

Company U

- MS-Project
- MS-Excel
- Plan by Feature *(future)*

Company W

- JAG Net – Intranet
- Courts Website
- Email is over used
- Lot of MS-Powerpoint
- eDocs for administrative document management (small scale currently) but will be used as a repository – still need training and deployment
- Telephone and written (MS-office in general)
- ARIS
- MS-Project
- EVOLVE – training tool for what you need to know to work in the courts, source of information about processes
- Databases behind the Case Management systems for reporting

13.4.9 BPM Case Study Report

Company S

Business Process Management

- Case Study Report -

Tonia de Bruin

February 2008, Brisbane

Executive Summary

An increasing need to be competitive within the university sector resulting from changes in federal government funding, the need to attract new students and a desire to establish a one-university philosophy led COMPANY S to consider a new way of conducting business. The subsequent Work Process Improvement project (2005-2007) and the DEST funded Workplace Productivity Program (commencing in 2007) are evidence of undertaking a business process management (BPM) approach to business. Strong executive support stemming from the appointment of a new Vice Chancellor in 2001 has resulted in a centralised and strategically driven approach to BPM built upon enablers of *Executive Buy-In*, organisational commitment and a planned and inclusive approach to BPM.

The principle drivers of the *BPM Initiatives* can be classified as strategic, operational, organisational and process based. Strategic drivers stemmed from the 2006 strategic imperative and the desire to sustain COMPANY S's position as a leader in the tertiary sector. Operational drivers arose from changes in government funding and increased pressures to meet compliance requirements. Organisational drivers came from a desire to overcome natural and structural barriers to create a one-university culture whilst process drivers stemmed from individual recognition that COMPANY S needed to more readily identify, understand and improve existing process performance.

By exploring COMPANY S's BPM journey, we identified a number of risks and opportunities arising from the current *BPM Initiative*. The risks were primarily in the sustainability and growth of BPM within COMPANY S incorporating an over-reliance on key staff, securing funding for future initiatives and maintaining consistency and desirable behaviours as COMPANY S pushes BPM throughout the wider University. The strategically driven focus on BPM and the high levels of executive support provide COMPANY S with a number of opportunities for progressing. On the one hand, this enables COMPANY S to develop BPM capability in foundation setting areas such as those found in the Strategic Alignment, Culture and Governance factors. On the other hand, being able to establish this foundation provides a strong position from which to progress BPM

to the wider University community and to optimise the selection of appropriate methods and IT. The future benefits from the use of such methods and IT will potentially improve COMPANY S's (human) resourcing of BPM.

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