

**AN APPROACH TO ASSIST MANAGERS OF SMEs
TO BENEFIT FROM BUSINESS PROCESS
MANAGEMENT**

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A research thesis submitted in fulfilment of the requirements for the degree

DOCTOR of PHILOSOPHY

In

Information Technology

at the

VAAL TRIANGLE CAMPUS

of the

North-West University

Vanderbijlpark

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2016

DECLARATION

I, Dina Elizabeth Jacobs, student number: 22701273 hereby declare that the thesis titled *An approach to assist managers of SMEs to benefit from business process management* for Doctor of Philosophy is my own work and that it has not previously been submitted for assessment or completion of any postgraduate qualification to another University or for another qualification.

ACKNOWLEDGEMENTS

From an academic perspective, I want to thank Prof Paula Kotzé for her supervision and doing far more than expected and for Prof Alta van der Merwe for making time available to review the process and the content. A special word of thanks to Dr Sonja Gilliland for managing the process at the North-West University and I have to mention the support from Ms Amanda Smith over the years. During the initial phase Prof Aurora Gerber made a contribution and at the end Glenda Holcroft assisted with the editing.

As practitioner, I want to thank my colleagues at triVector for your support, understanding and contribution. There were also those making time available to share their expert opinion as part of the evaluation, including Mike Steyn, Andre Roux, Paul Whalley, Geoffrey Scott and Catherine Wijnberg.

From a personal perspective, the BPM@SME research was part of the family. Carel thank you for joining me in Belgium and for providing balance and time on the road trips to ‘think’. Pieter it all started to come together when you introduced me to ‘Osterwalder’ and Ian you draw the concept diagram for the BPM Canvas and develop the Action Maze prototype – thank you. For my parents thank you for your prayers.

There is a bigger purpose in life and I want to honour God for this opportunity and this journey. I also hope this may be a step on the road from success to significance.

SUMMARY

Growing small enterprises to become medium enterprises, with the aim of job creation, is a priority in South Africa. The lack of business skills, including business process management (BPM) skills, required to manage small and medium enterprises (SMEs) through the transition of growth is one of the factors contributing to the limited growth of SMEs in South Africa. Another constraint on SME growth is the reality of resource poverty in the SME domain in South Africa.

BPM is regarded as a management approach that is relevant to the management of organisational change, value optimisation and process improvement. The transition of an SME from an early-stage entrepreneurial activity to an established business entity involves organisational change, value optimisation and process improvement, which explains the relevance of BPM to SME growth. Given the reality of SME resource poverty, no suitable BPM approach currently exists that can be used to support SME managers during the typical transitions associated with SME growth. Although such a BPM approach on its own will not solve the problem of SME growth and job creation, it is argued that creating awareness of BPM as a management approach and creating awareness of the transitions related to SME growth is one small step on the journey towards supporting SME growth in South Africa.

The research objective is to develop a BPM Approach that can be used to help SME managers, during typical transitions of SME growth, to benefit from BPM as a management approach. The constraints to be addressed are the criticism of the existing SME growth stage models as input towards the definition of the SME growth transitions and finding a BPM approach that is supportive of resource poverty. One sub-objective of the research is to define a model that describes the transitions associated with SME growth. A second sub-objective is to define a BPM framework supportive of the reality of SME resource poverty. Emanating from these sub-objectives are a number of other sub-objectives to ensure self-sufficiency in the use of such a BPM framework, cross-referencing the relevant BPM practice per SME growth transition, and ensuring that the solution to the problem is user-friendly and non-intimidating.

The proposed 5S SME Growth State Transition Model addresses the criticism of the concept of 'stages' in the existing SME growth stage models. The BPM CanvasTM Framework developed together with the WIN Approach and the BPM Patlets form a proposed solution, the BPM@SME Approach, supportive of resource poverty and the requirement of self-sufficiency. It is argued that the BPM@SME Approach can be used to help SME managers to benefit from BPM during SME growth. The BPM@SME Action Maze is a prototype to package the BPM@SME Approach in a more user-friendly and less intimidating interactive digital solution.

Keywords: Small medium enterprise (SME), SME growth, business process management (BPM), SME growth stage models, BPM approach, BPM framework, BPM design principles, SME resource poverty.

PREFACE

The following Writing Style is used for the thesis:

- APA6 is used as reference style as it is more comprehensive and allows for referencing electronic sources.
- Italics or single quotation marks are used to emphasise words or phrases.
- Double quotation marks are used for direct quotations.
- UK English is used.

In a number of the chapters the existing knowledge is analysed and for that purpose the verbatim quotations are used. The reference of the resource is included but the quotations are not marked with double quotations and a specific page number. The specific chapters including these verbatim references are:

- *Chapter 4*: SME growth stage models from various authors as referenced in the chapter.
- *Chapter 5*: The Business Model Generation [Osterwalder & Pigneur, 2010] used for an analogy.
- *Chapter 5*: Various accelerators such as BPM Driver and Value Proposition content from various authors as referenced in the chapter.
- Chapter 6: Design principles [Greefhorst & Proper, 2011; Hoogervorst, 2011; Perroud & Inversini, 2013].
- *Chapter 8*: The action maze used as analogy for the BPM@SME Action Maze Prototype.
- The tables from Chapter 4 and Chapter 6 are re-used in Chapter 7 and in Appendix B.

The peer-reviewed conference paper published by Jacobs, Kotzé, van der Merwe, and Gerber [2011] was based on part of the research presented in this thesis.

For reasons of saving space, shortened names are used in some of the tables.

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Chapter 1 : Introduction

1.1 Introduction

The focus of this thesis is on developing an approach to assist the managers of small and medium enterprises (SMEs), in South Africa, to benefit from business process management (BPM). The study is referred to as the BPM@SME research, for short. The BPM@SME research is positioned in the domain of business process management with the emphasis on addressing a problem (the lack of business skills) in the domain of small and medium enterprise growth.

A business process describes the work that is being done in a business, and can be defined as a collection of activities that takes one or more kinds of input and creates an output that is of value to the business [Hammer & Stanton, 1999]. The business process further describes the control of flow between the activities, the data related to the input and the output, and the organisations and resources that are directly associated with the business process [Scheer, Abolhassen, Jost, & Kirchmer, 2002].

Business process management is the discipline related to managing business processes. BPM is specifically valuable during times of change or transformation. BPM is seen mainly as a management approach [Lee & Dale, 1998; Miers, 2011], with a key component being the support of organisational change, value optimisation and ongoing performance improvement, as defined by Forrester Research [Miers, 2011]. Forrester Research is an independent technology and market research company that provides advice on the existing and potential impact of technology to its clients and the public [Forrester, 2015]. Alternatively, the term BPM is also used to describe an integrated collection of software technologies, also known as a business process management suite (BPMS), that enables process transparency resulting in better management of the business process as well as the work in the process [Sinur & Hill, 2010; Weske, 2012]. In the BPM@SME research, the term BPM will be used to refer to BPM as a management approach, while BPMS will refer to BPM from the enabling technology perspective.

Small and medium enterprises are defined in a number of different ways, generally with reference to the number of employees and/or the revenue and/or the assets. The World Bank bases the definition of an SME on the number of employees. A small enterprise would employ between five and 19 employees and a medium enterprise would have between 20 and 99 employees [World Bank, 2014]. The European Union (EU) defines SMEs as firms with ten to 250 employees [World Bank, 2014]. In South Africa the number of employees for a medium enterprise varies per sector from 100 to 200 as discussed in section 1.2.2.

SMEs play a significant role in the economy. For example, approximately 95% of all firms in the EU are considered to be SMEs [Cassell, Nadin, & Gray, 2001]. These SMEs in the EU provide work for

approximately 65 million people. In the USA, 99% of employers are small firms [Cassell, Nadin, Gray, & Clegg, 2002]. In South Africa, with a high unemployment rate, the South African government has set the growing of small enterprises to become medium enterprises as top priority [Herrington, Kew, & Kew, 2010]. The expectation is that SME growth will result in job creation in South Africa [DTI, 1995].

The transition from an early-stage entrepreneurial activity to an established business activity is an indication of SME growth. Only 2.3% of the total adult population in South Africa have become established business owners in comparison to the average of 8% in efficiency-driven economies. The focus of efficiency-driven countries tends to be on higher education and training, goods market efficiency, labour market efficiency, financial market sophistication, technology readiness and market size [Turton & Herrington, 2012]. SME growth is a challenge even globally, with the average life cycle of SMEs in the region of five years or less [Jones, 2009].

The shortage of business skills among SME managers is an acknowledged constraint on SME growth [Hanks, Watson, Jansen, & Chandler, 1993; Herrington et al., 2010; Jones, 2009]. In addition, SME resource poverty, such as limited funding, time and specific expertise, is also a constraint [Welsh & White, 1981]. With regard to SME resource poverty, do-it-yourself (DIY) management approaches supporting self-sufficiency are a popular way to assist SME managers to gain the knowledge required to successfully grow an SME.

The research presented in this thesis proposes the Business Process Management at Small Medium Enterprise (BPM@SME) Approach. This BPM@SME Approach aims to guide the SME manager, in South Africa, to benefit from BPM as a discipline when managing the change and transition associated with SME growth. The proposed BPM@SME Approach recognises the reality of SME resource poverty and the importance that such an approach should be geared towards self-sufficiency. The BPM@SME research should consider the impact of SME growth on the alignment of process, people and information technology.

The purpose of this chapter is to provide an overview of the BPM@SME research. Section 1.2 provides background to the research with reference to BPM as a discipline, as well as an introduction to SME growth. In section 1.3 the research is motivated and the milieu is set for the research with the problem statement, the identified gap, and the reasoning that led to the definition of the research objectives. Section 1.4 gives an overview of the research design. In order to position the research within the reference framework of an SME manager the jockey, horse and course analogy is included in section 1.5 as part of the scope definition. An overview of the rationale of the study is included in section 1.6, followed by the outline of the thesis in the last section of this chapter.

1.2 Background

1.2.1 Business Process Management

The Forrester Research definition of BPM positions BPM as a management approach, highlighting the following components [Miers, 2011]:

- BPM is a broad framework of methods, approaches, techniques and technologies.
- BPM supports organisational change, value optimisation and ongoing performance improvement.
- BPM includes a wide range of improvement methods such as Lean [Womack & Jones, 1996] and Six Sigma [Schroeder, Linderman, Liedtke, & Choo, 2008], along with customer-centric (outside-in) engagement approaches [Towers, 2010] and organisational change management.
- BPM implements an evolving business strategy enabled by an enterprise architecture that is flexible and adaptable.
- BPM can help to focus on strategic priorities as well as opportunities, to both differentiate the value proposition and sharpen the competitive edge.

The origin of BPM can be traced back in time. Taylor, for example, sought to improve industrial efficiency during the early 1900s [New_York_Times, 1915]. A business process describes work being done, and Taylor regarded the way in which a business works as worthy of observation and study [New_York_Times, 1915]. Smith [2008], in his famous 1776 example of the pin factory, was one of the most important people in the 18th century to describe processes. After the introduction of labour division, the same number of workers made 240 times as many pins as they had been producing before. Going back to the Old Testament, King Solomon in 1 Kings 5 [Bible, 2008] applied a number of BPM concepts with the building of the Temple. These BPM concepts include, although not named as such, the importance of process ownership, outsourcing, supply-chain management, end-to-end process management, value contribution, resource allocation, process management and quality management.

Processes have therefore been part of business for many centuries, whether formally documented and managed or just informally running as part of daily operations and decision making. The question is therefore not whether BPM is relevant for a business, but rather to what extent an SME could benefit from BPM.

1.2.2 Small and Medium Enterprise Growth

The definition of SMEs in South African legislation makes provision for SME growth with reference to micro, very small, small and medium enterprises. In South Africa a small business is defined, per sector, by the number of employees and/or turnover and/or assets as defined in the National Small Business Act of 1996 [DTI, 2008]. As an example, the criteria for a medium enterprise vary per sector from 100 to 200 employees with a turnover of between R5 million and R64 million and assets with a value of between R3 million and R23 million. A more generic and less complex classification is found in the South African

Broad-Based Black Economic Empowerment Act 46/2013, Statement 003, [DTI, 2015] with the following classification:

- An exempted micro enterprise (EME) is a business with a turnover of less than R10 million.
- A qualifying small enterprise (QSE) is a business with a turnover of less than R50 million.

When SME growth is considered, the definition of the level of entrepreneurial activity should also be taken into account. Entrepreneurial activity is defined by the Global Entrepreneurship Monitor (GEM) as any attempt at new business or new venture creation. Self-employment, starting a new business organisation or expanding an existing business are examples of entrepreneurial activity [Xavier, Kelley, Kew, Herrington, & Vorderwulbecke, 2012]. An additional concept is the differentiation between necessity-driven and opportunity-driven entrepreneurial activity. The necessity-driven entrepreneurs would prefer full-time employment, if such a job opportunity was available. Necessity-driven entrepreneurs are not SME growth oriented. With regards to SME growth, the target audience for the BPM@SME research would be the opportunity-driven SME managers.

SME growth is associated with a change in status of the SME through various transitions. The South African Department of Trade and Industry (DTI) defines the transition cycle associated with SME growth from an informal to a formal business as 1) seed stage, 2) operational, 3) registration for VAT (value added tax), 4) permanent employment, and 5) registration as a legal entity [DTI, 2008].

The Global Entrepreneurship Monitor defines the transition based on the entrepreneurial status as: 1) nascent entrepreneurial activity – more than three months with no salaries, 2) early-stage entrepreneurial activity – salaries paid for three to 42 months, 3) established business ownership – operational for more than 42 months, and 4) discontinuation of a business – either by selling, shutting down, or otherwise discontinuing an owner/management relationship with the business [Xavier et al., 2012].

In addition to the DTI and GEM classifications of transitions, a large number of SME growth stage models exist. In their review of research on small firm growth, Davidsson, Achtenhagen, and Naldi [2005] define growth stage models as a description of the distinct stages of SME growth as well as the set of typical problems and organisational responses associated with each stage. In a literature review of SME growth stage models, Levie and Lichtenstein [2010] considered 104 distinct SME growth stage models published during the period 1962 to 2006. Although a wide variety of SME growth stage models were published over the years, these SME growth stage models do not escape criticism. It is important to address such concerns, as SME growth stage models are important for SME managers in order to understand, manage and predict problems that are likely to arise during SME growth, specifically in South Africa.

1.2.3 Lack of a BPM Approach to assist SME Managers

The intention of the research was to find a BPM approach aligned with the Forrester definition of BPM, available within the constraints of resource poverty and packaged to enable the SME manager, in South Africa struggling with resource poverty, to grow towards being self-sufficient in applying BPM.

There are three categories of BPM-related material to consider in the BPM body of knowledge to establish whether such an approach exists:

- The first category includes BPM material addressing the establishment of a BPM Centre of Excellence targeting the large corporate market. The work of Becker, Kugeler, and Rosemann [2011], Jeston and Nelis [2008] and Snabe, Rosenberg, Miller, and Scavillo [2008] are part of this first category. The sources included in this first category are comprehensive and therefore a relatively good fit with the Forrester definition of BPM. From a resource poverty perspective, the investment of money required to purchase the material is relatively small; however, the investment in time to master BPM based on these sources is extensive, as these sources are not prepared in such a way that the SME manager can be self-sufficient in applying BPM.
- The second category includes BPM approaches based on the intellectual property of consulting firms or associated with enabling technology products. This puts the use of these BPM approaches out of reach for a large number of SME managers in South Africa from a financial point of view. An example of a product related source is the article ‘What organizations need is a BPM roadmap with clear benefits’ [Davis, 2010]. At the time of publication Davis was working for IDS Scheer AG and he was referring to material specifically trademarked by the company IDS Scheer AG. Similarly the material published by Tregear [2010] is associated with the consulting firm Leonardo. Examples of references to material associated with BPM as an enabling technology are also found in IBM [2012] and Infosys [2014].
- The third category includes material that uses a combination of DIY, SME and BPM as phrases. Although the booklet *BPM: Basic for Dummies* [Garimella, Lees, & Williams, 2008] is available, it focuses on a specific BPM enabling technology product. Other sources [Aksu, Vanhoof, & De Munck, 2010; Barnard, 2011; Chong, 2007; Dehbokry & Chew, 2014; Feldbacher, Suppan, Schweiger, & Singer, 2011; Hruban, 2014; Imanipour, Talebi, & Rezazadeh, 2012; Kolar, 2011; Kolar & Pitner, 2012; Nielen, Jeske, Schlick, Arning, & Ziefle, 2010] referring to the concept of BPM for SMEs either acknowledge the lack of a BPM approach to assist SME managers, or provide references that focus on a more technical approach or highlight a specific component of such a BPM approach.

The search for a suitable BPM approach to support BPM as a management approach [Miers, 2011] – one that would take into account the constraints of resource poverty and would be packaged to enable the SME manager to grow towards self-sufficiency in applying BPM – was therefore not successful. There is thus a gap in current research that calls for the development of a BPM approach to assist SME managers.

1.3 Problem Statement and Research Objective

The main objective of the research reported on in this thesis (the BPM@SME research) is to contribute to the BPM body of knowledge through the development of a BPM approach that would assist SME managers to benefit from BPM as a management approach during SME growth.

Making a difference generally implies an understanding of constraints and the changes required to resolve these constraints. With reference to Theory of Constraints [Goldratt, 1990], the following basic questions relating to the constraints and related changes can be used as a starting point to define the problem, the gap and the research objective:

- What to change?
- What to change to?
- How to cause the change?

The answer to *what to change* gives an indication of the problem. The question *what to change to* assists with the identification of the gap to be closed, resulting in the problem statement. The research objective is derived from answering the question *how to cause the change*.

1.3.1 Problem Statement

The context of the problem addressed by BPM in the BPM@SME research is the growth of SMEs. Growing small enterprises to become medium enterprises, with the objective of job creation in South Africa, is a top priority for government [DTI, 1995]. The lack of business skills required to manage SMEs through the transition of growth is one of the factors contributing to the limited growth of SMEs in South Africa. The lack of business skills also includes the lack of a BPM approach to assist SME managers to benefit from BPM. The problem, or *what to change*, is the lack of a BPM approach to assist growth-oriented SME managers to benefit from BPM, specifically to manage the transition from early-stage entrepreneurial activity to established businesses. The expectation is not that the BPM@SME research will solve the problem of SME growth and job creation; however, it is argued that creating awareness of BPM as a management approach (a business skill) to assist with SME growth is one small step on the journey towards supporting SME growth in South Africa.

The next question to answer, to understand the constraints related to the problem better, is *what to change to*. With reference to the Forrester definition of BPM [Miers, 2011], BPM is considered to be a management approach relevant for organisational change, value optimisation and process improvement. The transition from a small enterprise to a medium enterprise, or from an early-stage entrepreneurial activity to an established business entity, involves organisational change, value optimisation and process improvement. The gap to be closed is the definition of a BPM approach to assist SME managers to benefit from BPM as discipline during SME growth and the related transitions. The first constraint related

to the problem is therefore an understanding of the typical transitions related to SME growth in order to benefit from BPM during these transitions.

An additional constraint to consider is that the SME manager must be able to master the BPM skill within the limits imposed by the lack of commercial infrastructure [Turton & Herrington, 2012]. The lack of commercial infrastructure is partly related to the phenomenon of SME resource poverty (lack of time, skills and funding) [Welsh & White, 1981]. In order to up-skill the SME manager to understand BPM as a management approach for SME growth, there is a gap to be filled by a BPM approach to help SME managers to benefit from BPM without major financial investment.

The closing of the gap, or *what to change to*, involves providing a BPM approach that takes into account the transitions associated with SME growth as well as the constraint imposed by SME resource poverty. The *problem statement* for the BPM@SME research is therefore stated as follows:

Given the reality of SME resource poverty in South Africa, no suitable BPM approach currently exists that can be used to support SME managers during the typical transitions associated with SME growth so as to benefit from BPM as a management approach.

1.3.2 Research Objective

Defining the research objective is related to answering the question *how to cause the change*. The objective of the BPM@SME research reported on in this thesis is stated as follows:

To propose, develop, package and evaluate a BPM Approach that can be used to help SME managers (in South Africa) during typical transitions of SME growth, to benefit from BPM as a management approach.

The following sub-objectives have been identified to support the main research objective, with an illustration of a summarised version in Figure 1-1:

- To assess the current SME growth stage model and BPM approach landscape:
 - To study existing SME growth stage models to determine whether these models define the typical SME growth state transitions.
 - To study existing BPM approaches to find a BPM approach supportive of the reality of SME resource poverty.
- To derive typical SME growth state transitions using SME growth stage models as the source, with the developed research artefact being the 5S SME Growth State Transition Model. The 5S SME Growth State Transition Model is an assessment instrument for SME managers to determine potential state transitions to manage as a result of growth.
- To develop, package and evaluate a BPM approach supportive of the reality of SME resource poverty, with the developed research artefact being the BPM CanvasTM. The BPM CanvasTM is a framework and an approach to develop a BPM roadmap.

- To ensure self-sufficiency in using the BPM approach, with the developed research artefact being the BPM Patlets. The BPM Patlets, based on the concept of patlets as defined by Coplien and Harrison [2005], are short summaries of the problem and solution for BPM patterns.
- To package the BPM Patlets, cross-referencing the SME growth state transitions from the 5S SME Growth State Transition Model, with the developed research artefact being the BPM@SME Approach. The BPM@SME Approach provides BPM guidelines per SME growth state transition.
- To package the BPM@SME Approach in a user-friendly, non-intimidating way, with the final research artefact being a BPM@SME Action Maze, also known as an interactive case study [Arneil & Holmes, 2009].

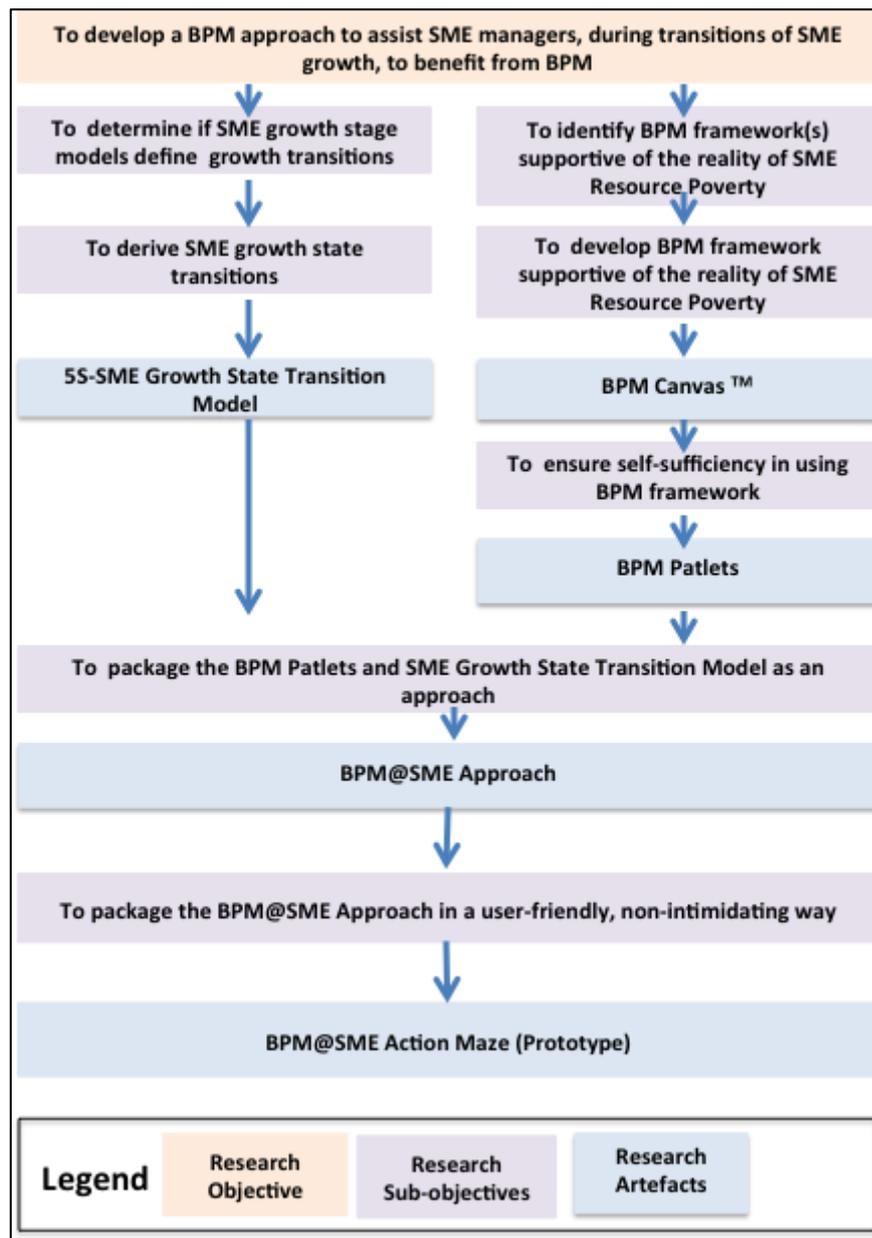


Figure 1-1: Research Objectives

1.4 Research Design

Within the context of this BPM@SME research, the combination of the process, methods, artefacts and guidelines is defined as the research strategy. Hevner, March, Park, and Ram [2004], as well as Peffers, Tuunanen, Rothenberger, and Chatterjee [2007], described the research characteristics that are required in order for a research initiative to be considered as design science research (DSR). The characteristics specify inter alia that the research should produce an artefact to address a previously unsolved and important business problem. The BPM@SME research produces such an artefact.

The research process proposed by Vaishnavi and Kuechler [2013], as depicted in Figure 1-2, is adopted as the dominant research process, with the key steps of the research process:

- Awareness of problem
- Suggestion
- Development
- Evaluation
- Conclusion.

The circumscription process, as indicated in Figure 1-2, allows for an iterative cycle, in which the research process is interrupted and forced back to a new cycle of awareness based on a better understanding of the problem and the suggested solution.

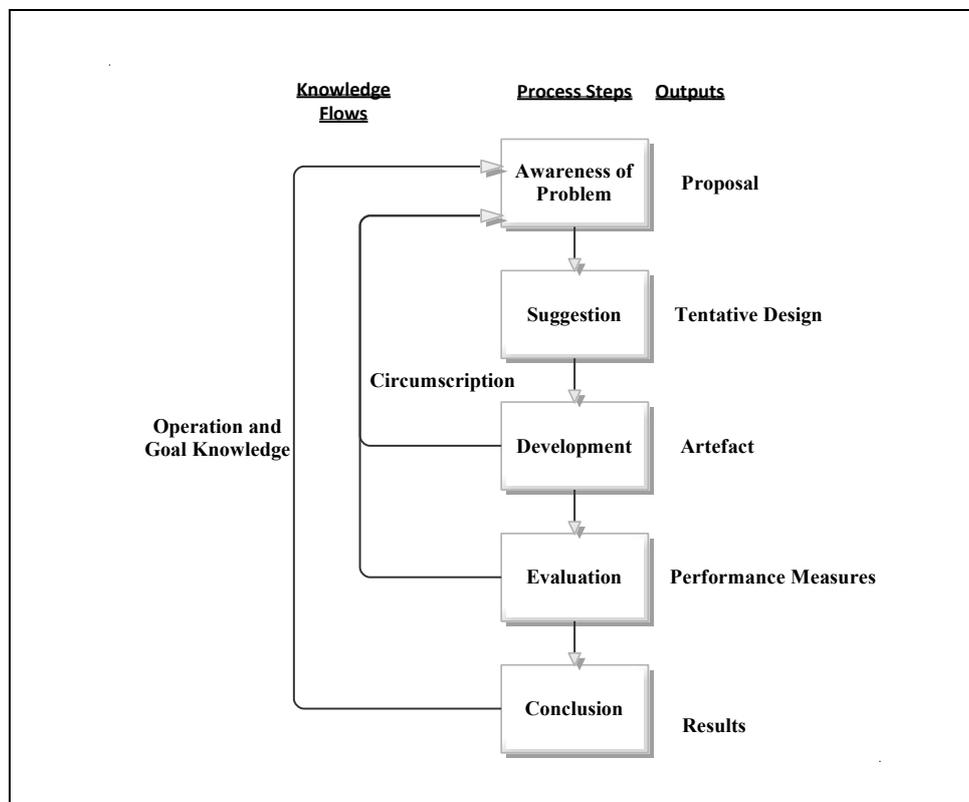


Figure 1-2: Design Science Research as Research Design Foundation [Vaishnavi & Kuechler, 2013]

The BPM@SME research involves six iterative research cycles as illustrated in Figure 1-3. The research cycles are mapped to the research objectives as follows:

- *Main Research Cycle*: To propose, develop, package and evaluate a BPM approach that can be used to help SME managers, during typical transitions of SME growth, to benefit from BPM as a management approach.
- *Research Sub-Cycle 1*: To derive typical SME growth state transitions using SME growth stage models as the source, with the developed research artefact being the 5S SME Growth State Transition Model.
- *Research Sub-Cycle 2*: To develop, package and evaluate a BPM approach supportive of the reality of SME resource poverty, with the developed research artefact being the BPM CanvasTM.
- *Research Sub-Cycle 3*: To ensure self-sufficiency in using the BPM approach, with the developed research artefact being the BPM Patlets.
- *Research Sub-Cycle 4*: To package the BPM Patlets, cross-referencing the SME growth state transitions from the 5S SME Growth State Transition Model, with the developed research artefact being the BPM@SME Approach.
- *Research Sub-Cycle 5*: To package the BPM@SME Approach in a user-friendly, non-intimidating way, with the final research artefact being a BPM@SME Action Maze prototype.

1.5 Scope Definition of the Study

The BPM@SME study explores the definition of an approach to help growth-oriented SME managers to benefit from BPM as a management approach. The suggested solution is a BPM@SME Approach based on the enhancement of existing SME growth stage models, with the objective of providing guidance for SME managers during the transition process from being a small enterprise to becoming a medium enterprise.

The scope of the research is best defined by highlighting both inclusions and exclusions. The following are a number of the inclusions and exclusions:

- The intention is to provide guidance for SME managers, and not to implement solutions.
- The guidance is for SME managers who are interested in growing an SME towards a sustainable business, and not for early-stage start-up SME managers.
- The study re-uses existing definitions of SME growth stage models as input.
- The study focuses on packaging existing BPM expertise.
- A number of the activities associated with the evaluation or demonstration of artefacts were done as part of a practitioner-researcher approach together with the company with the alias name SME X.
- The intention is not to do longitudinal empirical observation to evaluate the outcome of the implementation of the BPM@SME Approach to help SME managers to benefit from BPM.

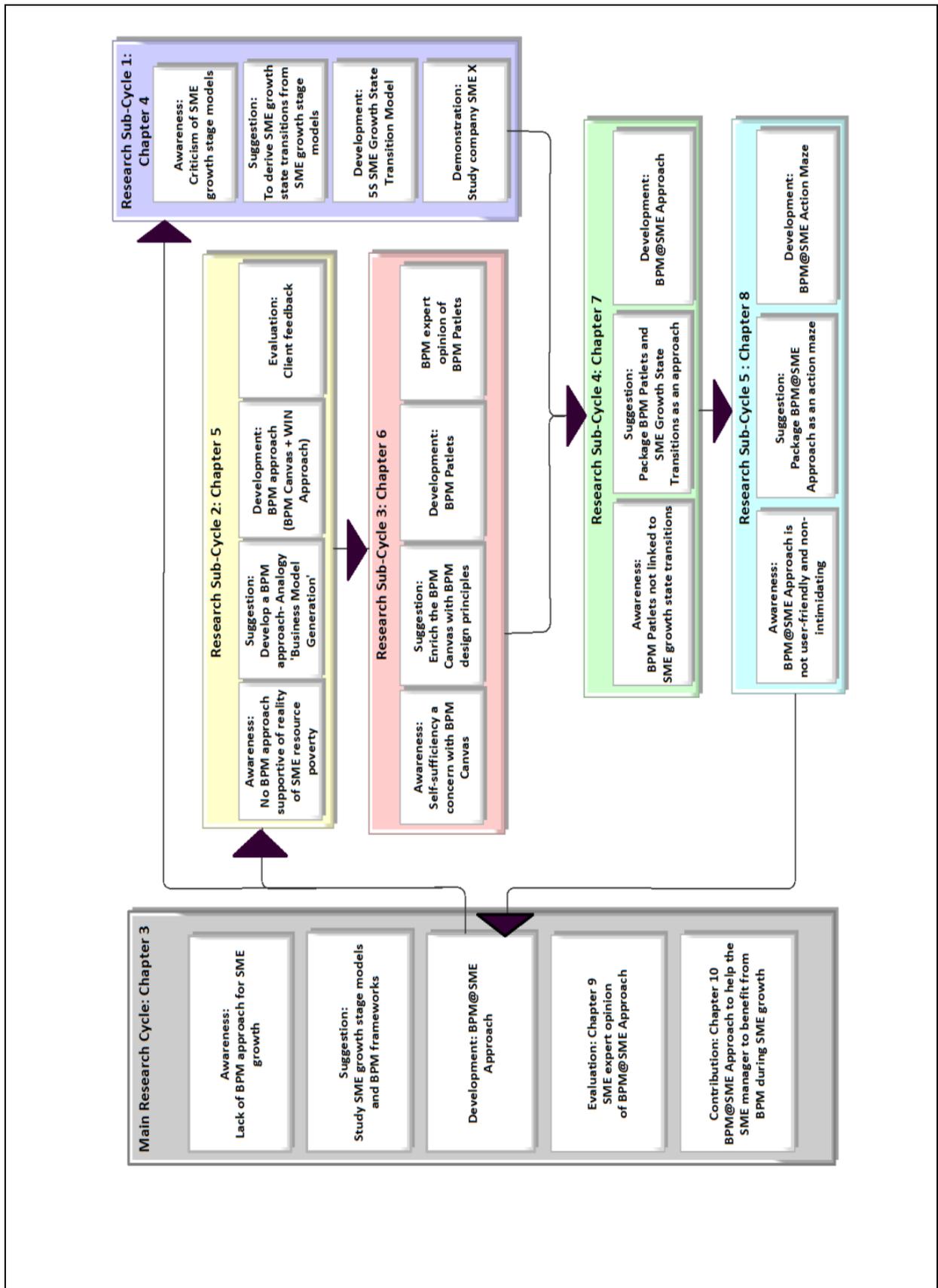


Figure 1-3: Research Design

- The BPM@SME study is focused on SME growth within South Africa. Reference to legislation unique to South Africa, such as the Broad-Based Black Economic Empowerment (B-BBEE) Codes [DTI, 2015], is not applicable within the global context.

As part of the definition of the scope of the BPM@SME research, an analogy is provided to position the BPM@SME research within the reference framework of a SME manager. When discussing the management of small and medium enterprises (SMEs), the *jockey, horse and course* analogy is often used, and it seems to be well accepted as a way of illustrating management concepts in the SME world. The objective of this section is to illustrate the problem and the gap being addressed in this research, by referring to this analogy.

The meaning of *jockey, horse and course* is explained with reference to the postings of Cummings [2013] and Minch [2013]. Most start-ups, and most small businesses, can be described by comparing them to a jockey, a horse and a course. For this discussion, the course will refer to a steeplechase, which is a term used to refer to a distance horse race with various fence and ditch obstacles. The horse is generally associated with the specific business idea. The jockey could be described as one of, or a combination of, the roles of entrepreneur, founder, leader, owner or management (the term SME manager will be used to refer to one of, or a combination of, these roles in this thesis). The course is compared to the marketplace, the industry or the economy.

The jockey guides the horse around the course, over the jumps and hedges of the steeplechase. When starting a business, specifically an SME, the initial focus for the SME manager (the jockey) is to identify a business idea (the horse) with the objective of making money in a specific market (the course). From an investment point of view, a question often asked is *do you back the jockey or the horse?* The interpretation of this question is whether the confidence is in the SME management or in the business idea to make a success of the business.

The BPM@SME Approach is geared towards the SME manager who has successfully established an SME and is now working towards SME growth. The BPM@SME Approach aims to assist the SME manager in mastering the BPM-related challenges associated with SME growth. SME growth stage models play a key role in identifying the challenges of SME growth (the jumps and hedges). Minch [2013] refers to this scenario as follows: “a smallish pony may become a champion with the right training, oats and a damn good jockey”. Applying this analogy to the SME domain, the typical challenges associated with the growth of an SME can be seen as the jumps and hedges to be mastered. The SME manager (the jockey) is interested in understanding the typical stages of SME growth (jumps and hedges) on the way forward and the potential role of BPM as a management approach (horse-jumping technique) to guide the SME (the horse) through these stages.

Minch [2013] positions BPM by referring to the horse as “the business model, the engine, the business process”. The definition of the SME (the horse) includes the business processes. The BPM@SME

Approach guides the SME manager (the jockey) towards self-sufficiency in managing the business processes of the SME (the horse).

1.6 Rationale for the Study

The rationale for the BPM@SME study originates in the experience of the researcher as a practitioner in the domain of BPM as well as SME growth. Over a period of more than ten years in the BPM consulting domain, the lack of an approach for SME managers to benefit from BPM as a management approach was observed by the researcher. This observation triggered a number of questions related to the potential value of BPM for SME growth. The BPM@SME study is an attempt to address some of these questions that have not yet been addressed, from a scientific perspective on the existing BPM and SME related body of knowledge. The majority of the practitioner research was done within the context of a company referred to as company SME-X.

From the pragmatic practitioner perspective, four areas of concern played a motivating role in the definition of the research question, namely:

- One of the areas of concern is that company SME X, with BPM expertise, did not explicitly invest in BPM for more than 10 years. There is more than one explanation for this, one of them being the typical 'a shoemaker's children don't wear shoes'. Another explanation is that BPM was intuitively applied, and that this approach could be of value for other SMEs. A third explanation is that there is actually no value, or only limited value, for SMEs in investing in BPM. It is important to clarify as part of the BPM@SME research whether one or more of these explanations is valid.
- Company SME X needs to invest in enterprise and supplier development in order to comply with part of the BB-BEE legislation in South Africa [DTI, 2015]. The objective of company SME X is to make the internal BPM expertise available in order to help growth-oriented SME managers to benefit from BPM as part of the BB-BEE programme.
- The cost of a typical BPM approach used by large corporates makes it unsuitable for the resource poverty reality of the SME domain. The question is whether the opposite would be valid, namely that a BPM@SME approach could also be applied within the larger corporate world.
- The expectation is that a BPM@SME Approach would add value in the abovementioned scenarios.

1.7 Thesis Outline

The outline of this thesis is summarised in Figure 1-4.

Chapter 2 describes the research design, starting with the definition of concepts in the research domain and explaining the research design of this BPM@SME study. The problem statement and suggestion for a solution are included in Chapter 3 and are positioned as the first cycle of the design science research iterative approach. Chapter 3 includes a literature review of the research domains of SMEs, SME growth stage models and BPM approaches.

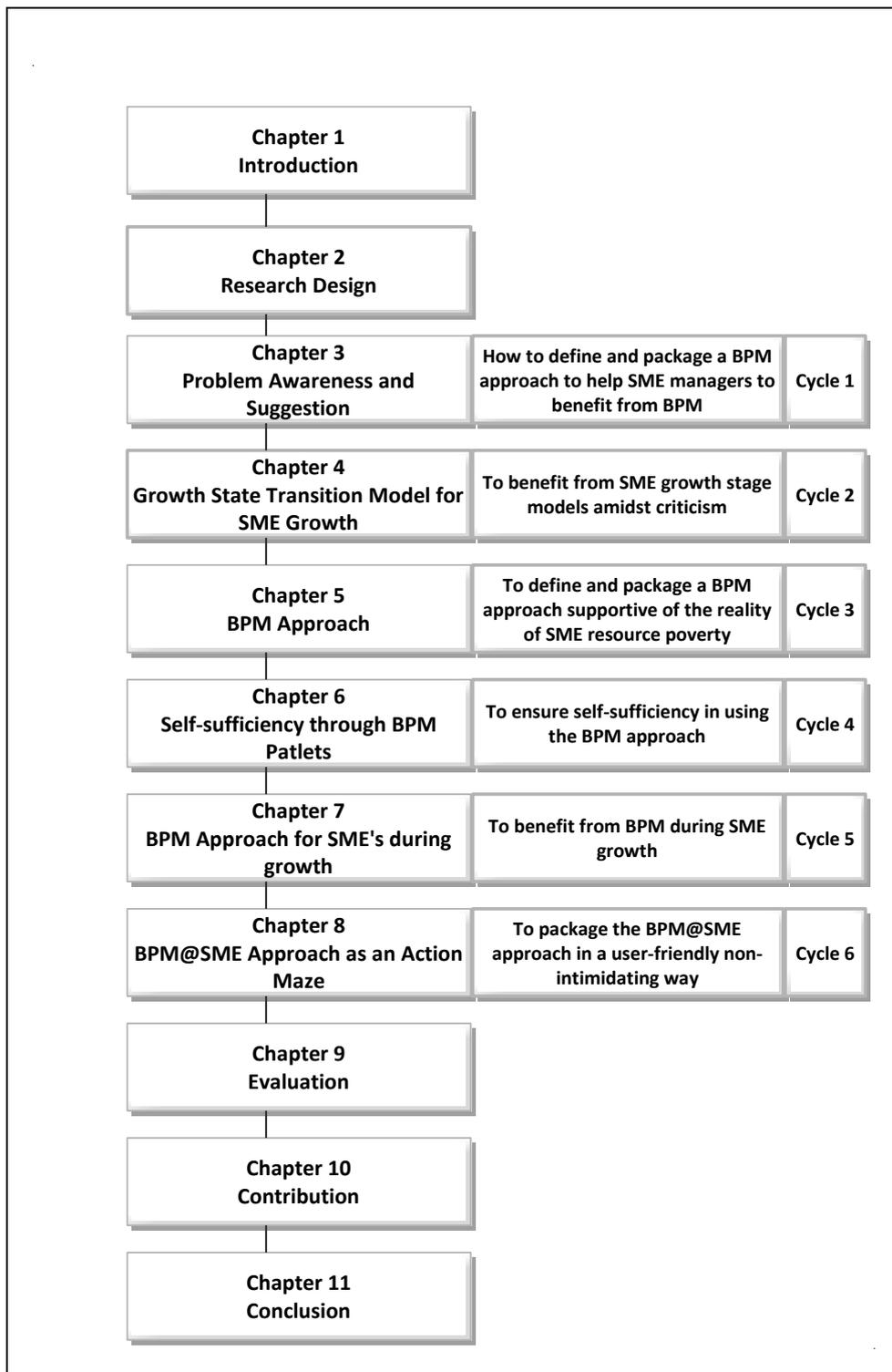


Figure 1-4: Thesis Outline

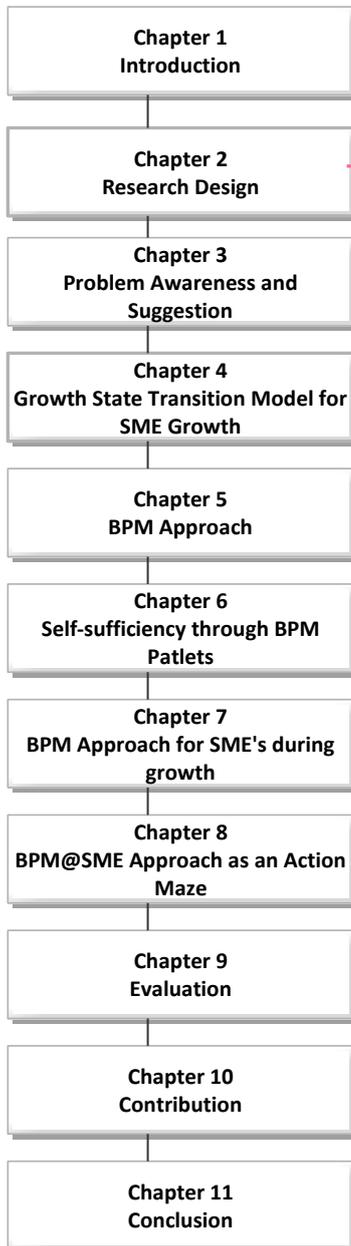
There are five research sub-cycles that constitute the development of the BPM@SME Approach, each with its own research process starting with an awareness of a problem, followed by a suggestion for a solution and then by the development and a form of evaluation of the artefact. Research Sub-Cycle 1, focusing on the development of the SME Growth State Transition Model, is described in Chapter 4.

Chapter 5 focuses on Research Sub-Cycle 2 describing the BPM CanvasTM framework. Research Sub-Cycle 3 is concerned with ensuring self-sufficiency in using the BPM CanvasTM framework by packaging BPM Patlets. The artefacts described in Chapter 4, Chapter 5 and Chapter 6 are prerequisites for starting with Research Sub-Cycle 4 discussed in Chapter 7 with the outcome the BPM@SME Approach. The fifth and the last research sub-cycle is described in Chapter 8 with the user-friendly and unthreatening packaging of the BPM@SME Approach as an action maze prototype.

The overall evaluation of the artefacts is included in Chapter 9 and is followed by a discussion of the contribution made by the study in Chapter 10. The conclusion of the BPM@SME research is presented in Chapter 11.

Chapter 2 : Research Design

Chapter 2 Outline



- 2.1 Introduction
- 2.2 Philosophical perspectives
 - 2.2.1 Ontology
 - 2.2.2 Axiology
 - 2.2.3 Epistemology
 - 2.2.4 Methodology
 - 2.2.5 Philosophical perspectives and research domain
- 2.3 The nature of the BPM@SME research
- 2.4 Relevant research approach for the BPM@SME research
- 2.5 The design science research approach
 - 2.5.1 Guidelines for design science research
 - 2.5.2 The generic research process
 - 2.5.3 The BPM@SME research process
 - 2.5.4 Reasoning methods
 - 2.5.5 Research methods
 - 2.5.5.1 Data collection methods
 - 2.5.5.2 Analysis methods
 - 2.5.5.3 Evaluation methods
 - 2.5.6 Research artefacts
 - 2.5.7 The outcomes of the study and philosophical perspectives
 - 2.5.7.1 Ontology
 - 2.5.7.2 Axiology
 - 2.5.7.3 Epistemology
- 2.6 Ethics and anonymity
- 2.7 Summary

2.1 Introduction

Vaishnavi and Kuechler [2013] define research as an activity that contributes to the understanding of a phenomenon. In the context of this definition, the meaning of the term understanding could be knowledge that allows prediction of the behaviour of some aspect of the phenomenon. The term research could also refer to the process of doing research. For example, Nunamaker Jr, Chen, and Purdin [1990] define research as a systematic, intensive study directed toward fuller scientific knowledge. Such a systematic study is planned to adhere to rigorous research principles, and this plan is known as the research design of the study.

The research design for the BPM@SME study is described and motivated in this chapter, as is the rationale for the selection of the research design based on four philosophical perspectives, namely ontology, axiology, epistemology and methodology. The discussion of the research design includes reference to the associated research process, research method, research artefacts, research objectives and research participants.

In order to define the research design for the BPM@SME research, it is important to identify key concepts in the research domain. It is also important that there should be a common understanding of the use of these concepts within the context of the BPM@SME research. The list of concepts to be discussed as part of the research domain is included in Figure 2-1.

The philosophical perspectives are discussed in section 2.2. The nature of the research and the relevant research approach for the BPM@SME research, which contributes towards the research design, is discussed in section 2.3 and section 2.4. The research design, including the definition of concepts as well as the decisions made on the basis of the nature of the BPM@SME research, is presented in section 2.5. Chapter 2 concludes with an overview of ethics and anonymity in section 2.6 and a summary of the research design in section 2.7.

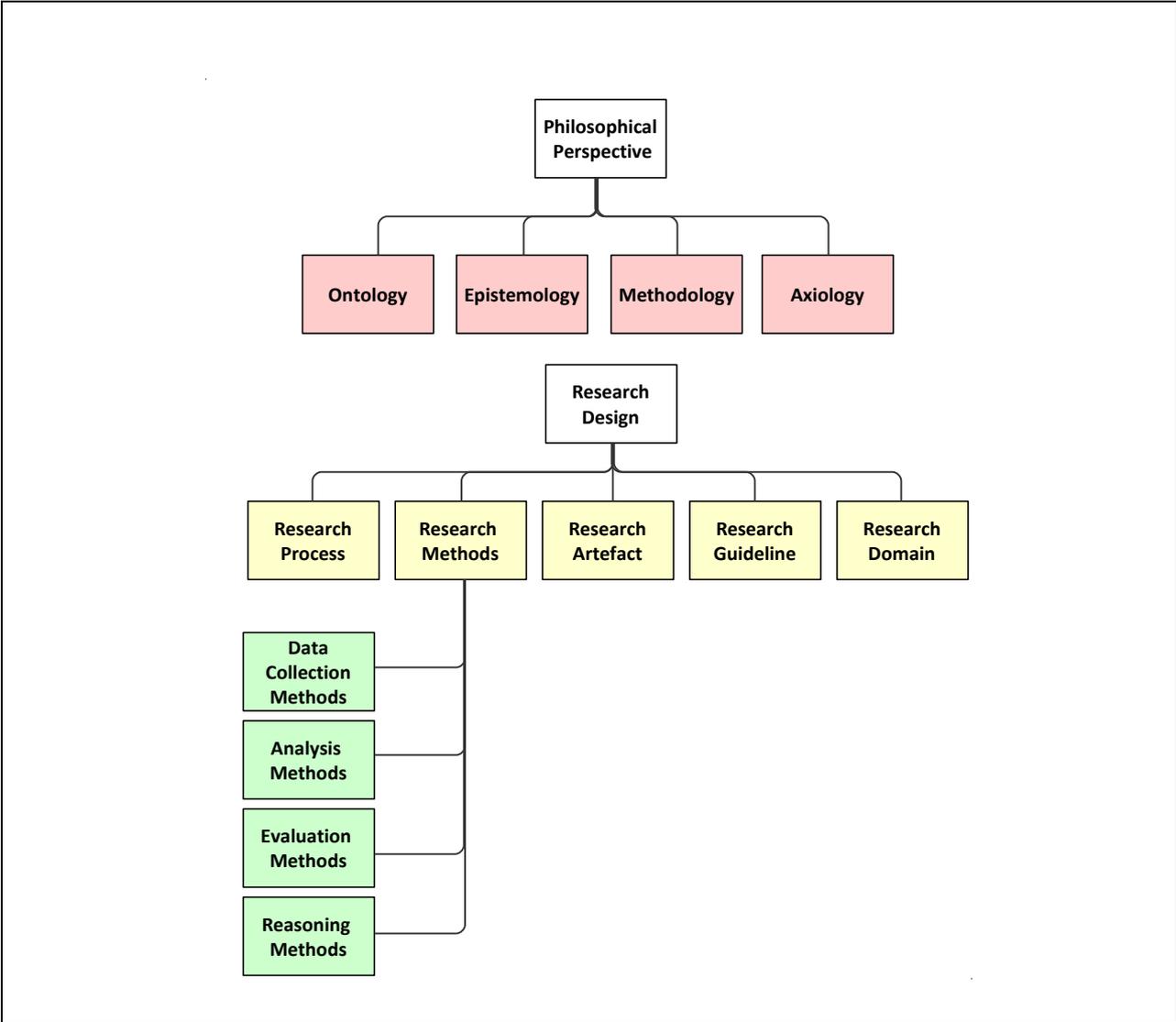


Figure 2-1: Definition of Concepts in Research Domain

2.2 Philosophical Perspectives

This section introduces the four philosophical perspectives, namely ontology, axiology, epistemology and methodology. The nature of these philosophical perspectives as applied in the BPM@SME study is presented in section 2.5.7.

2.2.1 Ontology

Ontology is the study that describes the nature of *reality* or the form of the research areas to be investigated [Adebesin, Kotzé, & Gelderblom, 2011; Vaishnavi & Kuechler, 2013]. Some of the questions to be asked in the context of ontology include ‘what is fundamental and what is derivative’ or ‘what is real and what is not real’. A number of views of reality can be defined:

- *Single reality*: One reality exists, and it is the researcher’s job to discover that reality, often only within a certain realm of probability [Mertens, 2014].
- *Multiple realities that are socially constructed*: Reality is relative and multiple and there can be more than one reality as a result of multiple meanings that are socially constructed. Perceptions of reality may change throughout the process. Construction means that human beings do not find or discover knowledge so much as construct or make it [Mertens, 2014].
- *Socially constructed realities that are influenced by power relationships*: Multiple versions of what is perceived to be real and what is taken to be real need to be critically examined via an ideological critique of their role in perpetuating oppressive social structures and policies [Mertens, 2014].
- *Multiple realities that are contextually situated*: There could be multiple contextually situated world-states that are socio-technically enabled [Vaishnavi & Kuechler, 2013].
- *Change in reality through man-made artefacts*: In order to produce an artefact a single, fixed grounding reality is demanded; however, the intent is to change the reality by the introduction of a novel artefact [Vaishnavi & Kuechler, 2013].
- *Change in reality as research proceeds*: The reality is subject to revision as the research effort proceeds and the ontological viewpoint shifts through the various cycles [Adebesin et al., 2011; Vaishnavi & Kuechler, 2013].

2.2.2 Axiology

Axiology is the study of *values* and it considers the values that an individual or group holds as well as the impact of such values on the conducting of research [Adebesin et al., 2011; Vaishnavi & Kuechler, 2013]. The values that are held by a researcher or a research community can also be rephrased to indicate what is desirable for the researcher or community. An example is whether the ‘artefact created’ during the research is of more value or more desirable to the researcher or community than ‘solving the problem’. Values are generally related to ethics, investigating the concepts of ‘right’ and ‘good’ in individual and social conduct, and to aesthetics, studying the concepts of ‘beauty’ and ‘harmony’. A list of possible values to consider is provided in Table 2-1.

Table 2-1: Axiology – Values

Value	Description
Truth	<ul style="list-style-type: none"> • Natural science theories focus on truth [Vaishnavi & Kuechler, 2013]. • The goal of behavioural research is truth [Hevner et al., 2004].
Understanding	<ul style="list-style-type: none"> • The design science researcher values traditional research values such as the pursuit of understanding [Vaishnavi & Kuechler, 2013].
Caring, justice and community rapport	<ul style="list-style-type: none"> • In critical research, combining theories of caring and justice together with strong community rapport plays a role [Mertens, 2014].
Utility by practitioner	<ul style="list-style-type: none"> • The goal of design science research is utility [Hevner et al., 2004]. • Design science research focuses on utility [Vaishnavi & Kuechler, 2013].

Creation	<ul style="list-style-type: none"> The design science researcher values creative manipulation and control of the environment [Vaishnavi & Kuechler, 2013].
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It is important to note that a value or desirable outcome can be associated with a *goal*, although some values may not support a specific goal. It is therefore important to extend the discussion of values to include whether achieving a goal is desirable for the researcher as well. The valuing of research efforts and findings by the researcher or a broader community is a motivator for any researcher [Vaishnavi & Kuechler, 2013], and the valuing is often associated with reaching a stated research goal. The following is a list of potential goals to consider:

- *Justified theory*: Behavioural science typically addresses research through the development and justification of theories that explain or predict phenomena related to the identified need [Hevner et al., 2004].
- *Prediction*: Understanding is knowledge that allows prediction of the behaviour of some aspect of the phenomenon [Vaishnavi & Kuechler, 2013]. The purpose of theory is the prediction of a phenomenon, and findings from positivist research can typically be repeated and generalised to the entire population [Adebessin et al., 2011]. Behavioural science specifically addresses research through the development and justification of theories that explain or predict phenomena related to the identified need [Hevner et al., 2004].
- *Theoretical explanation*: Within social science the purpose of theory is to explain why specific goals exist or to predict the outcomes of associated goals, but not to achieve those goals [Adebessin et al., 2011]. Behavioural science addresses research through the development and justification of theories that explain or predict phenomena related to the identified need [Hevner et al., 2004].
- *Description*: Descriptive research focuses on understanding things [Baskerville & Pries-Heje, 2010], and behavioural research aims at descriptive learning [Winter & Baskerville, 2010].
- *Prescription*: Prescriptive research focuses on improving things [Baskerville & Pries-Heje, 2010], provides solutions for management problems [Gregor & Jones, 2007], and aims at prescriptive learning [Winter & Baskerville, 2010].
- *Problem solving*: The axiology of design research stresses problem solving [Vaishnavi & Kuechler, 2013], and the researcher is interested in developing an artefact to solve a problem [Holmström, Ketokivi, & Hameri, 2009]. The design science paradigm is therefore fundamentally a problem-solving paradigm [Hevner et al., 2004].
- *Pragmatic practical use*: The principal aim is to determine how well an artefact works, not to theorise about or prove anything about why the artefact works [Hevner et al., 2004].
- *Changing of reality*: Action researchers' intention is to plan and to take action in order to change a part of reality [Järvinen, 2007].

2.2.3 Epistemology

Epistemology means the *science of knowledge*. There are a number of questions related to the nature of knowledge. The following is a list of some of the questions associated with epistemology [London_University, 2005]:

- What is knowledge, and how, and to what extent, do we have it?
- Is it possible to determine whether it is possible to know?
- How do we distinguish between knowledge by acquaintance and propositional knowledge?
- How do we use the five senses to be acquainted with objects and acquire knowledge about the objects and the world around us?
- How can it be that we can experience things to be other than what they are?
- How do you retain knowledge after gaining it?
- What makes the difference between remembering and imagining?
- How does memory provide for the retention of knowledge or justification of knowledge?

The discussion of epistemology as part of the BPM@SME research design only includes a discussion of the relationship of the researcher to the research.

The relationship between the researcher and the participants determines the extent to which the researcher and participants can influence each other. It is recognised that the theories, hypotheses and background knowledge held by the researcher can strongly influence what is being observed [Mertens, 2014]. A number of researcher relationship alternatives are provided in Table 2-2.

Table 2-2: Researcher Relationship to Research

Researcher Relationship	Description
Objective/detached observer	Objectivity in the sense that researchers do not allow their personal biases to influence the outcomes [Mertens, 2014].
Subjective/participative observer	The researcher and the participants are interlocked in an interactive process, each influencing each other. The data collection is personal and interactive. The data can be tracked to their sources and the logic underlying interpretations can be made explicit [Mertens, 2014].
Empathetic observer	The relationship between the researcher and the participant is interactive. The relationship should be empowering for those without power. The researcher should examine ways the research benefits or does not benefit the participants [Mertens, 2014].
Knowing through making	The design researcher supports the concept of ‘knowing through making’ [Vaishnavi & Kuechler, 2013].
Work with practitioners	Action research includes the researcher as an active participant rather than a passive observer [Järvinen, 2007]. As part of action design, researchers bring their knowledge of theory and technological advances, while the practitioners bring practical hypotheses and knowledge of organisational work practices [Sein, Henfridsson, Purao, Rossi, &

	Lindgren, 2011]. While the motivation for the research is to solve problems in a specific organisational context, action research may be a complementary research strategy through which to design information system or research artefacts [Peffers et al., 2007].
Practitioner-researcher	Practitioner-researchers display a range of social, cultural and interpersonal skills, as well as a tacit knowledge and understanding of their particular workplace and sector. The workplace sets the scene in which the practitioner needs to operate, and the practitioner-researcher uses a wide range of behaviours to create practical solutions to real problems [Harvey & Norman, 2007]. By practitioner-researchers is meant practitioners with clear practical tasks in their job but who have the background and skills of a researcher. They bring to practice the benefits of a research approach, rigor and discipline and make valuable insights and unique lessons from practice accessible to the research community. The result is that we witness more attempts at bridging the practice-research gap in computer science, for example [Obrenović, 2013].

2.2.4 Methodology

Methodology, as a philosophical perspective, is concerned with the *way knowledge is obtained*. The combination of process, methods, artefacts and guidelines defines the methodology [Nunamaker Jr et al., 1990]. The research process, research methods, research artefacts and research guidelines used in the BPM@SME research are discussed in detail in section 2.5, after an analysis of the nature of the BPM@SME research in section 2.3.

2.2.5 Philosophical Perspectives and Research Domains

The research domains (for example natural science, social science and engineering or the science of the artificial) influence more than one of the philosophical perspectives and are typically associated with a specific ontology and/or axiology. The particular research domain that is relevant provides some guidance regarding the definition of the research design. Table 2-3 lists some philosophical perspective guidelines associated with prominent research domains.

Table 2-3: Research Domains

Research Domain	Typical Criteria
Natural science	<ul style="list-style-type: none"> • Focusing on truth [Vaishnavi & Kuechler, 2013]. • Based on the underlying assumption that somewhere some truth exists [Hevner et al., 2004].
Social science	<ul style="list-style-type: none"> • Explaining why specific goals exist or predicting the outcomes of associated goals but not interested in achieving those goals [Adebesin et al., 2011]. • Seeking to find what is true [Hevner et al., 2004].
Engineering / science of the artificial	<ul style="list-style-type: none"> • Focusing on the body of knowledge about manmade objects designed to meet certain desired goals [Vaishnavi & Kuechler, 2013].

	<ul style="list-style-type: none"> • Associated with engineering, medicine, business, architecture and painting, and concerned not with the necessary but with the contingent, not with how things are but with how they might be, in short, that is, with design [McMahon, 2012]. • Seeking to create ‘what is effective’ [Hevner et al., 2004]. • Design as studied by engineers, applied artists, management researchers, computer scientists, urban planners, production engineers, engineering scientists and many others – each bringing their own viewpoints and methodological traditions to bear [McMahon, 2012]. • Referencing disciplines such as engineering, computer science, cybernetic systems theory, mathematics, management science, political science, psychology, sociology, accounting, finance, management, architecture, economics and anthropology [Baskerville & Pries-Heje, 2010].
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2.3 The Nature of the BPM@SME Research

The nature of a research initiative influences the decisions regarding the research design. The following list highlights the focus areas relevant to the specific nature of the BPM@SME research:

- The research is associated with the information system domain including the alignment of processes, people and information technology.
- The research focuses on the creation of artefacts.
- The creation of the artefacts is done through a number of iterations.
- The created artefacts are expected to be a solution to a problem.
- The artefacts are expected to be used by practitioners.
- The researcher is also a participant in the research.

The nature of the BPM@SME study fits closely into the *engineering or science of the artificial* research domain.

The nature of the BPM@SME study tends to favour the following two ontological views:

- Change in reality through man-made artefacts.
- Change in reality as the research effort proceeds.

With regard to axiology, the nature of the BPM@SME study tends to favour *utility by practitioner* as value. The study tends to favour a combination of the following research goals:

- Prescription
- Problem solving
- Pragmatic practical use.

With regard to epistemology, the nature of the BPM@SME study tends to position the relationship between the researcher and the research to include:

- Knowing through making
- Working with practitioners
- Being a participative observer
- Being a practitioner-researcher.

The nature of the BPM@SME research is not unique, as a similar research scenario is described by Hevner et al. [2004] when discussing design science research in information systems research. There are three similarities between the research mentioned in the article by Hevner et al. [2004] and the nature of the BPM@SME research:

1. The reference to research in the information systems domain and, even more specifically, to the importance of the design of effective business processes to achieve goals. The BPM@SME research focuses on business process management and the reference [Hevner et al., 2004] is specifically about business processes within the context of information systems. The reference to business processes as well as the achievement of goals is of interest, as both are relevant to the BPM@SME research.
2. The positioning of design science research as an iterative process for the development of an artefact. In the BPM@SME research the goal is to develop an artefact through an iterative process.
3. The mention of the importance of the practitioner. The goal of the BPM@SME research is aligned with Hevner et al. [2004], who assert the relevance of addressing the problems faced by practitioners. The expectation of utility and of working closely with practitioners is ambitious, as confirmed by Holmström et al. [2009], who point out that, despite efforts in various fields of research over multiple decades, the goal of making academic research relevant to the practitioner remains elusive.

2.4 Relevant Research Approach for the BPM@SME Research

A research paradigm or approach is a way of looking at the world from the research perspective, based on philosophical assumptions that will guide thinking and action [Mertens, 2014]. It is encouraging to find references in the literature to research of a similar nature to the BPM@SME research. An acknowledged approach to defining the research design is to identify an existing research paradigm or approach that most closely reflects your own research, to guide your thinking and practice as a researcher [Mertens, 2014].

The definition of the research design of the BPM@SME research is, however, based not on the identification of an existing research approach but rather on the identification of a number of key concepts in the research domain and the selection of relevant elements, to add to the research design, based on the nature of the BPM@SME research. On the basis of the observations by Mertens [2014], the nature of the research and the philosophical perspectives underlying the research as highlighted in section 2.3, the BPM@SME study tends to favour *design science research* as the research approach.

The common goal in design science research is for the researcher to develop *a means to an end*, an artefact to solve a problem as discussed as a potential goal in section 2.2.2. Design science research

produces an artefact to address a previously unsolved and important problem [Peffer et al., 2007]. The research approach is the application of scientific methods to the complex task of discovering answers (solutions) to questions (problems) [Nunamaker Jr et al., 1990].

There is a rich research tradition in engineering, architecture and computer science using design science research as research design, specifically for tackling ill-structured problems in a systematic manner to meet the challenges associated with practical and technological problem solving [Holmström et al., 2009; Järvinen, 2007]. Design science research is fundamentally different from other research strategies that model themselves after the natural sciences and seek explanation based on observation [Holmström et al., 2009].

As the study produces artefacts to address the problem of defining and packaging BPM as a management approach for SME growth, the overall research approach selected for the BPM@SME study was therefore design science research.

2.5 The Design Science Research Approach used in the BPM@SME Research

Within the context of the BPM@SME research, the decisions made regarding the research guidelines, research process, research methods and research artefacts are defined as part of the research design. The guidelines relating to design science research are discussed in section 2.5.1, followed by a discussion of both the generic research process and the BPM@SME specific research process in section 2.5.2 and section 2.5.3. The reasoning methods are explained in section 2.5.4, followed by a discussion of the research methods in section 2.5.5. The research artefacts are discussed in section 2.5.6 followed by a reflection on the outcomes of the BPM@SME study from the different philosophical perspectives in section 2.5.7.

2.5.1 Guidelines for Design Science Research

The research guidelines for design science research are categorised in Table 2-4. These research guidelines for design science research were taken into account in the definition of the research design for the BPM@SME research.

Table 2-4: Research Guidelines

Context	Guideline
Artefact	Design science research, as a research design, must produce a viable artefact in the form of a construct, a model, a method, or an instantiation [Hevner et al., 2004]. The focus is on how to do something [Baskerville & Pries-Heje, 2010]. The outcome of design is a product, also referred to as an artefact.

Business problem	The objective of design science research as a research design is to develop technology-based solutions to address a previously unsolved and important business problem.
Utility evaluation	The utility, quality and efficacy of a design artefact must be rigorously demonstrated via well-executed evaluation methods [Hevner et al., 2004].
Contribution	Effective design science research must provide clear and verifiable contributions in the areas of the design artefact, design foundations, and/or design methodologies [Hevner et al., 2004].
Rigorous method	Design science research as a research design relies upon the application of rigorous methods in both the construction and evaluation of the design artefact [Hevner et al., 2004].
Existing theories and knowledge	The search process draws from existing theories and knowledge to come up with a solution to a defined problem [Hevner et al., 2004]. Knowledge of a practical character is an instrumental way to design solutions to problems [Baskerville & Pries-Heje, 2010].
Communication	It is important to communicate research effectively to appropriate audiences [Hevner et al., 2004].

According to Hevner et al. [2004], ‘design’ denotes both a process (a verb) and a product (a noun). Building and evaluation of the product (artefact) are two main activities of design science research. Section 2.5.2 discusses the generic research process followed for the BPM@SME study, and provides details of how the process was applied in the BPM@SME research. A number of reasoning and research methods were used during the research process, as discussed in sections 2.5.4 and section 2.5.5. Section 2.5.6 discusses the artefacts produced by the study.

2.5.2 The Generic Research Process

The design science research process is a sequence of expert activities that produces an innovative artefact. The design science research process is an iterative process based on feedback from the evaluation of the artefact. During this creative build-and-evaluate loop, the design science researcher must be cognisant of evolving both the design process and the design artefact as part of the research. This iterative circumscription, an essential part of the design science research process, determines or reveals the reality and the knowledge that emerge from the research effort [Vaishnavi & Kuechler, 2013].

The research process used in the BPM@SME research is based on the Vaishnavi and Kuechler [2013] description of the design science research process, as illustrated in Figure 2-2. The research process is described as:

- *Awareness of problem*: Design is never a process that begins from scratch; to design is always to redesign. There is always something that exists first as a given, as an issue, as a problem. [Riemer & Seidel, 2013]. We do not discover problems; we rather construct them [Holmström et al., 2009]. It is

important to demonstrate that no adequate solution exists in the existing knowledge base [March & Storey, 2008]. Justifying the value of a solution motivated the researcher in a study and the audience to pursue the solution, accept the results and understand the associated reasoning [Peppers et al., 2007]. The output of the awareness of the problem step is the identification of the problem and a proposal for a new research effort [Vaishnavi & Kuechler, 2013].

- *Suggestion*: The output of the suggestion step is the tentative proposal of a solution to the identified problem or new research effort. It is a creative step wherein new functionality is envisioned based on configuration of either existing or new and existing elements [Vaishnavi & Kuechler, 2013]. The key to the development of genuinely novel ideas lies in the ability to make use of and combine the insights of multiple disciplines [Holmström et al., 2009].
- *Development*: Development of the artefact based on the tentative design is implemented in this step [Vaishnavi & Kuechler, 2013]. Such solution addresses the desired functionality of an actual artefact incorporating the knowledge of theory that can contribute to the solution [Peppers et al., 2007]. A novel artefact (a construct, model, method, instantiation or design theory) addresses the problem [Kotzé, Van der Merwe, & Gerber, 2015; March & Storey, 2008].
- *Evaluation*: As part of the evaluation, the performance is measured against the criteria that are implicitly and even explicitly stated in the proposal [Vaishnavi & Kuechler, 2013]. The objective is to demonstrate that the artefact solves one or more instances of the problem through methods such as experimentation, simulation or a case study [Peppers et al., 2007]. Demonstrating that existing artefacts are or are not adequate for a specified problem is an important step in the process, as is comparing the utility of existing artefacts within specific organisational contexts [March & Storey, 2008].
- *Circumscription*: The circumscription process is particularly important for understanding the design science research process, because it generates understanding that could only be gained from the specific act of construction. The design science researcher learns or discovers when things don't work 'according to theory'. The design science research process, when interrupted and forced back to *Awareness of Problem* in this way, contributes valuable constraint knowledge to the understanding of the always incomplete theories that abductively motivated the original research [Vaishnavi & Kuechler, 2013].
- *Conclusion*: The conclusion step writes up the consolidated results after categorisation of the results as firm facts that can be repeatedly applied or loose ends that may well serve as the subject of further research [Vaishnavi & Kuechler, 2013]. It is necessary to strengthen the exploratory-to-explanatory research link contributing to the generalisability of the design scientist's results. Instead of focusing on the specific solution designs in merely one context, the researcher seeks theoretical justification as well as demonstration of theoretical utility in multiple contexts [Holmström et al., 2009]. Included as part of the conclusion is the articulation of the value added to the knowledge base and to practice, as well as an explanation of the implications for management and practice [March & Storey, 2008].

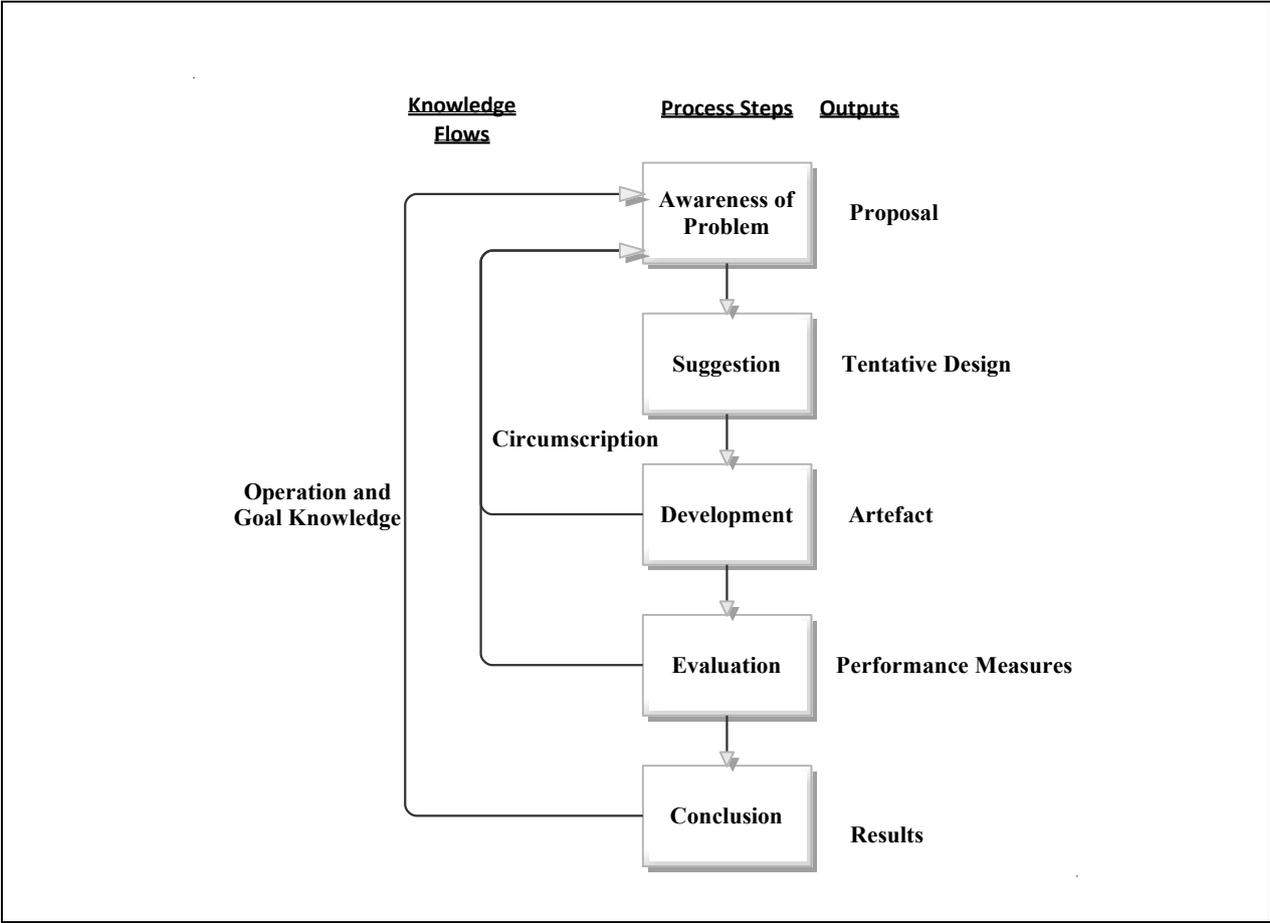


Figure 2-2: General Research Process of Design Science Research [Vaishnavi & Kuechler, 2013]

2.5.3 The BPM@SME Research Process

Six design science research process cycles were used to execute the BPM@SME research. The six research cycles, as depicted in Figure 2-3, are derived from the research objectives, with the research objectives stated as the main research objective and a number of sub-objectives.

The main research objective is to propose, develop, package and evaluate a BPM approach that can be used to help SME managers, during typical transitions of SME growth, to benefit from BPM as a management approach.

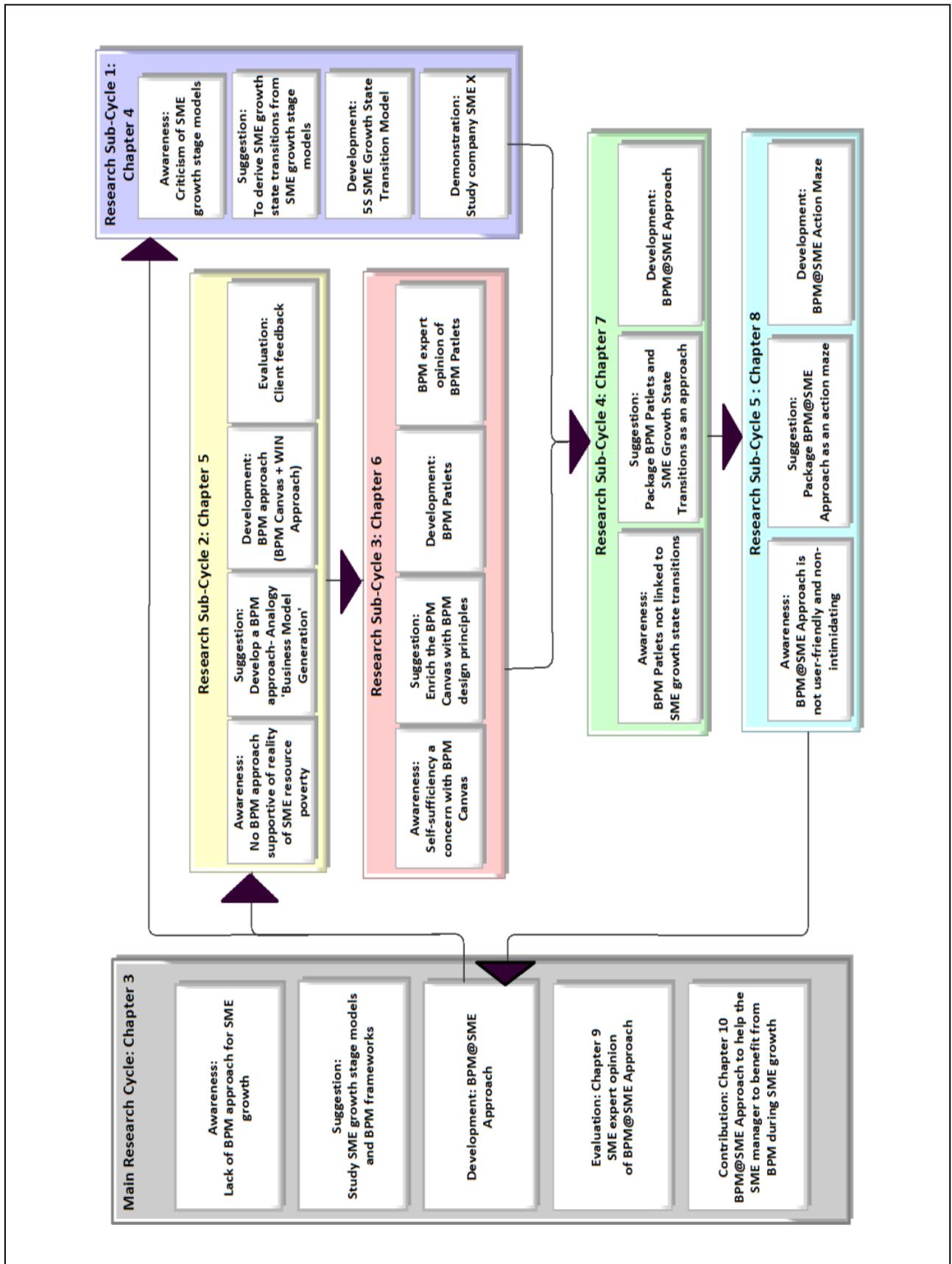


Figure 2-3: Research Cycles as Part of Research Design

The sub-objectives to support the main research objective are:

- To better understand the current SME growth stage model and BPM landscape.
- To study existing SME growth stage models to determine whether these models define the typical SME growth state transitions.
- To study existing BPM approaches in order to identify BPM approaches suitable for the reality of SME resource poverty.
- To derive typical SME growth state transitions using SME growth stage models as source, with the developed research artefact the 5S SME Growth State Transition Model.
- To develop, package and evaluate a BPM approach, with the developed research artefact the BPM Canvas™.
- To ensure self-sufficiency in using the BPM approach, with the developed research artefact the BPM Patlets.
- To package the BPM Patlets cross-referencing the SME growth state transitions from the 5S SME Growth State Transition Model, with the developed research artefact the BPM@SME Approach.
- To package the BPM@SME Approach in a user-friendly, non-intimidating way, with an additional research artefact a BPM@SME Action Maze.

The research cycles are mapped to the research objectives as follows:

- *Main Research Cycle*: To propose, develop, package and evaluate a BPM approach that can be used to help SME managers, during typical transitions of SME growth, to benefit from BPM as a management approach.
- *Research Sub-Cycle 1*: To derive typical SME growth state transitions using SME growth stage models as source, with the developed research artefact the 5S SME Growth State Transition Model.
- *Research Sub-Cycle 2*: To develop, package and evaluate a BPM approach, with the developed research artefact the BPM Canvas™.
- *Research Sub-Cycle 3*: To ensure self-sufficiency in using the BPM approach, with the developed research artefact the BPM Patlets.
- *Research Sub-Cycle 4*: To package the BPM Patlets cross-referencing the SME growth state transitions from the 5S SME Growth State Transition Model, with the developed research artefact the BPM@SME Approach.
- *Research Sub-Cycle 5*: To package the BPM@SME Approach in a user-friendly, non-intimidating way, with an additional research artefact a BPM@SME Action Maze.

The sequence of execution of the six research cycles is as follows:

- The Main Research Cycle was followed by Research Sub-Cycle 1 and Research Sub-Cycle 2. Research Sub-Cycle 1 and Research-Sub-Cycle 2 ran in parallel.
- Research Sub-Cycle 2 was followed by Research Sub-Cycle 3, because there was further circumscription to address the problem of a lack of self-sufficiency.

- Research Sub-Cycle 4 was dependent on the completion of Research Sub-Cycle 1 and Research Sub-Cycle 3, because the SME state transitions and a BPM approach supportive of resource poverty and geared towards self-sufficiency was required.
- Research Sub-Cycle 5 followed Research Sub-Cycle 4, because a less intimidating packaging of the BPM@SME Approach was required.

The research process, as used in the Main Research Cycle, started with the following phases:

- Awareness of problem
- Suggestion
- Development/Circumscription.

The constraints that necessitated the additional research cycles, Research Sub-Cycle 1 and Research Sub-Cycle 2, were:

- The criticism of the SME growth stage models, resulting in Research Sub-Cycle 1.
- The reality of SME resource poverty, resulting in Research Sub-Cycle 2, based on the problem that the BPM approach should allow for an approach accommodating the SME resource poverty phenomenon.

Refer to Table 2-5 for an indication of the phases per research cycle and the sequence of the execution of the phases. The numbers in Table 2-5 refer to the sequence of steps through the main research cycle and the five research sub-cycles. The sequence is as follows:

- Step 1 Main Research Cycle : Awareness of Problem
- Step 2 Main Research Cycle: Suggestion
- Step 3 Research Sub-Cycle 1: Awareness of Development
- Step 4 Research Sub-Cycle 1: Suggestion
- Step 5 Research Sub-Cycle 1: Development
- Step 6 Research Sub- Cycle 1: Evaluation
- Step 7 Research Sub-Cycle 2: Awareness of Development
- Step 8 Research Sub-Cycle 2: Suggestion
- Step 9 Research Sub-Cycle 2: Development
- Step 10 Research Sub-Cycle 2: Evaluation
- Step 11 Research Sub-Cycle 3: Awareness of Development
- Step 12 Research Sub-Cycle 3: Suggestion
- Step 13 Research Sub-Cycle 3: Development
- Step 14 Research Sub-Cycle 3: Evaluation
- Step 15 Research Sub-Cycle 4: Awareness of Development
- Step 16 Research Sub-Cycle 4: Suggestion
- Step 17 Research Sub-Cycle 4: Development
- Step 18 Research Sub-Cycle 5: Awareness of Development

- Step 19 Research Sub-Cycle 5: Suggestion
- Step 20 Research Sub-Cycle 5: Development
- Step 21 Main Research Cycle : Evaluation
- Step 22 Main Research Cycle: Conclusion.

The research process for Research Sub-Cycle 1 followed the full design science research phases as illustrated in Figure 2-2. It started with the awareness of the problem associated with the SME growth stage models. The suggestion was to develop an SME state growth transition model. The development phase consisted of deriving growth state transitions from the existing SME growth stage models. The use of the proposed 5S SME Growth State Transition model was demonstrated by a study of company SME X.

Table 2-5: Research Process per Research Cycle

Design Science Research Process	Main Research Cycle	Research Sub-Cycle 1	Research Sub-Cycle 2	Research Sub-Cycle 3	Research Sub-Cycle 4	Research Sub-Cycle 5
Awareness of Process	1	3	7	11	15	18
Suggestion	2	4	8	12	16	19
Development		5	9	13	17	20
Evaluation	21	6	10	14		
Conclusion	22					

The research process of Research Sub-Cycle 2 also followed all the phases of the design science research process. The first phase was creating an awareness of the problem that there is a need for a BPM approach suitable for the reality of SME resource poverty. The suggestion was to define a BPM approach based on the *Business Model Generation* [Osterwalder & Pigneur, 2010] concept. BPM practitioners of company SME X provided input during the development of the BPM Canvas™ as artefact. Feedback from the clients attending the BPM Canvas™ work sessions was used as evaluation method.

Research Sub-Cycle 3 started with the awareness that self-sufficiency was a concern with the BPM Canvas™. The suggestion was to enrich the BPM Canvas™ with the incorporation of design principles, resulting in the development of BPM Patlets. The evaluation of the BPM Patlets was done by means of an expert opinion given by a senior BPM consultant of company SME X.

Both Research Sub-Cycle 4 and Research Sub-Cycle 5 followed only the first three phases of the design science research process of awareness of problem, suggestion and development. As illustrated, the design research process was finalised with an overall evaluation phase followed by a contribution phase as closure of the Main Research Cycle.

2.5.4 Reasoning Methods

The reasoning methods associated with design science research, as defined by Vaishnavi and Kuechler [2013], include abductive reasoning, deductive reasoning, reflection and abstraction, as depicted in Figure 2-4. The definitions of deductive reasoning, inductive reasoning, abductive reasoning, reflection and abstraction, and analogy as reasoning methods are included in Table 2-6.

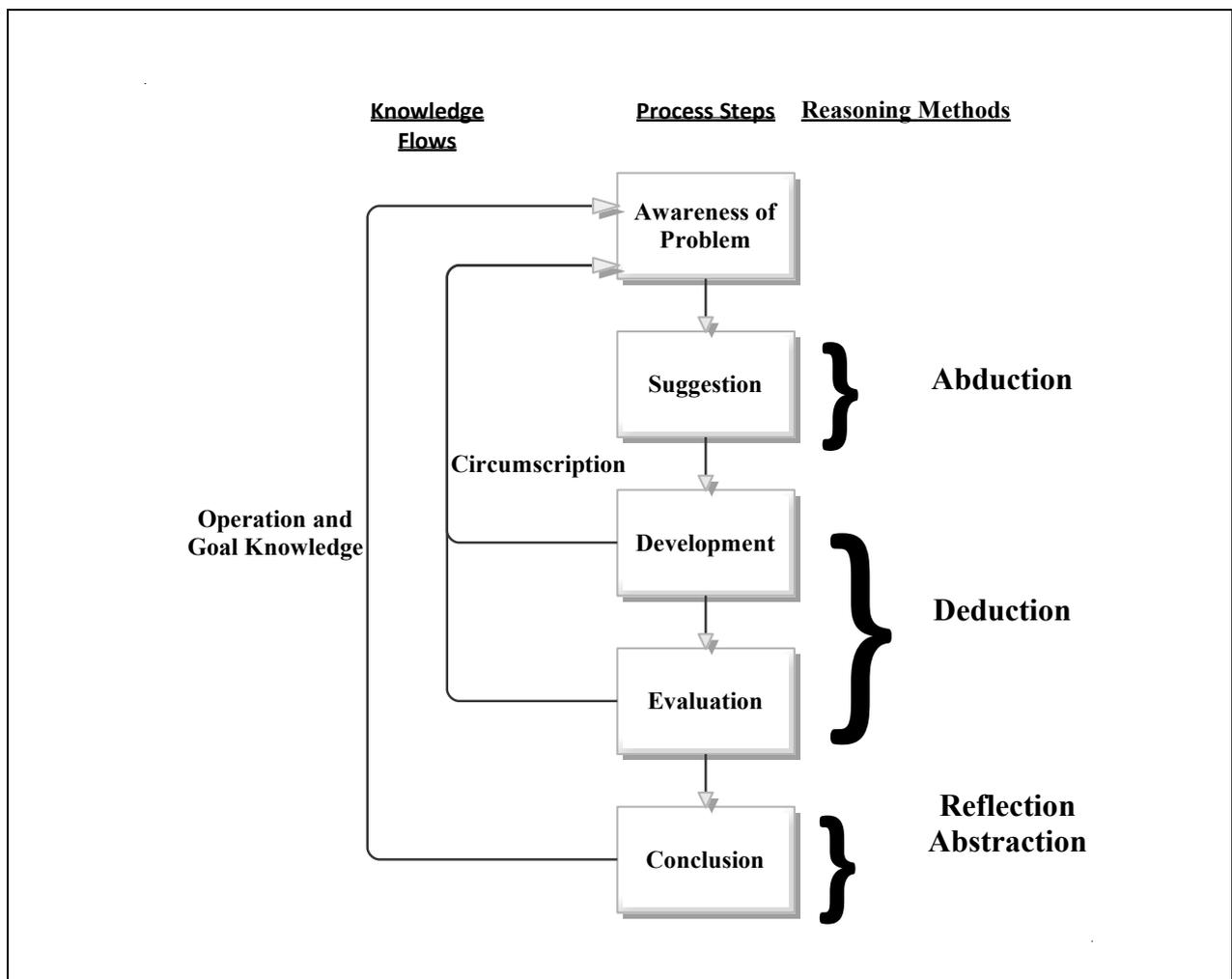


Figure 2-4: Reasoning Methods and Design Science Research [Vaishnavi & Kuechler, 2013]

Table 2-6: Reasoning Methods

Reasoning Methods	Description
Deductive reasoning	<p>Deductive reasoning starts with the assertion of a general rule and proceeds from there to a guaranteed specific conclusion. Deductive reasoning is employed in design science research through iterations between the development and evaluation phases. An artefact is created and evaluated using the available domain knowledge [Vaishnavi & Kuechler, 2013].</p> <p>An example of deductive reasoning is the following: if it is given that all citizens 18 years old are a potential voter and that a specific citizen is 18 years old, then the deduction is that the specific citizen is a potential voter.</p>
Inductive reasoning	<p>Inductive reasoning begins with observations that are specific and limited in scope and proceeds to a generalised conclusion that is likely, but not certain, in light of accumulated evidence. Otherwise stated, it is how people project information from known cases to the unknown [Heit, 2000].</p> <p>An example of inductive reasoning would be one that starts with the observation that all lions so far observed are brown-yellow. It is therefore reasonable to induce the possibility that all lions are brown-yellow. With induction there is good reason to believe the conclusion from the premise, but the truth of the conclusion is not guaranteed. In this example it turns out that some lions are white (albino).</p>
Abductive reasoning	<p>Abductive reasoning typically begins with an incomplete set of observations and proceeds to the likeliest possible explanation for the set. The ability to connect different knowledge domains and see commonalities between them makes use of abduction, a form of reasoning fundamentally distinct from induction and deduction [Holmström et al., 2009].</p> <p>An example of abductive reasoning is one involving a game of cricket. Seeing the ball crossing the boundary for a six, we may abduce that the batsman strike the ball with the bat, based on the reasoning that striking the ball accounts for the movement of the ball across the boundary. A hypothesis is created to explain the observation. There could be various other explanations for the movement of the ball across the boundary. Although the abduction does not leave us certain that the batsman in fact hit the ball, it is still useful for orientation in the surroundings.</p>
Reflection and abstraction	<p>Reflection is learning from the successful and the unsuccessful solution attempts. Abstraction is deriving abstract or generic concepts from observed instances. Reflection and abstraction are both utilised in the conclusion phase of the design science research cycle to aid in contributing to the body of knowledge [Vaishnavi & Kuechler, 2013].</p>
Analogy	<p>Analogy is defined as the recognition that <i>one thing is like another</i> if there is a conceptual structure that describes the first one similar to a conceptual structure that describes the second. In deduction the known aspects are compared by a version of structure mapping called unification. In induction a form of analogy called generalisation is used to derive the most general implication that subsumes all the instances. In abduction, the operation of guessing, some parts of the matching may be more generalised while other parts may be more specialised [Sowa & Majumdar, 2003].</p>

The nature of a specific iterative cycle of the BPM@SME research determines the selection of specific reasoning methods per research cycle. The following are the reasoning methods included in the BPM@SME research design from an overall perspective:

- Analogy
- Abductive reasoning
- Reflection.

Analogy, as a reasoning method, is specifically used in the development phase of Research Sub-Cycle 2 and Research Sub-Cycle 5. In Research Sub-Cycle 2 the conceptual structure used in the analogy is the Business Model Generation publication [Osterwalder & Pigneur, 2010], and in Research Sub-Cycle 5 the conceptual structure used in the analogy is the Performance Factors Analysis Tool [Kirstein, 2000].

The ability to connect different knowledge domains and see commonalities between them entails the use of abduction. Abduction is specifically used in the development phase of Research Sub-Cycle 1, Research Sub-Cycle 3 and Research Sub-Cycle 4. Abductive reasoning influences the generalisation of the SME growth stage models in Research Sub-Cycle 2. In Research Sub-Cycle 3, the abduction is based on identifying and connecting commonalities between the BPM Patterns defined in Research Sub-Cycle 2 and design principles with the outcome the definition of BPM Patlets.

The abductive reasoning in Research Sub-Cycle 4 is done by identifying and connecting commonalities between the SME state transitions in the 5S SME State Transition Model and the BPM Patlets. The awareness of additional problems is the result of reflection as part of the development or the evaluation phases.

2.5.5 Research Methods

The research process makes use of a number of research methods during its execution. In sections 2.5.5.1 to 2.5.5.3, typical research methods associated with design science research are listed from each of the data collection, analysis and evaluation perspectives.

2.5.5.1 Data Collection Methods

A number of generic data collection methods are described in Table 2-7. Of these data collection methods, those relevant to the BPM@SME research are discussed in more detail in section 2.5.5.1.1 to section 2.5.5.1.3.

Table 2-7: Data Collection Methods

Data Collection Methods	Description
Literature search and review	A literature review seeks to uncover the sources relevant to the topic under study. To find these sources, the start is a literature search. A literature search comprises a keyword search of scholarly databases, for example, and backward or forward searches on the basis of relevant articles [Vom Brocke et al., 2009].
Record and document review	Record or document review involves the systematic data collection from existing business records. Internal records may include financial documents, monthly reports, activity logs or purchase orders. The advantage of using records from a business is the ease of data collection [National_Resource_Center, 2010].
Interview	Interviews can be used to explore the views, experiences, beliefs and motivations of individual participants [Gill, Stewart, Treasure, & Chadwick, 2008].
Case study	A case study involves the in-depth study of the artefact in a given business environment [Hevner et al., 2004].
Focus group	A focus group is a form of research in which a group of people are asked about their perceptions, opinions, beliefs, and attitudes towards a product, service, concept, advertisement, idea, or packaging [Tremblay, Hevner, & Berndt, 2010].

The nature of a specific research cycle of the BPM@SME research determines the selection of specific data collection methods per research cycle. The following are the data collection methods included in the BPM@SME research design from an overall perspective:

- Literature review and search
- Record and document review
- Focus group.

2.5.5.1.1 Literature Review and Search

Literature review, including the search for sources, was a key data collection method for a number of research cycles in the BPM@SME research.

The literature review framework described by Vom Brocke et al. [2009] was selected as the theoretical description of the method used. The framework was developed for conducting information system related literature reviews, with particular focus on the process of searching the literature. Vom Brocke et al. [2009] also make a specific reference to the design science research work by Hevner et al. [2004].

The five Vom Brocke et al. [2009] framework phases are summarised below, and comments relating to specific BPM@SME research cycles are included:

1. Define the appropriate scope and flavour of the review. The definition of the scope and flavour of the review could include criteria such as the focus, goal, organising structure, perspective, scope of the literature review audience and coverage. The generic focus in the BPM@SME research was to identify sources of information to be re-used as part of the development of artefacts. The goal was to summarise the information in different sources and to integrate it with findings as part of the development of artefacts. As part of the Main Research Cycle, the literature review was focused on concepts such as SME growth stage models and BPM combined with self-sufficiency. The coverage related specifically to the literature review of the SME growth stage models was intended to select a representative set of SME growth stage models. The literature review of design principles in Research Sub-Cycle 3 was selectively done on a subset of sources.
2. Begin with a broad conception of what is known about the topic and potential areas where knowledge may be needed. For Research Sub-Cycle 1, the sources to include were largely determined by literature reviews considering sources from the period 1962-2006. The published literature reviews on SME growth stage models only include SME growth stage models published in articles before 2007. Additional sources were included for the period after 2006. For the Main Research Cycle, social media were used to ensure that important sources related to a BPM approach were considered.
3. The search process involves database, keyword, backward and forward searches, as well as an ongoing evaluation of sources. In Research Sub-Cycle 1, the number of times an SME growth stage model was cited was one of the criteria for its inclusion in a set of representative SME growth stage models. In addition to the Vom Brocke et al. [2009] search process, social media were used by posting a request on various BPM-related blogs for advice on which BPM approaches to consider for the BPM@SME research, as discussed in Research Sub-Cycle 2.
4. After sufficient literature on a topic has been collected, it has to be analysed and synthesised. In Research Sub-Cycle 1, the selected representative SME growth stage models were used to develop the 5S SME Growth State Transition Model through analysis and synthesis. As part of Research Sub-Cycle 3, the analysis and synthesis of the design principles sourced through a literature review contributed towards the development of the BPM Patlets.
5. The synthesis of literature during a literature review is expected to result in more insightful questions for future research, often highlighting research areas in need of further study. In the Main Research Cycle as part of the design science research circumscription, the findings of the literature review of SME growth stage models and BPM resulted in the identification of Research Sub-Cycle 1 and Research Sub-Cycle 2.

2.5.5.1.2 Record and Document Review

The business records of company SME X, including the annual business plan and monthly management accounts, were reviewed in Research Sub-Cycle 1 using record and document review as the data collection method. These business records were reviewed for the following periods:

- 2002-2005
- 2006-2009
- 2010-2013
- 2014.

2.5.5.1.3 Focus Group

The focus group for the refinement of the artefact in Research Sub-Cycle 2 studied the proposed BPM Canvas™ framework to suggest improvements in the design. The focus group as a data collection method was used to ensure that the respondents built on comments from other respondents. The focus group data collection was based on the steps as described by Tremblay et al. [2010], specifically for focus groups' involvement with artefact refinement in design science research.

The steps and comments related to Research Sub-Cycle 2 are summarised as follows:

- *Formulate research problem:* For Research Sub-Cycle 2, the goal was to improve the design of the artefact incrementally and not to evaluate its utility and efficacy.
- *Identify sample frame:* For Research Sub-Cycle 2 there were three groups involved. The first group, consisting of a principal and senior consultant, assisted with the pre-test and questioning route. A second group of subject matter experts with at least one representative per BPM Pattern resulted in a focus group of eight senior consultants of company SME X. The final focus group was part of a monthly meeting of all the consultants of company SME X, allowing input from a group of thirty participants.
- *Identify moderator:* The moderator should respect participants, communicate clearly, listen with a friendly manner, involve all participants and be familiar with the design. For the BPM@SME study, the designer of the artefact was also the moderator, with the assistance of the subject matter experts.
- *Develop and pre-test a questioning route:* The approach was to create a work space for subject matter experts to enable active knowledge transfer with all the components related to the BPM Canvas™ Framework as well as the WIN Approach placed in poster format onto the walls of the room. This approach allowed all participants to contribute by adding comments on any relevant component.
- *Recruit participants:* The participants were all consultants of company SME X and the focus group session was aligned with the monthly meetings to ensure that the participants would be able to attend the focus group sessions.
- *Conduct focus group:* The participants of the focus group were introduced to the work space and were given a brief overview of the designed artefact, an explanation of the goal of the focus group sessions, namely to refine the design. Participants could contribute in their area(s) of expertise, allowing for collaboration and interaction among participants.
- *Analyse and interpret data:* The input, from the focus group, to the BPM Canvas™ Framework and the WIN Approach were consolidated and documented.

- *Report results*: The result of the focus group sessions was an improved artefact, documented as part of the BPM Canvas™ Framework material.

2.5.5.2 Analysis Methods

A number of generic analysis methods are described in Table 2-8. State transition analysis was used as an analysis method with the development of the 5S SME Growth State Transition Model in Research Sub-Cycle 1.

Table 2-8: Analysis Methods

Analysis Methods	Description
Means-ends analysis	Means-ends analysis is based on representations of present states, desired states, the difference between the two states, and the actions that change the present states. The goal of the means-ends analysis is ultimately to move towards the desired state. Means-ends analysis in the first phase of design research involves problem solving and solution spotting. Problem solving involves the search for means for given ends. In solution spotting the researcher maintains the means but changes the ends [Holmström et al., 2009].
Theory building	Theory building includes development of new ideas and concepts, and the construction of conceptual frameworks, new methods, or models.
State transition analysis	State transition analysis describes the dynamic behaviour of a complex system by referring to the impact of each transition on the state of the system [Harel, 1987]. A transition is a change in state caused by an event. State transition analysis is also used in non-computer related fields, for example the construction domain [Kamezaki, Iwata, & Sugano, 2012] and neurology [Lim et al., 2011].
Synthesis	Synthesis is the process of putting together and is appropriate when the detail is known, but the bigger picture of how the system behaves as a whole is lacking. The composition or combination of parts or elements so as to form a whole is known as synthesis [Ritchey, 1991]

The nature of a specific iterative cycle of the BPM@SME research determines the selection of specific analysis methods per research cycle:

- State transition analysis
- Synthesis.

2.5.5.2.1 State Transition Analysis

Research Sub-Cycle 1 used state transition analysis as analysis method. State transition analysis is used to describe and analyse the different possible states of an entity within a system, how that entity changes from one state to another, and what can happen to the entity when it is in each state. In the context of the

BPM@SME research, the entity is the SME and the system is seen in the broader context of system theory. The objective is to identify the states, as a result of a transition, of an SME associated with growth based on the SME growth stage model content.

As part of state transition analysis, the following information could be considered [IIBA, 2015]:

- A set of possible states for an entity.
- The sequence of states that the entity can be in.
- How an entity changes from one state to another.
- The events and conditions that cause the entity to change states.
- The actions that can or must be performed by the entity in each state as it moves through its life cycle.

For the BPM@SME research, the outcome of the state transition analysis in Research Sub-Cycle 1 is limited to the identification of the current and future states as derived from the SME growth stage model. The sequence of states of an entity is not always linear. An entity could skip several states or revert to a previous state, perhaps more than once. It may also be recursive, leaving one state and returning to the same state [IIBA, 2015]. For Research Sub-Cycle 1, the value of the state transition analysis was central to resolving the criticism of the SME growth stage models as discussed in the Main Research Cycle. An example of one of the notations used for a State Transition diagram is included in Figure 2-5.

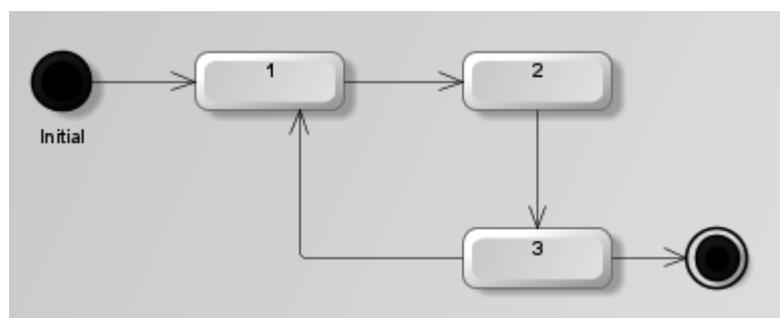


Figure 2-5: State Transition Diagram

An alternative technique for documenting the outcome of a state transition analysis is a state table. Such a state table could be a two-dimensional matrix showing states and the transitions between them. Each row shows a starting state, the transition, and the end state. If one state can respond to several transitions, there will be a separate row for each transition. However, for the BPM@SME state transition analysis the objective is only to derive the states from the SME growth stage models. Therefore the 5S SME Growth State Transition Model consists only of a list of states with a reference to the transition.

The following is an example of a future state and a transition required to move to the future state as included in the 5S SME Growth State Transition Model:

- *Future state*: Keep record of all transactions and communication in a standard way.
- *Transition*: To define and standardise the record keeping processes.

2.5.5.2.2 Synthesis

The first step towards the definition of the 5S Growth State Classification Framework, as part of Research Sub-Cycle 1, was the consolidation of all the states derived from the SME growth stage models. The consolidation was done by means of a brown paper synthesis exercise. For each state identified a card was created and cards with similar content were consolidated into a single state, resulting in more than 50 states. The synthesis process was a subjective approach by the researcher, and it is acknowledged that the results might be different if the process were to be carried out by another individual.

The ten SME growth stage models selected for the State Transition Analysis did not use the same classification to group the different states. A classification framework to group the different states was defined. Through synthesis five classes were derived, each starting with the letter S, namely strategy, structure, systems, style of management and staff as part of the 5S Growth State Classification Framework.

Synthesis, as analysis method, also plays a role in Research Sub-Cycle 2, Research Sub-Cycle 3 and Research Sub-Cycle 4 supportive towards the abductive reasoning.

2.5.5.3 Evaluation Methods

A number of generic evaluation methods are described in Table 2-9.

Table 2-9: Evaluation Methods

Evaluation Methods	Description
Observational methods	A case study, field study, prototype or demonstration is evaluated through the studying, monitoring or illustrating of the use of the artefact in a business environment [Hevner et al., 2004].
Analytical methods	Static analysis (e.g. complexity, completeness), optimisation or dynamic analysis (e.g. performance) are examples of analytically-based analysis [Hevner et al., 2004].
Experimental methods	A controlled experiment studies the artefact in a controlled environment for qualities (e.g. usability) [Hevner et al., 2004], and a simulation executes the artefact with artificial data [Peffers et al., 2007].
Testing	Functional (black box) testing executes artefact interfaces to discover failures and identify defects. Structural (white box) testing performs coverage testing of some metric (e.g. execution paths) in the artefact implementation [Hevner et al., 2004].
Descriptive methods	An informed argument or constructed example [Hevner et al., 2004] or logical proof [Peffers et al., 2007] uses information from the knowledge base (e.g. relevant research) to build a convincing argument for the artefact's utility or logic.

Client feedback	Peppers et al. [2007] listed both a satisfaction survey and client feedback as evaluation methods.
Walkthrough	A walkthrough is a review in which participants step through an artefact or set of artefacts [IIBA, 2015].
Expert opinion	Expert opinion is the consulting of an individual experts or a group of experts to drawn on the experience of the experts to assist in problem identification, clarification of issues and/or the evaluation of products [Poulson, Ashby, & Richardson, 1996].

The nature of a specific iterative cycle of the BPM@SME research determines the selection of specific evaluation methods per research cycle. The following are the evaluation methods included in the BPM@SME research design from an overall perspective:

- Client Feedback
- Observational method: demonstration, prototype
- Expert opinion.

A demonstration is a single act to prove that an idea works. The focus is on using the artefact to solve at least one instance of the problem. Such a demonstration could be through an experiment, a simulation, a case study, a prototype or proof [Peppers et al., 2007].

In Research Sub-Cycle 1, a document review of company SME X and clarification of the information with the management of company SME X were used as input for the demonstration. An illustration of the use of the research artefact developed during Research Sub-Cycle 1, involved a demonstration of the application of the 5S SME Growth State Transition Model based on observations within company SME X for the period 2001-2014. The difference between a demonstration and evaluation is that the latter is not only a demonstration but also measures how well the artefact supports the solution to the problem [Peppers et al., 2007].

Evaluation could take various forms, including interviews and client feedback.

During Research Sub-Cycle 2, the evaluation was done by clients completing an evaluation form after attending the BPM Canvas TM work sessions. The client feedback was done through completion of an assessment form. So as not to influence the attendees attending the work session, the question about the value of the course was an open question, and the feedback from clients is included as part of Research Sub-Cycle 2.

For the evaluation of the BPM Patlets as well as the BPM@SME Approach, expert opinion was used as evaluation method. In Research Sub-Cycle 3, the BPM Patlets were reviewed through the expert opinion of a BPM senior consultant of company SME X.

As part of the final evaluation, two experts in the field of SME management and SME mentoring were consulted to draw on their experience to evaluate and comment on the BPM@SME Approach. The experts commented on the reality of SME growth as stated in the problem statement and the identified gap and constraints. The second part of the evaluation was based on the value and usability of the BPM@SME Approach including the 5S SME Growth State Transition Model in an assessment format, the BPM@SME Guidelines as well as the BPM@SME Action Maze prototype. A questionnaire was used to give structure to the feedback, allowing for free form feedback as well.

2.5.6 Research Artefacts

The potential types of artefacts associated with design science research are summarised by March and Storey [2008] as constructs, models, methods, instantiations, social innovations, new properties of technical, social or informational resources or, in short, any designed object with an embedded solution to an understood research problem.

Hevner et al. [2004] list a number of scenarios that disqualify an artefact from being considered suitable for design science research, namely:

- If existing artefacts are adequate, then design science research that creates a new artefact is unnecessary and regarded as irrelevant.
- If the new artefact does not map adequately to the real world, it cannot provide utility.
- If the artefact does not solve the problem, it has no utility.
- If utility is not evaluated, then there is no basis upon which to accept the claims that it provides any contribution.
- Furthermore, if the problem, the artefact, and its utility are not presented in a manner such that the implications or research and practice are clear, then publication in the literature is not appropriate.

A more comprehensive definition of the potential types of artefacts as outputs of design science research is included in Table 2-10.

Table 2-10: Research Artefacts

Artefact	Description
Theory	Gregor and Jones [2007] classify together theories and abstract artefacts without physical existence apart from being communicated in words, pictures, diagrams, or some other means of representation, irrespective of whether they are constructs, methods or models. Design theories can be about artefacts that are either products (for example a database) or methods (for example a prototyping methodology or an IS management strategy). Theories for design and action give explicit prescriptions on how to design and develop an artefact, whether it is a technological product or a managerial intervention.
Constructs	Constructs include the conceptual vocabulary of a domain [Vaishnavi & Kuechler, 2013], as well as symbols [Hevner et al., 2004].
Models	A model includes a set of statements expressing relationships between constructs [Vaishnavi & Kuechler, 2013], abstractions and representations [Hevner et al., 2004].
Methods	A method is a set of steps used to perform a task. Methods are goal-directed plans for manipulating constructs so that the solution statement model is realised. Algorithms and practices are also seen as methods [Hevner et al., 2004].
Instantiations	Instantiations are material artefacts with a physical existence in the real world such as hardware, software or physical actions [Gregor & Jones, 2007]. Implemented and prototype systems are classified as instantiations.

Another type of artefact is the capturing of architectural design ideas for reuse in an archetypical form known as a pattern. A design pattern is a general reusable solution to a commonly occurring problem [Baskerville & Pries-Heje, 2010]. A compact variation of a pattern is a patlet. Coplien and Harrison [2005, p. 349] provide the following definition: “A patlet is a short summary of the problem and solution for a pattern. Patlets are often used as an aid to discovering patterns in order to solve a particular problem at hand”. A Business Model Pattern [Osterwalder & Pigneur, 2010] is defined by similarities in components or building blocks and is discussed in Chapter 5.

An example of a patlet is the ‘Size the Organization’ patlet. It says: “If an organization is too large, communication breaks down, and if it is too small, it can’t achieve its goals or easily overcome difficulties of adding more people. Therefore start projects with a critical mass of about 10 people.” [Coplien & Harrison, 2005, p. 352].

The nature of the BPM@SME study tends to favour the following research artefacts:

- Model
- Patlets (with an instantiation as an action maze)
- Method.

The artefacts developed per research cycle to support the research objectives are as follows:

- 5S SME Growth State Transition Model: To benefit from SME growth stage models in the face of criticism.
- BPM CanvasTM Framework and WIN Approach: To define and package a BPM approach suitable for the reality of SME resource poverty.
- BPM Patlets: To ensure self-sufficiency in using the BPM approach.
- BPM@SME Approach: To benefit from BPM during SME growth.
- BPM@SME Action Maze: To package the BPM@SME Approach in a user-friendly and non-intimidating way.

The 5S SME Growth State Transition Model was developed in Research Sub-Cycle 1. During Research Sub-Cycle 2, both a model and methods were developed, namely the BPM CanvasTM Framework and the WIN Approach. The BPM Patlets are a set of generally reusable BPM solutions packaged in Research Sub-Cycle 3. The summary of the problem and the associated solution are referred to as a patlet. The BPM@SME Approach, consisting of patlets and a method, is the artefact developed in Research Sub-Cycle 4. The final artefact is the BPM@SME Action Maze prototype, an instantiation of the BPM@SME Approach.

2.5.7 The Outcomes of the Study and Philosophical Perspectives

2.5.7.1 Ontology

As stated in section 2.3, the nature of the BPM@SME study tends to favour the following ontological views:

- The change in reality through man-made artefacts.
- The change in reality as the research effort proceeds.

The study is classified as being within the research domain of engineering science of the artificial, on the basis of the development of artefacts that change the nature of reality. There is a change in reality through the following man-made artefacts:

- 5S SME Growth State Transition Model
- BPM CanvasTM Framework and WIN Approach
- BPM Patlets
- BPM@SME Approach
- BPM@SME Action Maze prototype.

2.5.7.2 Axiology

As stated in section 2.3, the nature of the BPM@SME tends to favour *utility by practitioner* as a value. The nature of the BPM@SME study tends to favour a combination of the following research goals:

- Prescription
- Problem solving
- Pragmatic practical use.

The value of utility by practitioner is reflective of the research goal of pragmatic practical use. The research goals of problem solving, prescriptive method and pragmatic practical use are addressed as indicated in the following list per research cycle:

- Research Sub-Cycle 1: 5S SME Growth State Transition Model with the focus on *problem solving*.
- Research Sub-Cycle 2: The BPM Canvas TM Framework and WIN Approach with the focus on a *prescriptive method*.
- Research Sub-Cycle 3: BPM Patlets with the focus on *pragmatic practical use*.
- Research Sub-Cycle 4: BPM@SME Approach with the focus on a *prescriptive method*.
- Research Sub-Cycle 5: BPM@SME Action Maze prototype with the focus on *pragmatic practical use*.

The listed artefacts meet the desired goal of designing a solution that would solve the problem of a need for a BPM approach for SME growth that is pragmatic and of practical use.

2.5.7.3 Epistemology

As stated in section 2.3, the nature of the BPM@SME study tends to position the researcher's role to include:

- Knowing through making
- Working with practitioners
- Being a participative observer
- Being a practitioner-researcher.

The role of company SME X in the BPM@SME research contributed towards a strong pragmatic and practitioner perspective on the research. The company referred to as SME X is a BPM consulting firm that started in 2001 and it has grown from a small to a medium enterprise in the last 13 years. The researcher is a co-founder of company SME X and has been CEO since 2007. The result is that the researcher has not only practical BPM experience but practical experience in SME growth as well. As part of Research Sub-Cycle 2 and Research Sub-Cycle 3, the artefacts were developed within the context of company SME X. Working closely together with company SME X provided the opportunity to learn from practical experience.

In the Main Research Cycle the only research participant is the researcher. In the Research Sub-Cycle 1, the researcher has the role of participative observer, reporting in the study the state transitions of company SME X over the last 13 years. A second participant is one of the directors and co-founder of company

SME X. In an interview he provided information and verified the correctness of the content of the demonstration.

In Research Sub-Cycle 2 and Research Sub-Cycle 3, the researcher was involved as practitioner-researcher and in *knowing through making* with the development of the BPM CanvasTM Framework and the WIN Approach. A focus group of BPM practitioners, who are senior BPM consultants of company SME X, assisted with a first verification of the BPM CanvasTM Framework. The BPM CanvasTM was presented in work session format to corporate clients in order to develop a BPM Roadmap. The work session participants, representing seven large corporates, provided client feedback via evaluation forms.

Research Sub-Cycle 4 and Research Sub-Cycle 5 were conducted by the researcher. As practitioner-researcher, the researcher prepared the BPM@SME Approach and the BPM@SME Action Maze as a prototype to determine whether it could play a role in creating awareness of BPM as a discipline in SME growth. The final evaluation of the BPM@SME Approach and the BPM@SME Action Maze prototype was carried out by two SME mentors, with SME management experience, providing their expert opinion. A third expert shared some comments.

2.6 Ethics and Anonymity

The ethical principles that were of importance for the BPM@SME study include:

- The right of research participants to privacy and protection from harm.
- Consulting the relevant entities to ensure awareness and acceptance of the study from an ethics anonymity perspective.
- Voluntary participation.
- Obtaining permission to make observations and to examine documents.
- Maintaining confidentiality.

The majority of participant interaction was as practitioner-researcher within the operating environment of company SME X. The management of company SME X approved and supported the initiative. On the basis of this consent it was possible to make observations and to examine the records of company SME X. The content of the study was verified by one of the founders of company SME X, currently the financial director. As founder and financial director he is familiar with the history of company SME X.

A second group of participants were the clients of company SME X. As part of the typical evaluation of the BPM CanvasTM workshop, the attendees were requested to complete an evaluation form. Completion of the evaluation form was optional and one of the questions was whether the information could be used for other purposes. In order to maintain confidentiality and anonymity, the names of neither the clients nor the participants are included in the BPM@SME report.

The final evaluation involved two SME mentors with SME management experience providing their expert opinion by completing a questionnaire allowing for free format text. The three experts confirmed by electronic mail to taking part in the evaluation.

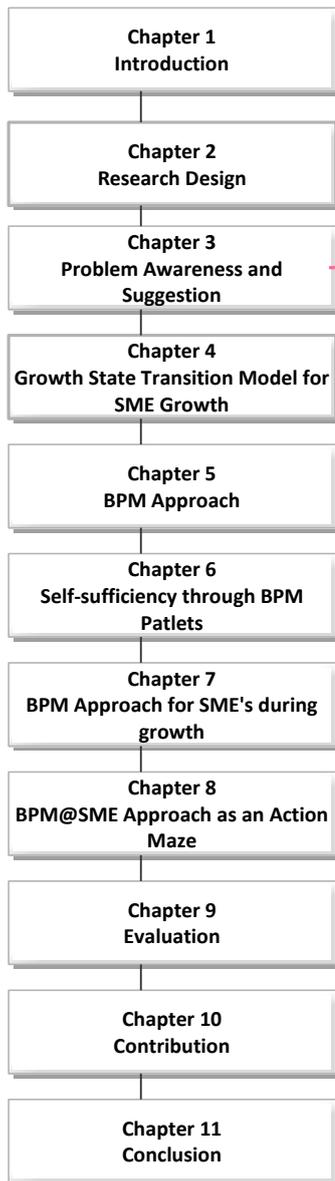
2.7 Summary

The research design of the BPM@SME research ensures that viable artefacts are created in the form of models, methods and instantiations. The BPM@SME research is problem-inspired and develops a solution to address the unsolved business problem of packaging BPM as a management approach for SME growth in a self-sufficient way. The research is prescriptive, focusing on improving things, and it does not focus on understanding or prediction. The evaluation methods used include a demonstration based on observation over a 13-year period, as well as client feedback and expert opinions. One of the contributions is the BPM CanvasTM moving from the specific-and-unique to the generic-and-abstract. The study verifying the 5S SME Growth State Transition Model was very specific-and-unique, with the final expert opinion evaluation focusing on the generic-and-abstract.

As part of the research design, rigorous methods including a literature review, record and document reviews, expert opinions, focus groups, client feedback, abductive reasoning, analogical reasoning and state transition analysis were used. The BPM@SME research process draws from existing SME growth stage models, BPM approaches and self-sufficiency concepts to define the solution. Knowledge from practitioner experience was instrumental in designing the solution. The research design was governed by the design science research principles. The practitioner-researcher role points to the importance of mutual learning, with the researcher bringing the knowledge of theory and the practitioner bringing knowledge of work practices. The research is communicated via the thesis, BPM CanvasTM work sessions and publication of articles.

Chapter 3 : Problem Awareness and Suggestion

Chapter 3 Outline



- 3.1 Introduction
- 3.2 The problem of the lack of BPM approach to assist SME managers
 - 3.2.1 The link between a BPM approach and SME growth
 - 3.2.2 SME growth
 - 3.2.3 SME resource poverty
 - 3.2.4 The lack of business skills
- 3.3 SME growth stage models
 - 3.3.1 Criticism of SME growth stage models
 - 3.3.2 Criticism of SME growth stage models - analysis
- 3.4 BPM approach
- 3.5 Identified problem of the BPM@SME Research
- 3.6 Suggestion towards development of a BPM approach for SME growth
 - 3.6.1 Development of an SME growth state transition model
 - 3.6.2 BPM approach for self-sufficiency
 - 3.6.3 BPM approach for SME growth
- 3.7 Conclusion

3.1 Introduction

The objective of the BPM@SME research, reported on in this thesis, was to investigate and develop a BPM approach that can be used to help SME managers, during typical transitions of SME growth, to benefit from BPM as a management approach. The research problem of the BPM@SME research was to investigate how to define and package such a BPM approach, given the reality of SME resource poverty.

Section 3.2 focuses on reviewing the current literature and best practice, in order to highlight the problem that currently exists regarding the lack of a BPM approach to help SME managers during typical transitions of SME growth. A literature review and analysis of existing SME growth stage models follows in section 3.3. In section 3.4 a literature review of the nature of existing BPM approaches is presented. The identified sub-problems to be addressed by the BPM@SME research is described in section 3.5. A possible solution to the problem, to be investigated by the research, is suggested in section 3.6.

This chapter addresses the awareness and suggestion phases of the Main Research Cycle, as indicated in Figure 2-3. The development of the solution is broken up into five sub-phases, as presented in Chapters 4 to 8. The evaluation phase of the Main Research Cycle, i.e. the evaluation of the overall solution, is presented in Chapter 9, whilst Chapter 10 summarises the overall contribution of the research.

3.2 The Problem of the Lack of a BPM Approach to assist SME Managers

As part of the literature review, to ensure a more comprehensive understanding and awareness of the problem, a number of areas are described, including the link between a BPM approach and SME growth, SME growth statistics, SME resource poverty as well as the lack of business skills of SME managers.

3.2.1 The Link between a BPM Approach and SME Growth

The value of solving the problem of a lack of a BPM approach to assist with SME growth is found within a nested set of problems. As depicted in Figure 3-1 the greatest problem is unemployment; contributing towards unemployment is the lack of jobs created by SMEs; contributing towards the lack of jobs created by SMEs is limited SME growth; contributing to limited SME growth is the lack of business skills to grow SMEs; and contributing towards the lack of business skills to grow SMEs is the lack of commercial infrastructure (including the lack of BPM expertise).

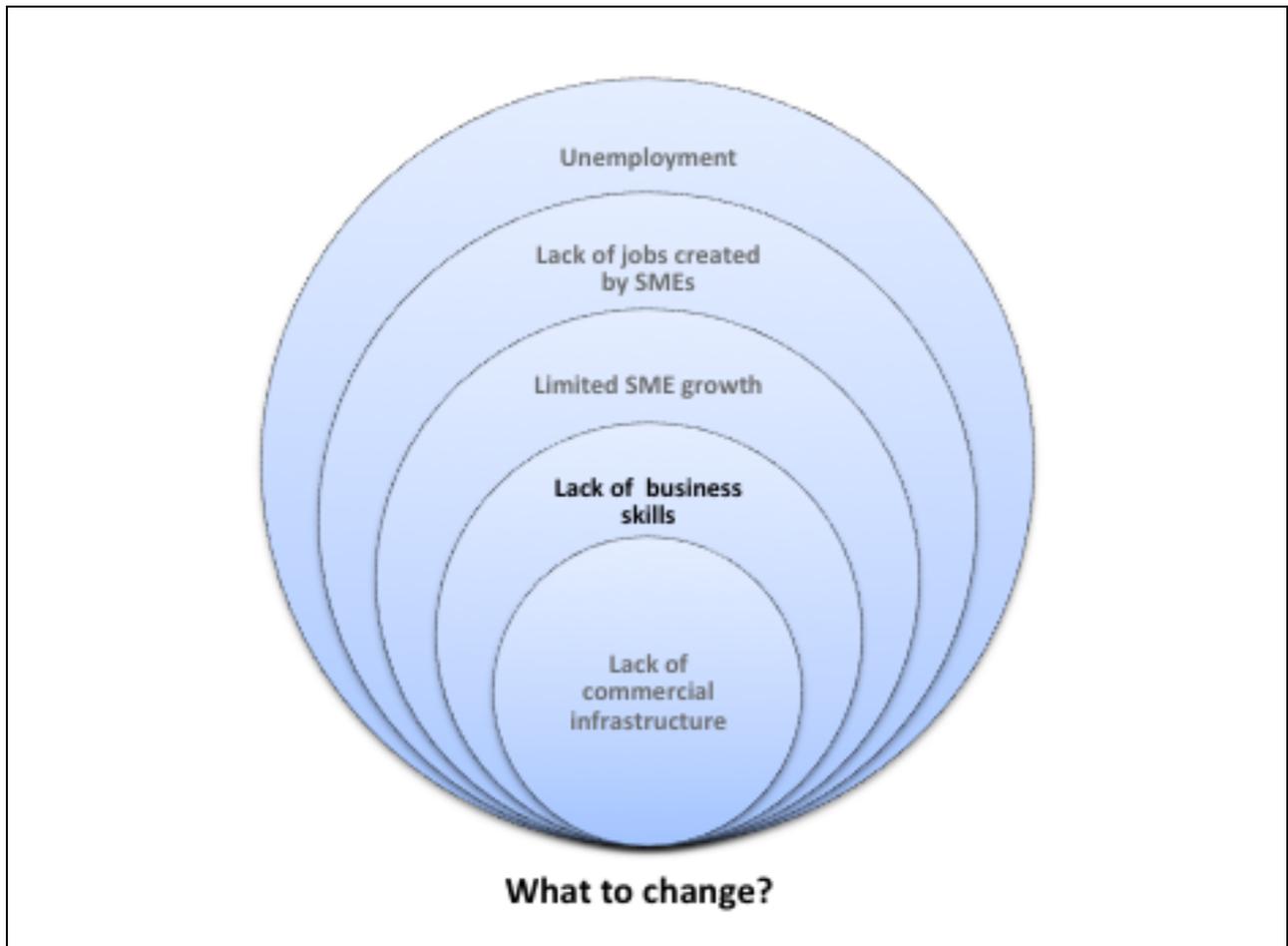


Figure 3-1: Nested Problem Statement

The envisioned value of solving the problem of the lack of a BPM Approach for SMEs lies in its contribution towards SME growth with the expectation of job creation. Growing small enterprises to become medium enterprises, with the objective of job creation, is a top priority for government in South Africa [DTI, 1995]. There is an expectation that SME growth will create jobs to address unemployment; however in South Africa the growth of SMEs into established businesses creating a substantial number of jobs is debatable. In South Africa there is a need to increase the number of opportunity-driven entrepreneurs and assist them to grow SMEs into sustainable businesses [Turton & Herrington, 2012]. The assumption is that growing early-stage opportunity-driven SMEs would contribute to more sustainable SMEs, offering more job opportunities.

The expectation is not that this study will solve the problem of SME growth and job creation; however, creating awareness of BPM as a management approach (a business skill), to assist with SME growth, is one small step as part of the journey to assist SME growth in South Africa.

Considering that the BPM@SME research is looking at the problem from the perspective of the BPM domain, the question can be rephrased as whether it is possible to identify a gap that BPM could

potentially play a role in closing. A key constraint or gap regarding SME growth is the business skills required to grow the small enterprise through the various stages of transition.

If the gap specifically selected for the BPM@SME research is identified as a lack of business skills, then the question is whether BPM could be positioned as a subset of the business skills required. With reference to the Forrester definition [Miers, 2011], BPM is considered to be a management approach relevant for organisational change, value optimisation and process improvement. The transition of a small enterprise to a medium enterprise, or that of an early-stage entrepreneurial activity to an established business entity, involves organisational change, value optimisation and process improvement. Contributing towards closing the gap would be the definition of a BPM approach to help SME managers to benefit from BPM as a discipline during SME growth.

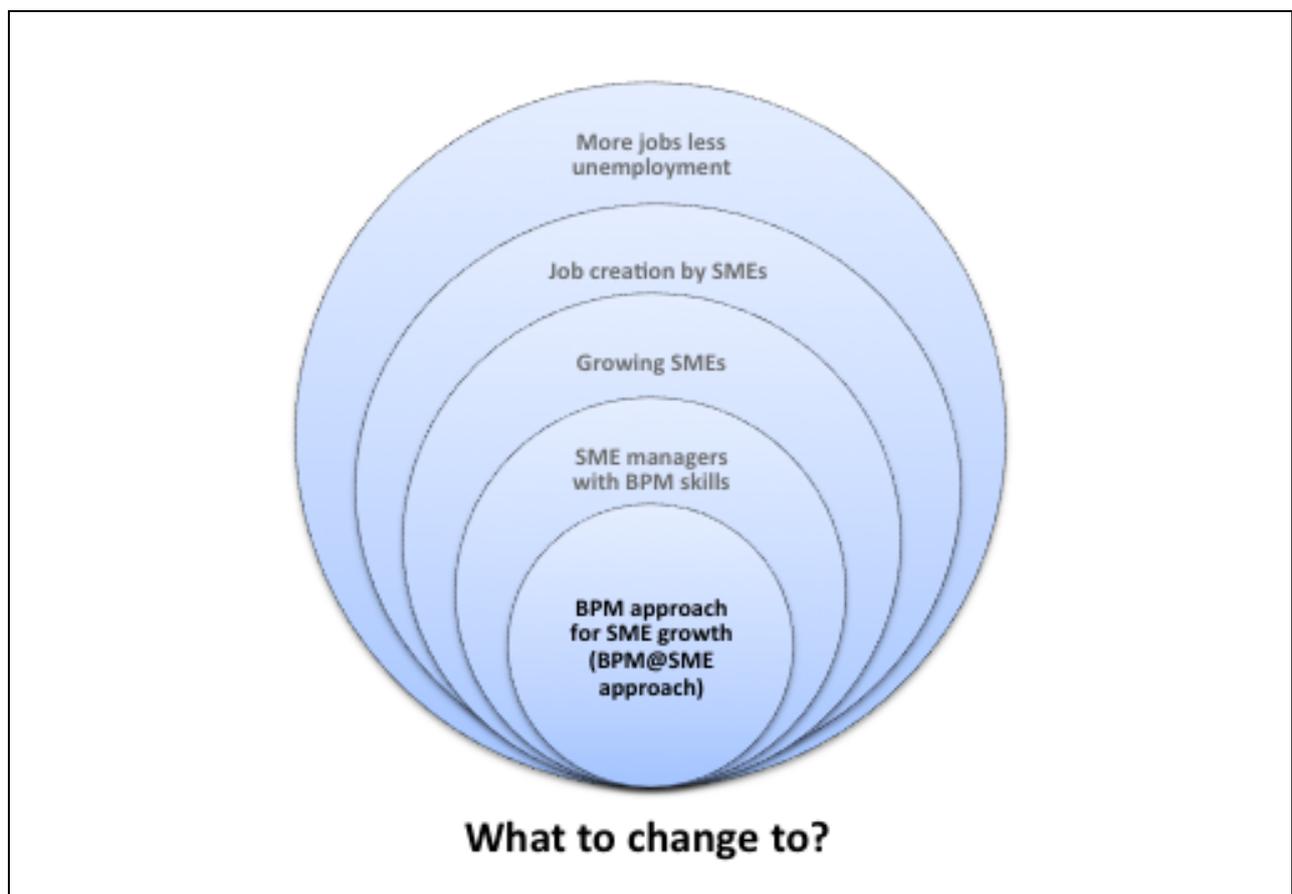


Figure 3-2: Nested Gap Identification

An additional constraint to consider is that the SME manager must be able to master this skill within the limit of the lack of commercial infrastructure mentioned as part of the nested problem statements. The lack of commercial infrastructure is partly related to the phenomenon of SME resource poverty (lack of time, skills and funding). In order to up-skill the SME manager to understand BPM as a management approach for SME growth, there is a gap for an approach to help SME managers to benefit from BPM

without major financial investment. The gap to be closed, or what to change to, is extended to the definition of a BPM approach helping SME managers to benefit from BPM as a discipline during SME growth.

If an SME manager could benefit from a BPM approach helping SME managers during SME growth, this should have a ripple effect through the layers of the gaps illustrated in Figure 3-2. Such a BPM approach to help SME managers could result in more SME managers understanding BPM as a management approach with a positive effect on SME growth, resulting in job creation with the ultimate goal of a decrease in unemployment numbers.

3.2.2 SME Growth

In the Global Entrepreneurship Monitor (GEM) report, Herrington et al. [2010] identified the need in South Africa to assist small enterprises to grow into medium enterprises and in so doing to stimulate job creation. The GEM research program was initiated in 1997 as a joint venture between academics at London Business School and Babson College in the United States. GEM has grown to a consortium of 69 national teams and is regarded as one of the most important longitudinal studies of entrepreneurship in the world. One of the problems highlighted is that there are a large number of small businesses, but these businesses are not growing to become medium businesses with the expected job creation associated with growth.

- In order to get a better understanding of the problem, some basic statistics [Turton & Herrington, 2012] are included in Figure 3-3 to illustrate the first three problems of the nested set of problems depicted in Figure 3-2.

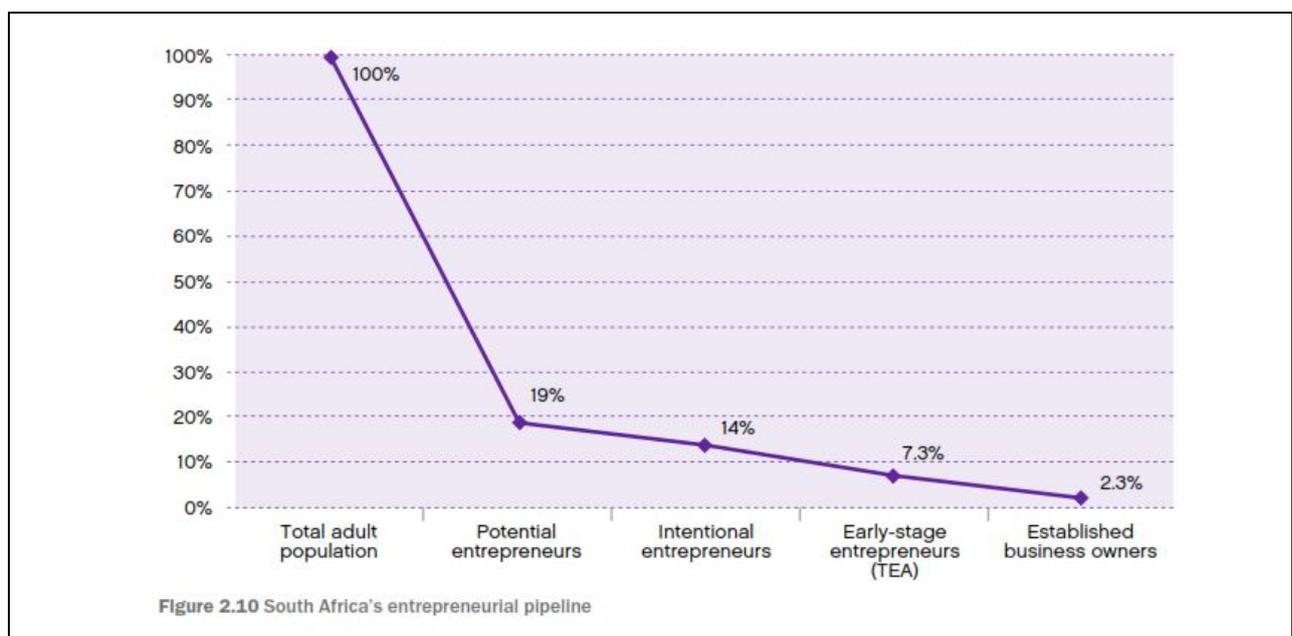


Figure 3-3: South Africa's Entrepreneurial Pipeline [Turton & Herrington, 2012]

Three problems of the nested problem set, namely the unemployment rate, lack of creation of jobs and limited SME growth, can be explained as follows:

- The high unemployment rate in South Africa is a major problem. The unemployment rate in South Africa is 25%, but for youth it is even higher at 48%.
- The number of jobs created by SMEs is far smaller than expected. With reference to the GEM 2012 report [Turton & Herrington, 2012] for South Africa, a mean of 6.1 people have been employed by the early-stage opportunity-driven (interested in growth) entrepreneurs, compared to just 2.1 employees for the necessity-driven (not interested in growth) entrepreneurs. The 2012 statistics are confirmed by the GEM 2010 report [Herrington et al., 2010] stating that, of the 2.4 million registered companies in South Africa in 2009, 2.2 million were SMEs. SMEs thus play an important role in the economy. Only a small proportion of firms (3.9%) in the start-up phase employ any staff, and only a tiny proportion (<3%) of necessity-oriented businesses create six or more jobs. According to Cassell et al. [2001], approximately 95% of all firms in the European Union are SMEs, and in an 2002 publication [Cassell et al., 2002] it is stated that over 99% of United States of America's employers are small firms.
- Limited SME growth, with reference to the number of new start-up SMEs and the transition from early-stage activity to established businesses, is disappointing. Early-stage entrepreneurial activity and the transition from early stage entrepreneurial activity to established business activity is an indication whether SME growth is contributing to job creation as expected. The statistics indicate that both the early-stage entrepreneurial activity rate and the established business activity rate in South Africa are far below the average of efficiency-driven economies. In South Africa the early-stage entrepreneurial activity rate (indicating the occurrence of business start-ups) is 7.3% down from 9.1% in 2011 and is far below the average of 14.3% of efficiency-driven economies [Turton & Herrington, 2012], as represented in Figure 3-3.

Only a small percentage of SME owners envision growing from a small to a medium enterprise. Several studies [Davidsson et al., 2005] have shown that across countries, SME growth is not the norm. Most firms start small, live small and die small, and most business founders have modest growth aspirations for their firms. According to Jones [2009], the average life cycle of SMEs is in the region of five years or less.

3.2.3 SME Resource Poverty

Welsh and White [1981] argue that the very size of a small business creates a special condition, referred to as resource poverty, distinguishing it from its larger counterparts. Resource poverty is a reality in the SME world due to the limitations regarding funding, availability of time and specific expertise. Resource poverty requires different management approaches from those followed by a larger business.

Lack of commercial infrastructure and resource poverty make it difficult for SME managers to source in professional services and consultants to assist with managing the challenges associated with SME growth.

One of the conditions that have the greatest influence on the transition from early-stage entrepreneurial activity to established business ownership is lack of commercial infrastructure [Turton & Herrington, 2012]. Commercial infrastructure includes sub-contractors, suppliers, consultants and professional services, which are just as important for SMEs as for larger and established firms. The concern is that SMEs cannot afford the cost of these services associated with the commercial infrastructure.

3.2.4 The Lack of Business Skills

According to the GEM 2012 Report for South Africa [Turton & Herrington, 2012], one of the conditions most likely to have an impact on the transition from intentional entrepreneurship to early-stage activity is education. The 2010 GEM Report [Herrington et al., 2010] states that formal business requires training in skills, such as how to keep records, budget, manage cash flow, maximise trade credit and write a business plan.

The focus of the BPM@SME research is SME managers' lack of business skills, specifically business process management skills, to grow an SME. This lack of business skills as a constraint is confirmed from a global perspective by Jones [2009, p. 3] in his statement "it is recommended that training be provided for all SME entrepreneurs to prepare them for the road ahead and the challenges and crises that they will inevitably meet along the way". Hanks et al. [1993, p. 5] also refer to the lack of business skills, although phrasing it slightly differently as follows: "piloting an organization through the growth process represents a formidable managerial challenge".

3.3 SME Growth Stage Models

In their review of research on small firm growth, Davidsson et al. [2005] define growth stage models as a description of the distinct stages of SME growth and the set of typical problems and organisational responses associated with each stage. The SME growth stage models typically contain the knowledge that appeals to managers of small enterprises [Davidsson et al., 2005; McMahon, 1998]. Davidsson et al. [2005] and McMahon [1998] refer to the seminal book by Penrose [1959] explaining the two different connotations of growth, namely the amount of growth versus the process of growth. SME growth stage models are related to the process of growth. SME growth is viewed as a series of phases or stages of development through which the business may pass during an enterprise life cycle.

Growth stage models are important for SMEs in order to understand, manage and predict problems that might arise during growing the business. The question is whether growth stage models can successfully assist the SME manager who wants to transform the small enterprise into a medium enterprise. The SME growth stage models that focus on generic problems that organisations may encounter during growth are valuable from various perspectives:

- From a management perspective, for the definition of SME operating models and helping SME managers to make important decisions [Jones, 2009].

- From the prediction perspective, one of the objectives of the model by Greiner [1972] is to create awareness among entrepreneurs of possible crises and solutions as part of the transformation through the different stages.
- From the understanding perspective, Massey et al. [2006] confirm that the life-cycle phenomenon has been found meaningful by SME managers.

In a review of SME growth stage model literature [Davidsson et al., 2005; Hanks et al., 1993; Jones, 2009; McMahon, 1998; Miller, 1987; Perenyi, Selvarajah, & Muthaly, 2008], it is noted that authors of review articles on growth stage models for SMEs agree that it is not easy to extract a coherent picture from research, but the inherent complexity of the phenomenon is at least acknowledged. The expected value of a growth stage model to provide guidance for SME growth should not be ignored. The following list highlights the expected value of such an SME growth stage model assisting with SME growth:

- According to Hanks et al. [1993], one of the objectives of an SME growth stage model is to identify critical organisational transitions, as well as pitfalls the organisation should seek to avoid as it grows in size and complexity.
- McMahon [1998] is interested in a better understanding of the growth process of small firm development as input for research and policy-making.
- It is mentioned by Davidsson et al. [2005] that there are typical managerial growth problems associated with growth state transitions without any requirement to relate them to the number of stages that firms are assumed to go through. They further state that research on internal processes, such as growth state transitions, managerial consequences and solutions, has direct managerial appeal.
- Phelps, Adams, and Bessant [2007] describe growth as a response to predictable managerial challenges or problems and the management of these key transition points.
- The fact that businesses tend to operate for some period of time in a definable state that then changes, sometimes incrementally and other times dramatically, was of interest for Levie and Lichtenstein [2010].

In order to better understand the potential value of SME growth stage models to contributing towards the development of a BPM approach for SMEs, a literature review, as well as an analysis of SME growth stage models, is included in sections 3.3.1 to 3.3.2.

3.3.1 Criticism of SME Growth Stage Models

Reviews of Massey et al. [2006], Davidsson et al. [2005], McMahon [1998] and Hanks et al. [1993] mention the justified criticism regarding over-determinism, questionable empirical support and the fact that the stage models tend to assume that all SMEs pass through each phase of a growth stage model. One of the critiques, which is not addressed in this study, is that growth stage models of SMEs are not sufficiently supported by empirical observation. A second critique, to be addressed in this study, is that the growth stage models tend to assume that all SMEs pass inexorably through each stage.

A summary of the identified criticisms is included in Table 3-1, based on the content of five reviews of SME growth stage models that were published from 1994 to 2010. The selected articles include the work of Hanks et al. [1993], McMahon [1998], Davidsson et al. [2005], Phelps et al. [2007], as well as Levie and Lichtenstein [2010]. A summary of six main constraints, identified by the abovementioned articles, is provided together with an indication of the articles that addressed the identified criticism.

Table 3-1: Criticisms of SME Growth Stage Models

Criticisms of SME Growth Stage Models	Literature reviews of SME Growth Stage Models				
	Hanks et al. [1993]	McMahon [1998]	Davidsson et al. [2005]	Phelps et al. [2007]	Levie and Lichtenstein [2010]
Stage models and life-cycle theories do not accurately represent the growth of SMEs.		X	X	X	X
SME growth stage models are conceptually rather than empirically based.	X	X	X	X	X
The definition of a stage is vague and too general.	X	X		X	X
The number of stages varies.	X	X		X	X
The transition through and sequence of stages result in variations.	X	X	X	X	X
SME growth stage models are descriptive rather than explanatory or predictive.	X	X	X	X	X

Although there is a large variety among SME growth stage models, there is agreement on the criticisms levelled at them. The following list provides a brief explanation of the criticisms of the SME growth stage models as described by the authors listed in Table 3-1:

- *Stage models and life-cycle theories do not accurately represent the growth of SMEs:* Whether a specific SME growth stage model originated from evolution or revolution as its foundation [Greiner, 1972], stages of corporate development [Scott & Bruce, 1987], morphogenesis [Kazanjian, 1988] or an organisational life cycle [Lippitt & Schmidt, 1967], the SME growth stage model is based on the underpinning assumptions of an organismic metaphor regarding growth. Such assumptions typically include the assumptions that growth is linear, sequential, deterministic and invariant. Not only are these assumptions regarding business growth being challenged from the SME growth stage models perspective, but they have been the source of much controversy in the literature of economics as well [Penrose, 1959]. Levie and Lichtenstein [2010] reviewed more than 100 SME growth stage models

that were published over a period of more than 40 years. Based on the outcome of the review [Levie & Lichtenstein, 2010], the conclusion is that stage models and life-cycle theories do not accurately represent the growth of SMEs.

- *SME growth stage models are conceptually rather than empirically based:* There is a lack of empirical validation of the proposed SME growth stage models. The limited empirical validation is further restrained by small samples and cross-sectional data. Levie and Lichtenstein [2010, p. 327] refer to a study of the Churchill and Lewis five-stage model [Churchill & Lewis, 1983] with nearly 40% of the sample not following the predictive growth model. So even if empirical studies were carried out, the outcome did not favour the SME growth stage model theory.
- *The definition of a stage is vague and too general:* There is no clear definition of the characteristics of each stage. Not only does the vague definition of a stage make it difficult for the SME manager to apply the model, but it also results in disparities between models. Even the terminology is not explicitly defined, for example the use of life-cycle stages versus growth stages or developmental stages as similar but different concepts is vague. Another example is the understanding of the size of an SME, as size referred to revenue, number of employees or assets.
- *The number of stages varies:* There is no consensus on how many stages there are in SME growth stage models. The articles referenced in this literature review refer to SME growth stage models with only two stages or even as many as eleven stages.
- *The transition through and sequence of stages result in variations:* One assumption associated with the organismic metaphor is that SME growth implies that organisations evolve through the same series of stages. The literature reviews mentioned that an SME does not need to go through all the stages and does not need to go sequentially from one stage to another.
- *Descriptive model versus explanatory or predictive model:* The models serve well for descriptive purposes but have limited explanatory or predictive power. As illustration, Levie and Lichtenstein [2010, pp. 327-328] refer several times to the predictive nature (or lack of predictive nature) of the SME growth stage models. References include statements such as:
 - companies sampled did not follow the predicted growth,
 - a predictive model classified firms into the *error* cell,
 - a model was a poor predictor of the problems,
 - the firms exhibited their own distinctive pattern and
 - fewer than a third of the sampled companies followed paths that could in any way reflect the paths predicted by a life-cycle model.

3.3.2 Criticism of SME Growth Stage Models – Analysis

An analysis of the corporate records of an actual SME, company SME X, growing from a small enterprise into a medium enterprise was used to confirm the criticisms of SME growth stage models associated with the stages specifically. The nature of the underlying business conducted by the small enterprise was that of a consulting practice with a narrowly defined service range. During the 2011/2012 financial year the

number of full time employees was around 35 and the number of subcontractors varied between 10 and 20. The SME's management wanted to understand the areas of concern and wished to identify the initiatives to be included in the business plan to deliberately manage the growth from a small to a medium enterprise. During 2010, company SME X developed an operating model with one of the objectives being the growth of the enterprise from a small into a medium enterprise. The growth model for 2011/2012 financial year was based on the replication of new pipelines. The *replication model* [Ross, Weill, & Robertson, 2006] was found to be a good fit to describe the growth model.

The Model for Small Business Growth [Scott & Bruce, 1987] was used in the analysis of company SME X, consisting of five stages as illustrated in Table 3-2. The principles of the Evolution of Five Phases of Growth [Greiner, 1972] were the foundation of the Model for Small Business Growth [Scott & Bruce, 1987]. The Evolution of Five Phases of Growth [Greiner, 1972] highlighted typical crises and solutions as part of the transformation through the different stages of SME growth. In the Model for Small Business Growth [Scott & Bruce, 1987] the different criteria, such as stage of the industry and key issues, were presented in relation to each stage, from the inception stage (Stage 1) through to the maturity stage (Stage 5). For example, in Stage 1, *inception*, the key issues were those of obtaining customers and economic production, which changed in the *maturity* stage to those of expense control, productivity, and niche marketing if the industry was declining.

Table 3-2: Model for Small Business Growth [Scott & Bruce, 1987, p. 48]

	Stage 1 Inception	Stage 2 Survival	Stage 3 Growth	Stage 4 Expansion	Stage 5 Maturity
Stage of Industry	Emerging, fragmented	Emerging, fragmented	Growth, some larger competitors, new entries	Growth, shakeout	Growth/ shakeout or mature/ declining
Key Issues	Obtaining customers, economic production	Revenues and expenses	Managed growth, ensuring resources	Financial growth, maintaining control	Expense control, productivity, niche marketing if industry declining
Top Management role	Direct supervision	Supervised supervision	Delegation, coordination	Decentralisation	Decentralisation
Management Style	Entrepreneurial, individualistic	Entrepreneurial, administrative	Entrepreneurial, coordinated	Professional, administrative	Watchdog
Organisation Structure	Unstructured	Simple	Functional, centralised	Functional, decentralised	Decentralised functional/ product
Product and Market Research	None	Little	Some new product development	New product, innovation, market research	Production innovation

Systems and Controls	Simple bookkeeping, eyeball control	Simple bookkeeping, personal control	Accounting systems, simple control reports	Budgeting systems, monthly sales and production reports, delegated control	Formal control, systems management by objectives
Major Source of Finance	Owners, friends and relatives, suppliers leasing	Owners, suppliers, banks	Banks, new partners, retained earnings	Retained earnings, new partners, secured long-term debt	Retained earnings, long-term debt
Cash Generation	Negative	Negative / breakeven	Positive but reinvested	Positive with small dividend	Cash generator, higher dividend
Major Investments	Plant and equipment	Working capital	Working capital, extended plant	New operating units	Maintenance of plant and market position
Product and Market	Single line and limited channels and market	Single line and market but increasing scale and channels	Broadened but limited line, single market, multiple channels	Extended range, increased markets and channels	Contained lines. Multiple markets and channels

Using the 2010 operating model of company SME X, the current and future states of the SME were mapped according to the Model for Small Business Growth [Scott & Bruce, 1987]. The outcome of the current state and future state mapping of the analysis of company SME X is illustrated in Figure 3-4.

Based on the SME growth stage model principles, the expectation was that there would be a single value for all areas of concern, e.g. for all areas of concern the stage would be Stage 3, an indication that the company was in that specific stage of growth. A second expectation was that for all areas of concern the future state would be the next stage, for example Stage 4, indicating that the company was moving to the expansion stage.

This mapping of the current and future states of the company illustrated the challenges faced by the company in determining its current and future *stage* according to the guidelines of growth stage models. For the product and market research as well as major investments, the current state of company SME X was still Stage 2, but for management style, systems and controls and cash generation the current states were associated with Stage 4. For the other six areas of concern, the current state of company SME X was indicated as Stage 3. Regarding moving to the future state the intent, for the majority of the areas of concern, was to move to the next stage. However, for three of the areas of concern, namely management role, systems and controls as well as major source of finance, there was no business value in moving to the next stage.

Whether the observation that an enterprise is not necessarily in the same stage for all areas of concern was contributing towards or was a result of the criticism of SME growth stage models was not clear. What is confirmed, with this analysis of company SME X, is that the typical SME growth stage model may be

value adding to create awareness of concepts related to growth, but a new approach to assist SME managers is required in order for them to benefit from these concepts related to growth.

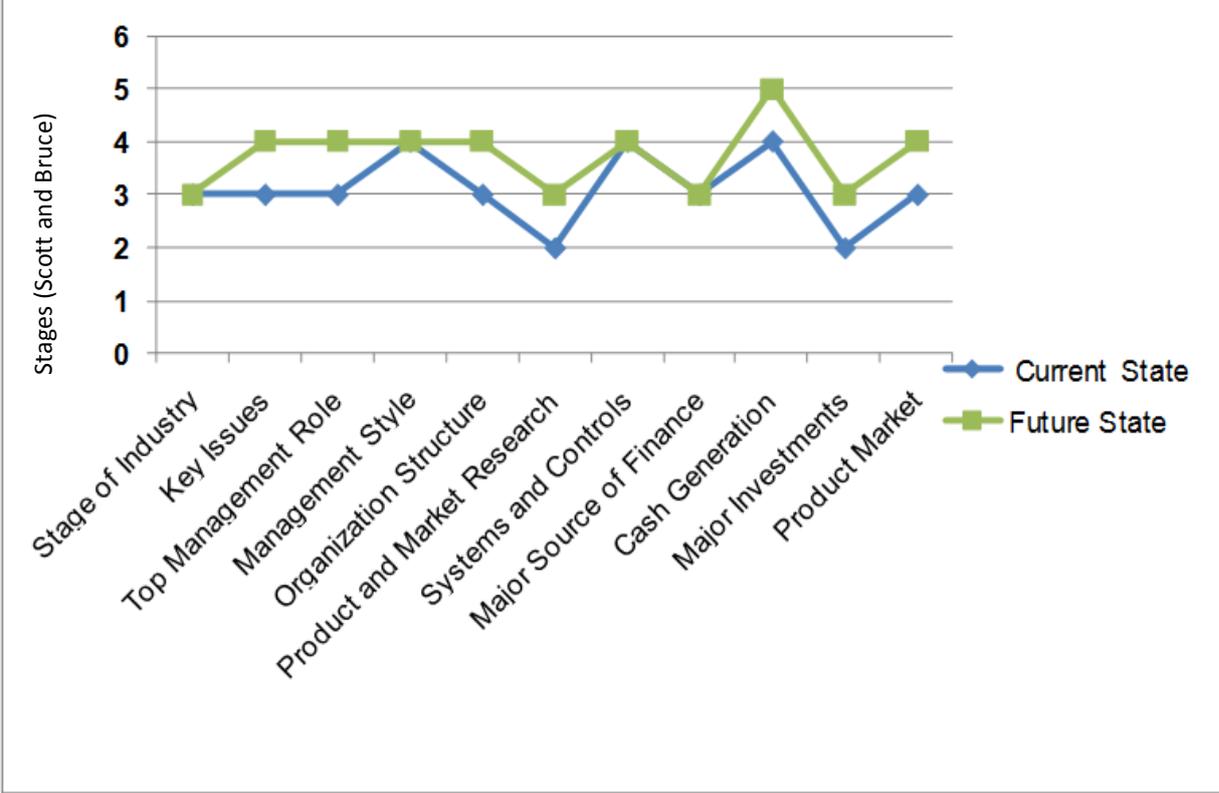


Figure 3-4: Current and Future States of Company SME X based on 2010 information

3.4 BPM Approach

In order to develop a BPM approach for SMEs it is important to identify existing BPM approaches, with the criteria defined as:

- The BPM approach should be aligned with the BPM definition by Forrester [Miers, 2011].
- Considering SME resource poverty, the BPM approach should fit a scenario with limited time, money and expertise available, thus geared towards self-sufficiency.

The focus of the BPM literature review was to identify the different understandings of a BPM approach and to determine if the specific understanding is aligned with the criteria mentioned in the previous paragraph. The literature review did not consider a more in depth review of material related to a specific understanding of BPM if the specific understanding did not align with the given criteria.

As part of the literature search, a request was posted on various forums, including the LinkedIn Business Process Management Professionals Group and Researchgate. The request was for references that would contribute towards a more comprehensive literature review of frameworks or approaches for the development of a BPM roadmap. The post did not include any specific definition of BPM, so as to get an indication of the understanding of the concepts, framework, approach and BPM if used generally without a well-defined context.

The comments confirmed that there is no common definition and understanding of BPM. The responses did not include a BPM approach that met the criteria of alignment with Forrester [Miers, 2011], being appropriate for SME resource poverty and self-sufficiency. When the responses were studied, it was possible to identify the components to be considered as part of such a BPM approach. The observations from the comments can be summarised as follows:

- Regarding the term BPM, it was confirmed that it is important to differentiate between BPM as a management approach, as defined by Forrester [Miers, 2011], and the enabling technology for business process orchestration, also referred to as business process execution or business process automation. The Gartner technology research group classifies the latter as Business Process Management Suites (BPMS) [Sinur & Hill, 2010].
- The term BPM approach was associated by some of the respondents with the business process architecture framework, also known as a business process reference models, such as APQC [APQC, 2014] or eTOM [TMForum, 2014]. The business process architecture and business process reference models should be considered as part of the BPM approach, but they are not sufficient on their own.
- A framework or approach for a BPM roadmap was associated by a number of respondents with a BPM Centre of Excellence, a concept that is relevant to large corporates but not appropriate to the SME resource poverty scenario. Valuable information for reference and inclusion in the packaging of a BPM approach is available in books targeting the large corporate market [Becker et al., 2011; Jeston & Nelis, 2008; Snabe et al., 2008]. The proposed BPM approach should be validated by large corporates to ensure completeness of such an approach.
- A number of references were related to the intellectual property of consulting firms, excluding them not only from the typical SME scenario from a financial point of view, but also from packaging the material in a BPM approach for SMEs [Davis, 2010; Tregear, 2010].
- BPM related frameworks associated with specific enabling technology products were also listed [IBM, 2012; Infosys, 2014]. The envisioned BPM approach should also include an enabling technology component, but SME resource poverty limits the inclusion of BPM enabling technology to typical open domain or subscription-based software.
- One of the respondents referred specifically to the CMMI maturity framework [Forrester, Buteau, & Shrum, 2011]. A maturity assessment and framework are often part of a roadmap, but the self-sufficiency as criteria limits the role of a maturity assessment as part of a BPM approach for SME growth

- There were also references to BPM optimisation techniques, including Six Sigma and Lean [George, 2004]. These BPM techniques would be another component to consider for a BPM approach for SME growth. [George, 2004].

In addition to the posting on various forums, an additional question to consider was whether there are any *BPM for Dummies* or *DIY-BPM* or *BPM for SME* reference materials to consider for the a BPM approach for SME growth:

- There is indeed a co-brand booklet *BPM Basics for Dummies*, a special Software AG edition [Garimella et al., 2008]. This booklet, however, focuses on BPM as enabling technology as mentioned earlier in this section.
- The references to DIY BPM have different flavours, from referring to enabling technology to student and practitioner forums. No comprehensive BPM approach was identified using the DIY BPM phrase in literature searches.

There are a number of BPM for SME-related references, some of them confirming the problem statement of the BPM@SME research and others focusing on a more technical approach, highlighting components to be addressed as part of the proposed BPM approach. These references include:

- Research by Feldbacher et al. [2011] evaluates the extent to which SMEs use BPM techniques and methods. Some of the findings include the observation that, although the SMEs did not have explicit process design and or process documentation, some of them did have work procedures. These work procedures are not used for optimising processes but are typically used to train employees. The commitment of top management is the key driver of BPM, and there is a perception that BPM becomes more relevant as the number of staff members increases. The potential benefit of BPM is associated with the availability of information and the clear definition of responsibilities. Certification is only considered if it is required by a specific industry sector for conducting business.
- The paper by Imanipour et al. [2012] identifies and analyses the factors inhibiting the successful implementation of BPM projects in the Iranian SME context. It is not surprising to find the lack of financial resources, the high cost of BPM implementation, the lack of understanding of the value of BPM on the strategic level and a lack of a standardised methodology as the top four factors identified as part of the research. This is confirmation that the research question of the BPM@SME study is a valid and relevant one. The research of Imanipour et al. [2012] is an extension of the work by Chong [2007].
- There are also references [Barnard, 2011; Dehbokry & Chew, 2014; Kolar, 2011] that focus on BPM for SMEs more from the enabling technology perspective. These references highlight the importance of including a BPM enabling technology component as part of the proposed BPM approach.
- From a resource poverty perspective, there are the following references: a reference to an Agile BPM for SME approach [Kolar & Pitner, 2012]; a recommendation regarding a business process modelling language or notation [Nielen et al., 2010]; a reference to the importance of role activity diagrams

[Aksu et al., 2010]; and a BPM4SME methodology with a meta-model that serves as input for the implementation of a business process management tool [Hruban, 2014].

The literature review related to a BPM approach did not find an existing solution for the stated problem of the lack of a BPM approach to support managers of SMEs by alignment of process, people and information technology.

3.5 Identified Problem of the BPM@SME Research

The main problem statement for the research presented in this thesis was that, given the reality of SME resource poverty, there was not a suitable BPM approach that could be used to support SME managers, during the typical transitions associated with SME growth, to benefit from BPM as management approach.

A number of sub-problems were identified during the Main Research Cycle, including the following:

- Although SME growth stage models exist, these models were not without shortcomings.
- Due to SME resource poverty it was important to provide a BPM approach supporting the reality of resource poverty.
- For an SME manager to benefit from the BPM as a management approach, the challenge was to relate a BPM approach to SME transitions typical of SME growth.

3.6 Suggestion towards Development of a BPM Approach for SME Growth

There are three components to the suggestion towards the development of a BPM approach to help SME managers to benefit from BPM as a management approach through the transitions of growth. The components are:

- The development of an SME Growth State Transition Model.
- The development of a BPM Approach sensitive towards resource poverty.
- The cross-mapping of the SME growth state transitions to the BPM Approach.

These components are described in more detail in section 3.6.1 to section 3.6.3.

3.6.1 Development of an SME Growth State Transition Model

On the basis of the literature review and the analysis of SME growth stage models presented in section 3.3, it became clear that the SME growth stage models needed to be reviewed and adjusted in order for them to be used as input for the BPM@SME research. As part of the circumscription related to the research process, the suggestion was to add Research Sub-Cycle 1 to address the stated critique of SME growth stage models. The suggestion for Research Sub-Cycle 1 of the BPM@SME research was to

identify the growth state transitions, mentioned in the existing SME growth stage models, and then to integrate these state transitions into an SME Growth State Transition Model. Such an SME Growth State Transition Model should avoid the SME growth stage model criticisms discussed in section 3.3.1.

As illustrated in the analysis in section 3.3.2, it was possible to determine the current and future states of an enterprise associated with a specific area of concern related to growth. Mentions of growth state transitions were found in the literature, either within the context of SME growth stage models or as a rebuttal of the criticism of the SME growth stage models. The concept of growth state transitions related to SME growth was found in the following references:

- As part of this BPM@SME study, Jacobs et al. [2011] referred to an SME State Transition Model. This proposed model by Jacobs et al. [2011] was derived from the enterprise architecture principle of an as-is and to-be state.
- Earlier work, for example the Evolution of Five Phases of Growth [Greiner, 1972], mentioned that the evolutionary and revolutionary phases of an organisation were the result of an action on the part of management to deal with a crisis. The interpretation can be made that a specific crisis initiated a transition that was associated with an action from management.
- According to Miller and Friesen [1984], there are a large number of transitional paths associated with SME growth. SMEs go through a highly multifaceted transition as a result of the increased complexity of strategies and situations due to growth. As the strategies and situations become more complex, the structures and decision making increase in complexity, resulting in transitions to manage these complexities.
- Tipping Points is a concept introduced by Gladwell [2000] and is used in the state framework by Phelps et al. [2007] to refer to the problems faced by the enterprise. The focus is on finding and implementing knowledge in order to resolve the challenge and to move from one state to another.
- The conceptual model by Perenyi et al. [2008] mentions transitions that may indicate SME growth, without imposing the sequential nature of stages.
- Levie and Lichtenstein [2010] discuss the dynamic states approach as an alternative to SME growth stages models.

The final step towards the finalisation of the suggestion was to include a likely source from which to derive SME growth state transitions. The suggestion was to analyse existing SME growth stage models in order to identify SME growth state transitions and to package them as an SME Growth State Transition Model.

3.6.2 Development of a BPM Approach

The objective of the BPM@SME research was not to research the best BPM practices but to package available BPM related information as an approach for use by an SME. A second suggestion was to define and package a BPM Approach that took into account the structure and style of the book *Business Model Generation* [Osterwalder & Pigneur, 2010], as it has been accepted by the SME community as a

framework to define a business model. The book is known as an unconventional management book about business model innovation. The book is designed to convey the essentials of what you need to know, quickly, simply and in a visual format. *Business Model Generation* is a practical, inspiring book for anyone striving to improve a business model and to change the way they think about business models.

The structure and style of the BPM Approach should be similar, but the content would be different. The suggestion was to develop a BPM Approach that would be inspiring and practical for doers and would change the way SME managers think about BPM as a management approach.

3.6.3 Cross-mapping State Transition Model to BPM Approach for SME Growth

The third suggestion, as part of the circumscription of the Main Research Cycle, was to cross-reference concepts from the suggested BPM Approach to specific states in the suggested SME Growth State Transition Model. An example from an SME growth perspective would be the appointment of additional employees as a result of growth and the resultant increase in workload. From a BPM perspective, the best practice would be role clarification and the definition of controls and key performance indicators that would enable management to mentor and monitor work delegated to a new role. The artefact developed was referred to as the BPM@SME Approach and the approach would include the alignment of process, people and information technology.

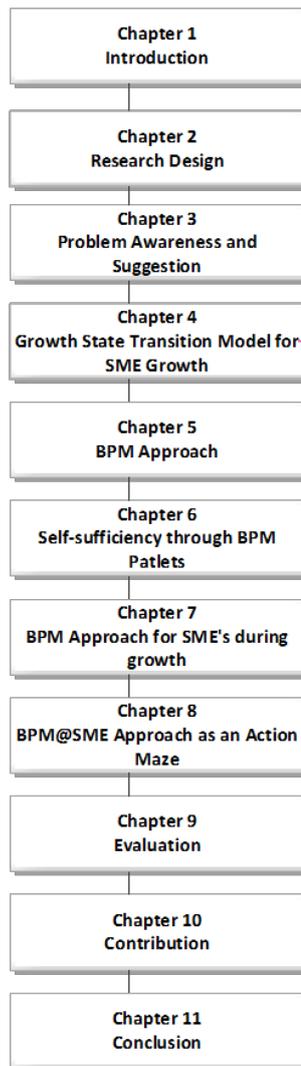
3.7 Conclusion

The literature review of concepts such as SME resource poverty, SME growth stage models and BPM approaches resulted in a better understanding of the problem of the BPM@SME research. In order to resolve these challenges, additional research objectives and research cycles were identified and incorporated into the research design of the BPM@SME research.

Research Sub-Cycle 1, with the objective of benefiting from SME growth stage models in the midst of criticism and the suggested development of an SME Growth State Transition Model, is discussed in Chapter 4. Research Sub-Cycle 2, with the research objective of defining and packaging a BPM Approach, is described in Chapter 5. The development of the BPM@SME Approach is discussed in Chapter 7.

Chapter 4 : SME Growth State Transition Model

Chapter 4 Outline



- 4.1 Introduction
- 4.2 Proposed 5S SME Growth State Transition Model
 - 4.2.1 Identification of SME growth stage models
 - 4.2.2 Selection of Representative SME growth stage models
 - 4.2.3 Deriving SME growth state transitions from selected SME growth stage models
 - 4.2.3.1 Evolution in Five Phases of Growth Model
 - 4.2.3.2 Organisational Passage Model
 - 4.2.3.3 Stages of Small Business Growth Model
 - 4.2.3.4 Integrated Life Cycle Model
 - 4.2.3.5 Corporate Life Cycle Model
 - 4.2.3.6 Model for Small Business Growth
 - 4.2.3.7 Structural Variable Model
 - 4.2.3.8 Tipping Point Framework
 - 4.2.3.9 Organisational Life Cycle Scale
 - 4.2.3.10 Stage Categories Model
 - 4.2.4 5S SME Growth Classification Framework for SME growth state transitions
 - 4.2.5 Consolidation of the SME growth state transitions into proposed 5S SME Growth State Transition Model
 - 4.2.5.1 SME assessment of the strategy as differentiator in the market
 - 4.2.5.2 SME assessment of structure
 - 4.2.5.3 SME assessment of the SME as a system
 - 4.2.5.4 SME assessment of the style of management
 - 4.2.5.5 SME assessment of the staff component
- 4.3 Demonstration of the 5S SME Growth State Transition Model
- 4.4 Observations based on the demonstration
- 4.5 Conclusion
- ...

4.1 Introduction

The purpose of this chapter is to describe the development of an SME Growth State Transition Model to address the problem of the criticism of SME growth stage models, as discussed in section 3.3.1. The suggestion, discussed in section 3.6.1, was to analyse existing SME growth stage models to identify SME growth state transitions and to package them as an SME Growth State Transition Model. The understanding of the transitions associated with SME growth helps to develop a BPM approach to assist SME managers to benefit from BPM as a management approach. Such an SME Growth State Transition Model resolves the concern that SME growth stage models did not accurately represent the growth of SMEs. Instead it was argued that the state transitions, derived from the SME growth stage models, would provide the information required to position BPM concepts to assist the SME manager during SME growth, as to be discussed in Chapter 7.

The development of the *5S SME Growth State Transition Model* is part of the Research Sub-Cycle 1, as illustrated in Figure 4-1. The positioning of Research Sub-Cycle 1 as part of the research approach was described in Chapter 2 and illustrated in Figure 2-3.

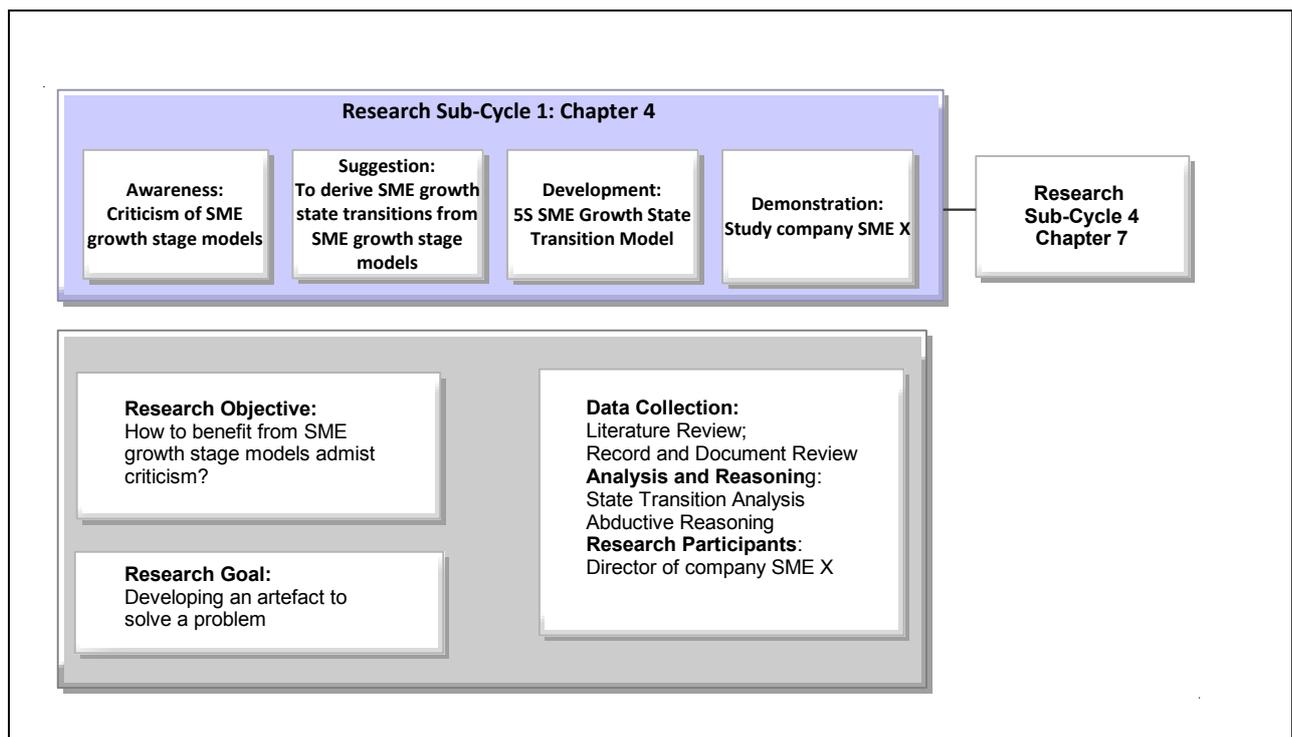


Figure 4-1: Research Sub-Cycle 1

The data collection technique was a literature review of SME growth stage models. The analysis and reasoning methods included state transition analysis and abduction to classify and consolidate the

identified state transitions associated with SME growth. The evaluation was limited to a demonstration to illustrate the use of the artefact as part of a study.

The development of the 5S SME Growth State Transition Model is discussed in section 4.2. The evaluation of the 5S SME Growth State Transition Model was done through a demonstration, described in section 4.3. The demonstration included a review of the records and documents of company SME X for the period 2002-2014, and an interview with the financial director of company SME X to verify the correctness of the demonstration. The aim was to find an SME with available records to verify the state transitions. Some observations based on the outcome of the demonstration are highlighted in section 4.4. This chapter concludes in section 4.5 with a reference to the 5S SME Growth State Transition Model, positioning it as input towards the development of the BPM@SME Approach in Chapter 7.

4.2 Proposed 5S SME Growth State Transition Model

The development of the proposed 5S SME Growth State Transition Model involved five steps, starting with the identification of a list of SME growth stage models, followed by the selection of ten representative SME growth stage models. The selected ten SME growth stage models were analysed to derive SME growth state transitions. The terminology used in the ten SME growth stage models was used to define an SME growth state transition classification framework. The detailed SME growth state transitions were mapped against the SME growth state transition classification framework, resulting in the consolidated 5S SME Growth State Transition Model.

The identification of an inventory of existing SME growth stage models is discussed in section 4.2.1. The selection of a representative set of SME growth stage models is described in section 4.2.2, followed by the deriving of SME growth state transitions from these selected SME growth stage models. The derived SME growth state transitions, per selected SME growth stage model, are discussed from section 4.2.3.1 to section 4.2.3.10. In order to consolidate the derived SME growth state transitions in section 4.2.5, a classification framework is defined in section 4.2.4. The proposed artefact is referred to as the *5S SME Growth State Transition Model*.

4.2.1 Identification of SME Growth Stage Models

The literature review of SME growth stage models by Levie and Lichtenstein [2010] included references to 104 distinct articles referencing SME growth stage models published during the period 1962 to 2006. In order to keep the length of the thesis within acceptable boundaries, not all 104 SME growth stage models, as referenced in the state transition analysis, were included in the BPM@SME research. Instead, ten SME growth stage models, representing the majority of concepts found in the 104 growth stage models, were identified for inclusion in the detailed state transition analysis. An in-depth analysis of all 104 models is identified as further research.

The identification of articles describing SME growth stage models, as candidates for selection of one of the ten representative models, focused on two periods, namely articles published in the period 1962 to 2006 and articles published during the period after 2006. For the period 1962 to 2006, candidates were identified by cross-mapping the references of the following literature reviews in Table 4-1.

- Hanks et al. [1993] include references to eleven articles describing SME growth stage models.
- McMahon [1998] refers to 31 articles describing SME growth stage models.
- Davidsson et al. [2005] refer to nine articles describing SME growth stage models.
- Levie and Lichtenstein [2010] cite 104 articles describing SME growth stage models. For the purpose of the identification of ten acknowledged references to SME growth stage models, only references also listed by one of the other literature reviews or references that were cited four or more times were considered, resulting in 28 of the 104 articles being included in the candidate list of SME growth stage model references.
- Phelps et al. [2007] include 33 different references in their SME life cycle literature review.

Table 4-1: Candidate References Describing SME Growth Stage Models (1962-2006)

Sources of SME Growth Stage Models Literature Review Articles published between 1962 and 2006	Levie and Lichtenstein [2010]	Phelps et al. [2007]	Davidsson et al. [2005]	McMahon [1998]	Hanks et al. [1993]
Collins, Moore, and Unwalla [1964]				4	
Buchele [1967]	1			2	
Lippitt and Schmidt [1967]	2	1		17	
Filley [1962]	3	2			
Steinmetz [1969]	4	3		27	
Greiner [1972]	5	4	1	10	1
Kroeger [1974]	6			16	
Torbert [1974]	7			30	
Lyden [1975]				18	
McQuire [1976]	8			19	
Thompson [1976]				29	
Hosmer, Cooper, and Vesper [1977]	9			12	
Parks [1977]				22	
Gervais [1978]				9	
Katz and Kahn [1978]	10			13	

Sources of SME Growth Stage Models Literature Review Articles published between 1962 and 2006	Levie and Lichtenstein [2010]	Phelps et al. [2007]	Davidsson et al. [2005]	McMahon [1998]	Hanks et al. [1993]
Adizes [1979]	11	5	2	1	2
Kimberly [1979]		6		15	
Vozikis and Glueck [1980]				6	
Naoum [1981]	12			21	
Galbraith [1982]	13	7	3	8	3
Perry [1982]	14			23	
Churchill and Lewis [1983]	15	8	4	3	4
Quinn and Cameron [1983]	16	9	5	24	5
Miller and Friesen [1984]	17	10		20	6
Vargas [1984]				31	
Smith, Mitchel, and Summer [1985]	18	11		26	7
Flamholtz [1986] Flamholtz [1995]	19	27	6	7	8
Tushman, Newman, and Romanelli [1986]		12			
Scott and Bruce [1987]	20	13	7	25	9
Kazanjian and Drazin [1990] Kazanjian [1988]	21	14/16	8	14	10
Hasenfeld and Schmid [1989]		15			
Hanks et al. [1993] Hanks [1990]	22	21	9	11	11
Beatty and Ulrich [1991]		17			
Cosier [1991]		18			
Dodge, Fullerton, and Robbins [1994] Dodge and Robbins [1992]	23	19/24		5	
Gupta and Chin [1993]	24	20			
Basily and Grochau [1993]		22			
Terpstra and Olson [1993]	25	23		28	
Eggers, Leahy, and Churchill [1994]	28	25			
Gudmundsson [1998]		28			
Mitra and Pingali [1999]		29			
Shim, Eastlick, and Lotz [2000]		30			

Sources of SME Growth Stage Models Literature Review Articles published between 1962 and 2006	Levie and Lichtenstein [2010]	Phelps et al. [2007]	Davidsson et al. [2005]	McMahon [1998]	Hanks et al. [1993]
Abetti [2000]	26	31			
Beverland and Lockshin [2001]	27	32			
Rutherford, Buller, and McMullen [2003]		33			

For the period after 2006, an additional seven references to SME growth stage models were identified. The seven references, included in Table 4-2, were also considered for the list of ten representative SME growth stage models.

Table 4-2: References to SME Growth Stage Models Published after 2006

Literature Review Published after 2006	Year of publication
Phelps et al. [2007]	2007
Perenyi et al. [2008]	2008
Lester and Parnell [2008]	2008
Levie and Lichtenstein [2010]	2010
Farouk and Saleh [2011]	2011
van Koeverden [2012]	2012
Gupta, Guha, and Krishnaswami [2013]	2013

4.2.2 Selection of Representative SME Growth Stage Models

The selection of the ten representative SME growth stage models from the identified publications of SME growth stage models listed in Table 4-1 and Table 4-2 was done by applying the following criteria:

- A reference to an SME growth stage model was included in Table 4-3 if the reference in Table 4-1 was referenced by at least four of the five literature reviews.
- For those references included in Table 4-3, the number of times that the reference was cited, as indicated in the literature review by Levie and Lichtenstein [2010], was included in the table as well. As an additional test it was checked that the references most cited, according to Levie and Lichtenstein [2010], were all included in Table 4-3 for consideration as a representative SME growth stage model.

- The SME growth stage models described in literature, listed in Table 4-3, were further examined to determine if the description of an SME growth stage model in literature was sufficient to derive SME growth state transitions. From the authors identified for the short list of SME growth stage models and listed in Table 4-3, seven were selected as listed in Table 4-4 as a source for the identification of SME growth state transitions.

Table 4-3: Short list of SME Growth Stage Models References

Literature review	Number of Times Cited [Levie & Lichtenstein, 2010]	Levie and Lichtenstein [2010]	Phelps et al. [2007]	Davidsson et al. [2005]	McMahon [1998]	Hanks et al. [1993]
Greiner [1972]	21	x	x	x	x	x
Adizes [1979]	15	x	x	x	x	x
Galbraith [1982]	4	x	x	x	x	x
Churchill and Lewis [1983]	14	x	x	x	x	x
Quinn and Cameron [1983]	9	x	x	x	x	x
Miller and Friesen [1984]	7	x	x		x	x
Smith et al. [1985]	4	x	x		x	x
Flamholtz [1995]	5	x	x	x	x	x
Scott and Bruce [1987]	4	x	x	x	x	x
Kazanjian [1988] Kazanjian and Drazin [1990]	11	x	x	x	x	x
Hanks [1990] Hanks et al. [1993]	2	x	x	x	x	x

Table 4-4: Representative SME Growth Stage Model References from Literature Review Sources

Author of SME Growth Stage Model
Greiner [1972]
Adizes [1979]
Churchill and Lewis [1983]
Quinn and Cameron [1983]
Miller and Friesen [1984]
Scott and Bruce [1987]
Hanks et al. [1993]

The seven references published after 2006, as listed in Table 4-2, were also considered as candidate sources. The SME growth stage models described by Phelps et al. [2007], Lester and Parnell [2008] and Levie and Lichtenstein [2010] were included in the final list of references of SME growth stage models in Table 4-5. The following four references were not included, on the basis of the outcome of the analysis as indicated per reference:

- Perenyi et al. [2008] focused on the conceptualisation of SME growth and the opportunity to derive growth state transitions from the content was limited.
- Farouk and Saleh [2011] developed a dynamic model to demonstrate the effects of different critical resources on growth. The market strategy played a dominant role, and references to growth state transitions outside the marketing domain were limited.
- van Koeverden [2012] focused on one of the areas of concern associated with SME growth, namely the process of delegation of authority. The content only allows for deriving a limited set of growth state transitions if the broader context of SME growth is considered.
- The work by Gupta et al. [2013] was part of PhD research work and was merely setting the scene for further research.

The final selection of ten representative references to be used as sources to derive SME growth state transitions from SME growth stage models is listed in Table 4-5. The name used to identify a specific SME growth stage model was derived from the content of the published article and will be used to refer to a specific model within the context of the BPM@SME research.

Table 4-5: Representative References to SME Growth Stage Models

Representative List of References to SME Growth Stage Models	Name of the SME Growth Stage Model within BPM@SME Context
Greiner [1972]	Evolution in Five Phases of Growth Model
Adizes [1979]	Organisational Passages Model
Churchill and Lewis [1983]	Stages of Small Business Growth Model
Quinn and Cameron [1983]	Integrated Life Cycle Model
Miller and Friesen [1984]	Corporate Life Cycle Model
Scott and Bruce [1987]	Model for Small Business Growth
Hanks et al. [1993]	Structural Variable Model
Phelps et al. [2007]	Tipping Point Framework
Lester and Parnell [2008]	Organisational Life Cycle Scale
Levie and Lichtenstein [2010]	Stage Categories Model

4.2.3 Deriving SME Growth State Transitions from Selected SME Growth Stage Models

Each of the SME growth stage models listed in Table 4-5 was analysed and the SME growth state transitions were derived, as described in sections 4.2.3.1 to 4.2.3.10, as input for the development of the 5S SME Growth State Transition Model. The focus of deriving the growth state transitions from the selected SME growth stage models was to determine whether it was possible to derive the states as the result of a transition from the SME growth stage models. The scope of the BPM@SME research did not include further research to determine whether it was possible for various people to derive the same growth state transitions or to determine whether all possible growth state transitions had been identified.

4.2.3.1 Evolution in Five Phases of Growth Model

The following is a summary of the Evolution in Five Phases of Growth Model [Greiner, 1972], depicted in Table 4-6, describing the phases of evolution and revolution and associated stages of SME growth:

- Phase 1 is a period of creative evolution with the focus on the making and selling of a product, with informal structures and communication, and the management acts as the market reacts.
- Phase 2 is a period of sustained growth under able and directive leadership with a functional organisational structure, more formal communication and standards embedding controls through accounting and inventory control systems.
- Phase 3 is associated with the delegation of authority and related expansion on all levels of the business.
- Phase 4 results in more coordination and consolidation including control from planning to execution to ensure efficient allocation and management of limited resources.
- Phase 5 is about collaboration including team work, participation and end-to-end collaboration with suppliers and customers.

A number of state transitions were derived from the Evolution in Five Phases of Growth Model [Greiner, 1972]. The criteria used to derive the states were to consider every transition in a row from one phase to another. The content of Phase 1 was not considered as it was interpreted as an initial state and not a transition. The terminology was maintained as far as possible to make traceability easier. The focus was to consider Phase 2 and Phase 3, and the content of Phase 4 and Phase 5 was only considered if the content was clearly explained in the reference [Greiner, 1972]. The states were summarised as presented in Table 4-7. The transition could typically be from one state to another per category. For example, the *management style*, as a category, could change from being *directive* to management through *delegation*.

Table 4-6: Evolution in Five Phases of Growth Model [Greiner, 1972]

Category	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Management Focus	Make & Sell	Efficiency of operations	Expansion of markets	Consolidation of organisation	Problem solving & innovation
Organisation Structure	Informal	Centralised & functional	Decentralised & geographical	Line-staff & product groups	Matrix of teams
Top Management Style	Individualistic & entrepreneurial	Directive	Delegate	Watchdog	Participative
Control System	Market results	Standards & cost centres	Reports & profit centres	Plans & investment centres	Manual goal setting
Management Reward Emphasis	Ownership	Salary & merit increases	Individual bonus	Profit sharing & stock options	Team bonus

Table 4-7: States derived from Evolution in Five Phases of Growth Model [Greiner, 1972]

Category	End State Description after a Transition	Reference to the Phase
Focus	Efficiency of operations Expansion of market	Phase 2 Phase 3
Organisation Structure	Centralised & functional Decentralised geographically Divisions (product groups and support functions)	Phase 2 Phase 3 Phase 4
Management Style	Directive Delegation	Phase 2 Phase 3
Control Systems	Standards Reporting (cost vs profit centres) Planning Goal Setting	Phase 2 Phase 3 Phase 4 Phase 5
Rewards	Remuneration (salary) Performance management (address the concept of bonuses)	Phase 2 Phase 2 to Phase 5

4.2.3.2 Organisational Passage Model

The growth curve as explained by Adizes [1979] in the Organisational Passage Model is illustrated in Figure 4-2.

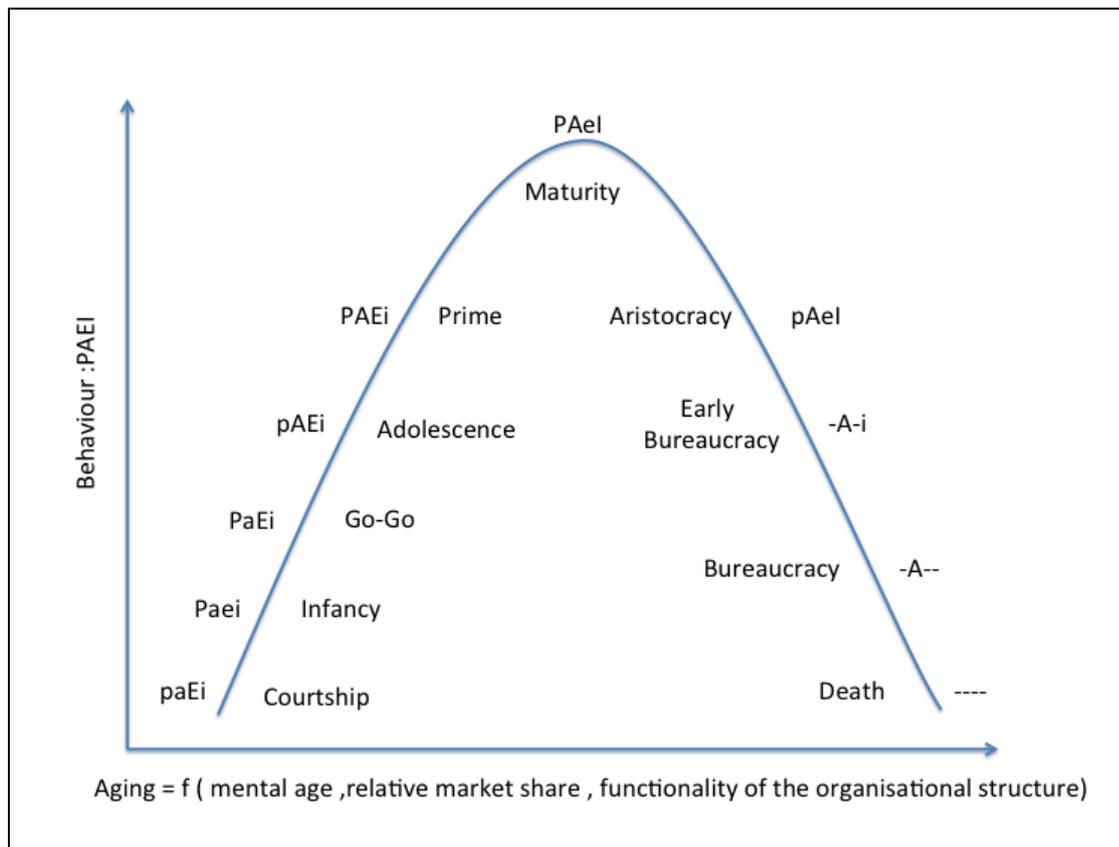


Figure 4-2: Organisational Passages Model [Adizes, 1979, p. 8]

According to the Organisational Passage Model [Adizes, 1979], there are four roles to be performed to ensure efficient and effective management. The combined behaviour of the four roles (PAEI) changes with each organisational passage. The dominant roles per organisational passage are highlighted by the use of capital letters:

- In order to be effective an enterprise need to *produce* indicated by the letter *P* or *p*.
- In order for the enterprise to be efficient, *administration*, indicated by the letter *A* or *a*, is required.
- The *entrepreneurial* role focuses on adaptive changes to align with the external environment and the letter *E* or *e* is used.
- The *Integration* role influences the lifespan of the enterprise and is indicated by the letter *I* or *i*.

For example, during the *courtship passage* the *entrepreneurial role* is dominant in order to ensure that the idea is going to take off, indicated as *paEi* with the entrepreneurial role indicated by a capital letter *E*. During the *infant passage*, the second example, the entrepreneurial role (*E*) is replaced with the dominant role now being *P* (produce) to ensure results, and this is represented by *Paei*. A number of states were derived from the article by Adizes [1979] and these are summarised in Table 4-8. The criteria used to derive the states included the consideration of the states associated with the courtship, infancy, go-go, adolescence, prime and maturity passages. The state description was derived from the description of each

passage in Adizes [1979]. The states were grouped according to the PAEI (produce, administration, entrepreneurial and integration).

Table 4-8: States derived from Organisational Passages Model [Adizes, 1979]

Context	State Description
Produce	<i>Doing</i> for operating capital Results orientation
Administration	Centralised Hardly any policies to workable policies Hardly any systems to workable systems Hardly any procedures to workable procedures Hardly any budget to planning and coordination Stability
Entrepreneurial	Decisions made intuitively Long term (vision) oriented Change oriented New products New markets
Integration	Motivation of subordinates Decentralisation
Other	New structure for decision making New process for decision making New information systems New marketing, product, human resource and finance strategies Budget to support strategies Incentive scheme

4.2.3.3 Stages of Small Business Growth Model

The Stages of Small Business Growth Model [Churchill & Lewis, 1983] describes the following five stages depicted in Figure 4-3:

- Stage I focuses on existence, and the main challenge is to obtain customers and ensure the delivering of products or services.
- Stage II, known as survival, is an indication that it is a working business entity and the challenge is to manage the revenue and expenses to ensure a profit.
- Stage III refers to a profitable business and is described as the success stage, with two options: either to expand or to maintain the status quo.
- Stage IV focuses on growth and financing the growth and is referred to as the take-off stage.
- Stage V is the resource maturity stage and is concerned with the consolidation and controls required to manage the rapid growth, and the challenge is to retain the entrepreneurial spirit.

	Stage I Existence	Stage II Survival	Stage III – D Success - Disengagement	Stage III – G Success -Growth	Stage IV Take -off	Stage V Resource maturity
Management style	Direct supervision	Supervised supervision	Functional	Functional	Divisional	Line and Staff
Organisation	Simple	Simple	Functional Managers	Visionary Managers	Decentralised	Decentralised
Extent of formal systems	Minimal to non-existing	Minimal	Basic	Developing	Maturing	Extensive
Major strategy	Existence	Survival	Maintaining profitable status quo	Get resources for growth	Growth	Return on Investment
Business and owner	Owner is the business	Owner makes decisions	Owner Disengages partially	Owner more active	Owner Dominates	Owner minimal

Figure 4-3: Stages of Small Business Growth Model [Churchill & Lewis, 1983, p. 38]

The Stages of Small Business Growth Model [Churchill & Lewis, 1983] discusses eight management factors, of which four relate to the business and four to the owner of the business. The four management factors related to the business are:

- Financial resources, including cash and borrowing power.
- Personnel resources, with the focus on the management and staff.
- System resources, referring to the information, planning and control systems.
- Business resources in terms of the market, operating model, supplier and customer relationship management and supply-chain management.
- The management factors associated with the owner include the goal of the owner, as well as the operational, managerial and strategic capabilities of the owner.

Different states mentioned as part of the Stages of Small Business Growth Model [Churchill & Lewis, 1983] were derived and are listed in Table 4-9. The context was derived from the names of the first four lanes on the left hand side of Figure 4-3 namely management style, organisation, extent of formal systems, and major strategy. The change in the role of the owner of the business was not included, as the description of the relationship between the owner of the business and the business processes was not

clear. The state description was included in Table 4-9 on the basis of the description of each cell in Churchill and Lewis [1983].

Table 4-9: States Derived from Stages of Small Business Growth Model [Churchill & Lewis, 1983]

Context	State Description
Organisation	Decentralised Divisionalised
Extent of formal systems	Cash forecasting Basic financial, marketing and production systems Budget Operational and strategic planning Stock control Elimination of inefficiencies Standard cost systems
Major strategy	Existence Profit Growth Return on investment
Management style	Direct supervision Supervised supervision Functional delegation Divisional management Management by objectives

4.2.3.4 Integrated Life Cycle Model

Quinn and Cameron [1983] derived a summary model, the Integrated Life Cycle Model, to highlight the consensus regarding the characteristics of the development stages of an enterprise based on a study of nine life cycle models. The summarised model is included in Figure 4-4.

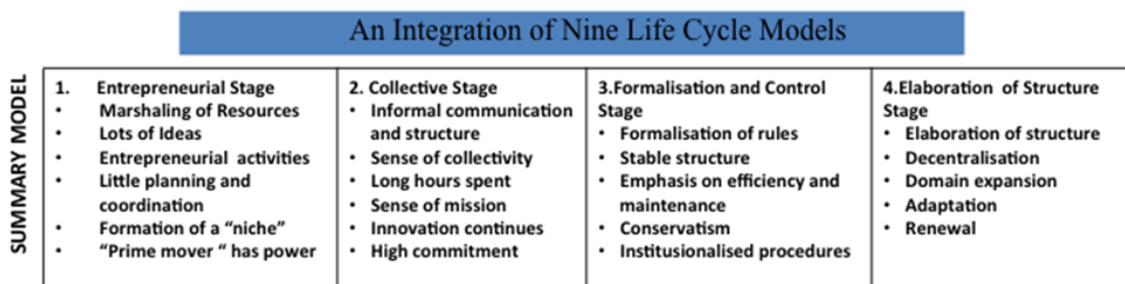


Figure 4-4: Integrated Life Cycle Model [Quinn & Cameron, 1983]

The following nine models were included in the study by Quinn and Cameron [1983]:

- Downs [1967]
- Lippitt and Schmidt [1967]
- Scott [1971]
- Greiner [1972]
- Torbert [1974]
- Lyden [1975]
- Katz and Kahn [1978]
- Adizes [1979]
- Kimberly [1979].

The states were derived from the Integrated Life Cycle Model [Quinn & Cameron, 1983] and are included in Table 4-10. Although integrated into the model by Quinn and Cameron [1983], a more detailed analysis of the states as described by Greiner [1972] and Adizes [1979] is included in sections 4.2.3.1 and 4.2.3.2. In Table 4-10 the context was derived from the headings of columns two to four in Figure 4-4. The state descriptions were derived from the more detailed description in the reference [Quinn & Cameron, 1983] of the summary included in Figure 4-4.

Table 4-10: States Derived from Integrated Life Cycle Model [Quinn & Cameron, 1983]

Context	State Description
Collectivity stage	Group goals Structure
Formalisation and Control	Formalisation of rules Institutionalisation of procedures Stable structure Emphasis on efficiency Goal setting, planning and predictability Coordination, decision making Role clarification Systematic control
Elaboration of Structure stage	Decentralisation Diversification Divisionalisation Management by exception Multi-purpose systems

4.2.3.5 Corporate Life Cycle Model

As part of the Corporate Life Cycle Model, Miller and Friesen [Miller & Friesen, 1984] identified 54 variables related to strategy, situation, structure or decision making style. The 54 variables were analysed and those related to a state are listed in Table 4-11. Variables typically not included were, for example, the size of the enterprise. The context, variable and description were included as described by Miller and Friesen [1984].

Table 4-11: States Derived from Corporate Life Cycle Model [Miller & Friesen, 1984]

Context	Variable	Description
Strategy	Innovations and modifications	<ul style="list-style-type: none"> Major and frequent product/service innovations Small and incremental product/services modifications
	Diversification	<ul style="list-style-type: none"> Diversification by acquisition Diversification by geographical expansion
	Market segmentation	<ul style="list-style-type: none"> Market segmentation with different lines per market Niche strategy between competition
	Supply-chain management	<ul style="list-style-type: none"> Vertical integration upstream or downstream Dominance of distribution channels
Situation	Dynamism	Amount and unpredictability of change in customer preference, technologies and/or competition.
	Hostility	Competition or regulatory restrictions, shortage of resources and/or unfavourable demographic trends
	Heterogeneity	Differences in respect of e.g. competition tactics, customer preference and channels requiring different marketing, production and administrative practices.
Structure	Participative management	Subordinates actively take part in setting objectives and making decisions, so that they have a real influence upon outcomes.
	Centralisation of strategy-making power	Top executives make strategic decisions regarding e.g. acquisitions, diversification and major new product introductions and long term goals.
	Delegation of operating authority	Authority for the administration of day-to-day operation of the business is delegated to lower and middle-level management.
	Organisational differentiation	The degree of difference among organisational divisions in terms of their overall goals, marketing and production methods and decision making styles.
	Sophisticated management information systems	Automated or computerised systems for information dissemination and retrieval.
	Internal communication system	Information reaches decision makers quickly, it is relevant and undistorted and it flows readily in top-down, bottom-up, and lateral directions.

	Performance controls	Accounting systems monitor financial performance of sub-units, departments, products or divisions.
	Controls	Monitoring of the internal trends and incidents relevant to organisational performance. MIS, employee performance appraisals, quality controls, cost and profit centres, budgeting and cost accounting are types of controls.
	Action planning	Includes formal strategic and project planning and review procedures, the use of capital budgeting techniques and market forecasting.
	Scanning	Tracking performed of customer tastes, competition, technological and administrative developments.
Decision making Style	Availability of information for decision making	<ul style="list-style-type: none"> • Proactive decision making • Analysis before decision making • Risk analysis before decision making • Multiplexity of decisions • Futurity of decisions • Adaptiveness of decisions
	Alignment with strategy and integrated decision making	Actions in all areas of the business should be complementary and supportive of a well-coordinated strategy.

4.2.3.6 Model for Small Business Growth

The Model for Small Business Growth [Scott & Bruce, 1987] has a strong correlation with the model by Greiner [1972] as well as the model by Churchill and Lewis [1983]. The Small Business Growth Model [Scott & Bruce, 1987] was discussed in section 3.3.2 (Table 3-2), as part of the analysis to illustrate the criticism of SME growth stage models.

The content of the first column in Table 3-2 was considered as context, as indicated in Table 4-12. The stage of the industry, key issues and product and market research were not considered, as the content was either not strongly associated with transitions building on one topic across the different stages or not easy to relate to business processes. The states were derived from the content as included in Table 3-2 or from the text in the reference [Scott & Bruce, 1987]. The states as derived from the analysis of the Model for Small Business Growth [Scott & Bruce, 1987] are included in Table 4-12.

Table 4-12: States Derived from the Model for Small Business Growth [Scott & Bruce, 1987]

Context	State Description
Organisation structure	<ul style="list-style-type: none"> • Functional centralised • Functional decentralised • Product decentralised
Systems and controls	<ul style="list-style-type: none"> • Personal control and record keeping • Delegated control • Controlled impact of growth • Accounting system • Reports (Revenue and expenses) • Budget • Management by objective
Major source of finance	<ul style="list-style-type: none"> • Credibility with suppliers • Banks • New partners • Retained earnings
Cash generation	<ul style="list-style-type: none"> • Profitability • Reinvest • Dividend policy
Top management role	<ul style="list-style-type: none"> • Direct supervision • Supervised supervision • Delegation and coordination • Decentralisation
Management style	<ul style="list-style-type: none"> • Entrepreneurial • Administrative • Coordination • Professional managers • Watchdog
Product-Market	<ul style="list-style-type: none"> • Obtaining customers • Expanded market and channels of distribution • Economic production • Improving productivity • New product innovation

4.2.3.7 Structural Variable Model

In the study by Hanks et al. [1993] it is proposed that each life cycle stage of an enterprise consists of a unique configuration of variables related to the organisation context and structure. Two sets of variables were used in the study to measure the context and the structure of the enterprise. The contextual variables include measures such as age, size and rate of growth. These contextual variables were not used to derive states related to SME growth. The structural variables include measures of vertical differentiation, structural form, formalisation, decision making, specialisation and centralisation. The content of the Structural Variable Model [Hanks et al., 1993] was used to derive the states as listed in Table 4-13.

Table 4-13: States Derived from Structural Variable Model [Hanks et al., 1993]

Context	State Description
Organisation (Structure)	<ul style="list-style-type: none"> • Simple (Owner/Manager assisted by individuals with varying responsibilities. No divisions or functional departments) • Function (Separate departments or functions (i.e. engineering, marketing, production, personnel)) • Division (Separate groups for similar products, markets or geographic regions)
Formalisation	<ul style="list-style-type: none"> • Formal policies and procedures guide most decisions. • Important communication between departments is documented by memo. • Formal job descriptions are maintained for each position. • The top management team is comprised of specialists from each functional area. • Reporting relationships are formally defined. • Lines of authority are specified in a formal organisation chart. • Rewards and incentives are administered by objective and systematic criteria. • Capital expenditures are planned well in advance. • Plans tend to be formal and written. • Formal operating budgets guide day-to-day decisions.
Top management decision making	<ul style="list-style-type: none"> • Entrepreneurial (One individual makes decisions based on personal judgment) • Professional (Functional specialists make decisions based on expertise and analytical tools)
Specialisation (Responsible person per area)	<ul style="list-style-type: none"> • Public/shareholder relations • Shipping and receiving • Building maintenance • Customer/Product service • Production planning / scheduling • Personnel • Advertising • Legal affairs • Purchasing • Sales • Quality control • Employee training • Market research • Accounting • Inventory control • Industrial engineering • Research and development • Safety / security • Payroll • Finance
Centralisation	<ul style="list-style-type: none"> • Who is the last person whose permission must be obtained before legitimate actions may be taken in the following areas? • Promotion of a direct worker • Addition of a new product /service • Unbudgeted expenditure (\$500-\$1000 in 1994) • Selection of type or brand of new equipment • Dismissal or firing of a direct worker

4.2.3.8 Tipping Point Framework

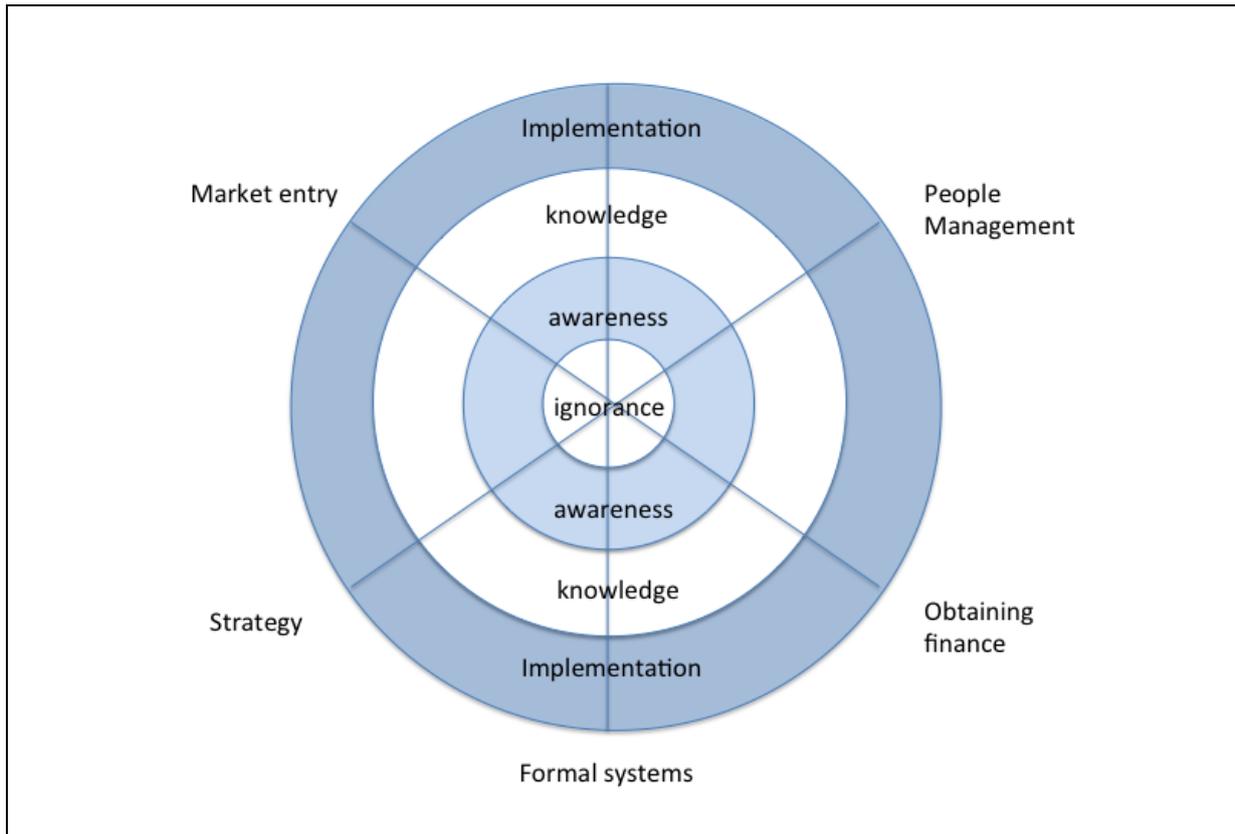


Figure 4-5: Tipping Point Framework for Growth Firm States [Phelps et al., 2007, p. 13]

The Tipping Point Framework [Phelps et al., 2007] incorporates a framework for growth firm states. The Tipping Point Framework differs from the typical SME growth stage models, as it is not based on the assumption that there is a predictable sequence of stages, nor is it based on a predictable sequence of problems to overcome. The term tipping point is defined by [Gladwell, 2000] as a small but precisely targeted push that causes a big difference. Such a tipping point in the context of SMEs may be as a result of growth or environmental changes. In order to continue to grow, the enterprise should resolve the challenge associated with the tipping point. Phelps et al. [2007] refer to six tipping points, namely people management, strategic orientation, formalisation of systems, new market entry, obtaining finance and operational improvement, as depicted in Figure 4-5. The states were derived from the detail included in Phelps et al. [2007] and are included in Table 4-14.

Table 4-14: States Derived from Tipping Point Framework [Phelps et al., 2007]

Context	State Description
People management	<ul style="list-style-type: none"> • Delegation of tasks • Communication • Teamwork • Performance appraisals • Compensation practices • Training practices
Strategic orientation	Positive relation between growth and strategic planning including both the process and content
Formalised systems	<ul style="list-style-type: none"> • Formalisation enables smaller firms to focus limited resources and to concentrate efforts thereby promoting effectiveness, improving morale and increasing innovation. • A need for external advice for growing firms and on processes and their improvement is mentioned.
New market entry	<ul style="list-style-type: none"> • More highly performing enterprises have a stronger awareness of customers and customer needs. • Over 35% of high-tech service enterprises rate marketing and sales skills as a significant or crucial constraint.
Obtaining finance	A business plan with a well-defined commercial strategy, a clear understanding of risk and a strategy for growth is likely to be more successful in attracting funding.
Operational improvement	Awareness and understanding of process capabilities, the implementation of best practices towards efficiency, and the avoidance of error. There are significant barriers to operational improvements via best-practice take-up for reasons of cost, lack of information, lack of motivation or indecision.

4.2.3.9 Organisational Life Cycle Scale

Lester and Parnell [2008] described a survey administered to 107 practising managers to determine the life cycle stages of their organisations. Five dimensions were tested in the study including structure, specialisation/differentiation, information processing, decision making and participation. Lester, Parnell, and Carraher [2003] noted that information processing sophistication is the best predictor of a life cycle stage.

A number of states were derived from the survey by Lester and Parnell [2008]. The questions with the multi-choice answers were reviewed to derive the states. An example of a question with answers to select from is as follows:

Respondents were asked to rate the following statements on a scale of 1 to 5: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree.

Structure:

- Our firm’s organisational structure could be best described as simple.
- Our firm’s structure is development-based with some departments that are *functional*.
- Our structure is *department*/based and *functional*, becoming much more *formal*.
- Structure in our firm is *divisional* or matrix in nature, with highly sophisticated control systems.
- Our structure is *centralised* with few control systems.

For this example the key words in italics were used to derive the states as included in Table 4-15.

Table 4-15: States Derived from Organisational Life Cycle Scale [Lester & Parnell, 2008]

Context	State Description
Structure	<ul style="list-style-type: none"> • Centralised • Functional informal • Functional formal with departments • Divisional
Specialisation/ differentiation	<ul style="list-style-type: none"> • Specialisation (e.g. accountants and engineers) • Differentiation
Information processing	<ul style="list-style-type: none"> • Monitoring performance • Facilitating communication • Necessary for efficient production • Necessary for earning profits • Used for coordination of diverse activities • Used to better serve markets
Decision making	<ul style="list-style-type: none"> • Centralised • Decentralised • Participative
Participation	<ul style="list-style-type: none"> • Decisions made intuitively by one person • Decisions made by group of managers utilising some systematic analysis

4.2.3.10 Stage Categories Model

Levie and Lichtenstein [2010] carried out an analysis of 104 different SME growth stage models as an approach to understanding entrepreneurial business growth. Included, as part of the study, was the identification of the most common attributes of a stage, for example the extent of formal systems, as well as the common categories of attributes. The common categories included the characteristics of management, organisational structure, strategy and problems, as well as process and product characteristics.

In Table 4-16 the content of the context field was derived from the common categories and the states were derived from the common attributes of a stage as discussed by Levie and Lichtenstein [2010].

Table 4-16: States Derived from Stage Categories Model [Levie & Lichtenstein, 2010]

Context	State Description
Management characteristics	<ul style="list-style-type: none"> • Nature of top management • Managerial style • Owner involvement • Degree of centralisation of decision making • Number of members of top management • Risks
Structure	<ul style="list-style-type: none"> • Organisational structure • Complexity • Formality of communication systems
Strategy	<ul style="list-style-type: none"> • Primary focus of the organisation • Concept development • Market factors • Geography
Systems	<ul style="list-style-type: none"> • Extent of formal systems • Extent of bureaucracy in management control system
Process characteristics	<ul style="list-style-type: none"> • Profitability
Product characteristics	<ul style="list-style-type: none"> • Product development and initial marketing • Diversity • Innovation
Staff	<ul style="list-style-type: none"> • Culture

4.2.4 5S Classification Framework for SME Growth State Transitions

The objective of Research Sub-Cycle 1 was to determine whether it is possible to derive states as a result of a transition from the SME growth stage models. The first step towards the definition of the 5S Classification Framework was the consolidation of all the states included in Table 4-7 to Table 4-16. For each state included in Table 4-7 to Table 4-16, a card was created and cards with similar content were consolidated into a single state, as indicated in the first column of Table 4-18 to Table 4-25.

Based on the principle that seven plus/minus two elements are easier to process and to remember, the objective was to group the identified states into a framework with a maximum of nine elements. The ten SME growth stage models, discussed in sections 4.2.3.1 to 4.2.3.10, did not use the same classification to group the different states. A prerequisite for the consolidation of the states, as identified in sections 4.2.3.1 to 4.2.3.10, was therefore the development of a classification framework to group the different states. Through synthesis the content of the context column in Table 4-7 to Table 4-16, as summarised in the fourth column of Table 4-17, was grouped as indicated in the first two columns of Table 4-17,

resulting in the *5S SME Growth State Classification Framework*. The 5S SME Growth State Classification includes a class as well as sub-classes. Five classes were derived, each starting with the letter *S*, namely strategy, structure, systems, style of management and staff. As a way of verifying the classification, it was compared with the SME growth stage models. The end result of the 5S SME Growth State Classification Framework was similar to the categories of attributes as described by Levie and Lichtenstein [2010].

Table 4-17: The 5S Growth State Classification Framework

Class of States	Sub-classes of States	Table Cross Reference	SME Growth Stage Model Terminology
Strategy	<ul style="list-style-type: none"> • Product leadership • Operational excellence • Market share • Customer focus 	Table 4-7 Table 4-8 Table 4-9 Table 4-11 Table 4-12 Table 4-14 Table 4-16	Focus Produce Major strategy <ul style="list-style-type: none"> • Strategy • Situation Product-market <ul style="list-style-type: none"> • Strategic orientation • New market entry <ul style="list-style-type: none"> • Strategy • Product characteristics • Process characteristics
Structure		Table 4-7 Table 4-8 Table 4-9 Table 4-10 Table 4-11 Table 4-12 Table 4-13 Table 4-15 Table 4-16	Organisation structure Integration Organisation Elaboration of structure stage Structure Organisation structure Organisation (Structure) Structure Structure
Systems	Process Information Systems Controls Planning	Table 4-7 Table 4-8 Table 4-9 Table 4-10 Table 4-12 Table 4-13 Table 4-14 Table 4-15 Table 4-16	Control systems Administration Extent of formal systems Formalisation of control Systems and controls Major source of finance Cash generation Formalisation and specialisation Formalised systems Obtaining finance Operational improvement Information processing Systems

Style of Management	Delegation of Authority Decision making Style	Table 4-7	Management style
		Table 4-8	Entrepreneurial
		Table 4-9	Management style
		Table 4-10	Collectivity stage
		Table 4-11	Decision making style
		Table 4-12	<ul style="list-style-type: none"> • Top management role • Management style
		Table 4-13	<ul style="list-style-type: none"> • Top management decision making • Centralisation
		Table 4-15	<ul style="list-style-type: none"> • Decision making • Participation • Specialisation and differentiation
Table 4-16	Management characteristics		
Staff		Table 4-7	Rewards
		Table 4-8	Integration
		Table 4-14	People Management
		Table 4-16	Staff

4.2.5 Consolidation of the SME Growth State Transitions into Proposed 5S SME Growth State Transition Model

The consolidated list of states, based on states defined in Table 4-7 to Table 4-16, was mapped to the 5S SME Growth State Classification Framework, as presented in Table 4-18 to Table 4-25. The content of these tables was determined through synthesis. With the context of Table 4-7 to Table 4-16, in the fourth column of Table 4-17, it was possible to map the states to the 5S SME Growth State Classification Framework. The consolidation was based on the classes and sub-classes as defined by the 5S State Growth Classification Framework.

This final deliverable of Research Sub-Cycle 1 is known as the *5S SME Growth State Transition Model*. The 5S SME Growth State Transition Model is structured in such a way that it can be used as an assessment sheet, allowing the SME manager to indicate the current state as well as the future state, or whether the statement is not applicable to the specific SME. The future state column indicates the list of transitions to be managed for the specific SME. If the current state is also the future state, both cells are selected.

4.2.5.1 SME Assessment of the Strategy as Differentiator in the Market

The consolidation of the states associated with the Strategy class is grouped according to the following four strategies in Table 4-18: product leadership, operational excellence, marketing or distribution channels and customer focus.

Table 4-18: SME Assessment of the Strategy as Differentiator in the Market

SME Assessment of the Strategy as Differentiator in the Market (S1) Indicate for S1.1, S1.2, S1.3 and/or S1.4 whether it is currently a key differentiator in the market for the specific SME, whether it is a future key differentiator or whether it is not applicable to the SME. Indicate for those key differentiator(s) whether the state is currently applicable to the SME, whether it is relevant that the SME made a transition to get to the state or whether the state is not applicable to the SME.	Current State	Future State	Not applicable
S1.1 Product leadership as differentiator in the market The SME is offering a unique or superior product to the market. It is important for the SME to gain and/or maintain the product leadership in the market.			
S1.1.1 Diversification by acquisition is a strategy to gain and/or maintain product leadership in the market.			
S1.1.2 Major and frequent product/service innovations is a strategy to gain and/or maintain product leadership in the market through new products.			
S1.1.3 Small and incremental product/service modifications is a strategy to gain and/or maintain product leadership in the market.			
S1.2 Operational excellence as differentiator in the market The SME is differentiated by operational excellence in the market. The differentiator may be based on price, reliability, flexibility and/or responsiveness. The reliability is referring to quality and/or on time delivery. It is important for the SME to gain and/or maintain the competitive advantage in the market based on operational excellence.			
S1.2.1 Managing the supply-chain upstream and/or downstream is a strategy to gain and/or maintain a competitive advantage in the market. Working closely with suppliers and the distribution network enables an integrated end-to-end service as part of operational excellence.			
S1.2.2 Identification of a niche product/service to close a gap in the end-to-end supply-chain delivered is a strategy to gain and/or maintain a competitive advantage in the market.			
S1.2.3 Economic production is a strategy to gain/or maintain a competitive advantage in the market. The focus is on efficiency, improving the production/service delivery process, to eliminate rework and to cut cost.			
S1.3 Marketing / distribution channels as differentiator in the market The strategy is to establish the brand in the market and/or to create a network of distribution channels for the SME to gain and/or maintain market share.			
S1.3.1 Expansion of market and distribution channels is a strategy to ensure dominance of distribution channels and the associated competitive advantage in the market.			
S1.3.2 Geographical expansion is a strategy towards diversification and getting entry to new markets.			
S1.3.3 Market segmentation with different lines of products/services per market is a strategy for the SME to gain and/or maintain a competitive advantage in the market.			

S1.4 Customer focus as differentiator in the market			
The SME created and maintain strong customer relationships and the strategy is to ensure that the SME is the preferred product or service provider of the customer.			
S1.4.1 Customer preference requires diversification of marketing, products and administrative practices, Scanning customer preference and acting on it is a strategy to gain and maintain the competitive advantage in the market.			
S1.4.2 High performance enterprises have a stronger awareness of customers and customer needs and it is a strategy of the SME to know and obtain customers to become/remain a high performance enterprise.			

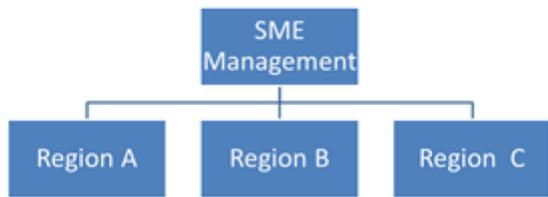
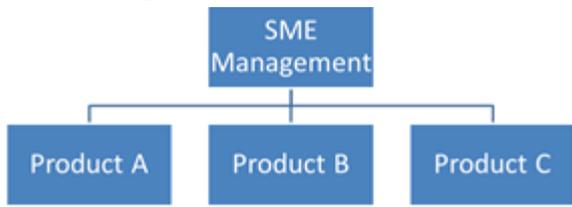
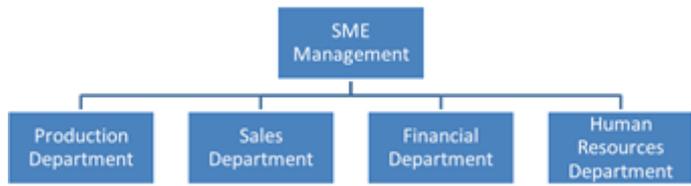
4.2.5.2 SME Assessment of Structure

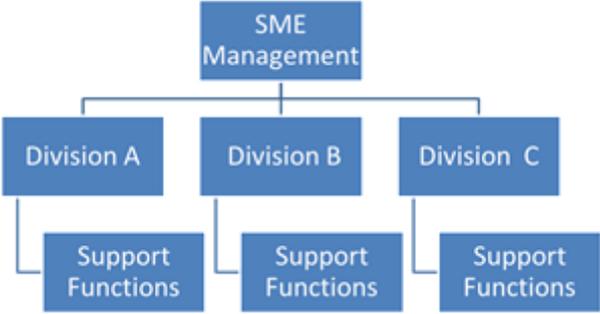
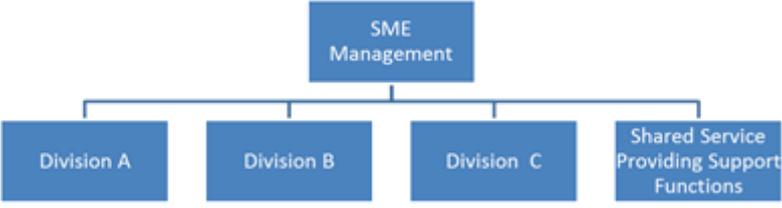
SME growth results in a transition from an informal structure to a more formal structure, with a number of options discussed in Table 4-19.

Table 4-19: SME Assessment of Structure

SME Assessment of the Structure (S2) Indicate per structure type whether it is the current state, potential future state or not applicable to the SME. It is possible to select more than one option for example decentralised geographically (S2.4) as well as shared services (S2.6).	Current State	Future State	Not applicable
<p>S2.1 Simple informal structure</p> <p>The owner or manager is assisted by individuals with varying responsibilities. There are no divisions or functional departments. An informal structure is built around the owner manager and it is typical of small companies in the early stages of their development. The entrepreneur often has specialist knowledge of the product or service.</p> <div style="text-align: center;"> <pre> graph TD Entrepreneur[Entrepreneur] --- Employees[Employees] </pre> </div>			

<p>S2.2 Functional structure</p> <p>There are separate departments or functions (i.e. engineering, marketing, production, personnel). It is most appropriate to small companies which have few products and locations and which exist in a relatively stable environment.</p>			
<p>S2.3 Product based departments</p> <p>Structuring by product involves organising the business into departments, each of which focuses on a different product.</p>			
<p>S2.4 Customer based departments</p> <p>A business may be divided by the type of customer (e.g. public sector or private sector customers).</p>			
<p>S2.5 Decentralised by geographical area</p> <p>Some businesses organise their activity according to geographical area. This is common in large multinational companies but it might also be appropriate for medium-sized businesses, for example a group of taxi firms, a small retail chain or a fast-food chain with several branches. Organising by area means each site can operate according to local demand but still be directed by business policy. Sometimes logistics relating to shipping, resources and staff make geographical structure the best choice.</p>			



<p>S2.6 Divisional structure</p> <p>There are separate groups for similar products, markets or geographic regions. There is a degree of difference among organisational divisions in terms of their overall goals, marketing and production methods and decision making styles. They are headed by managers who are responsible for their own resources. Divisions are likely to be seen as profit centres and may be seen as strategic business units for planning and control purposes.</p> 			
<p>S2.7 Shared services structure</p> <p>Shared services is the provision of a service by one part of an organisation or group where that service had previously been found in more than one part of the organisation or group. Thus the funding and resourcing of the service is shared and the providing department/division effectively becomes an internal service provider.</p> 			

4.2.5.3 SME Assessment of the SME as a System

Within the context of this section a system is referring to a set of distinct parts that interact to form a complex whole. The four distinct parts discussed, as part of the systems (S3) are the processes, enabling information systems, controls and specifically the concept of planning as part of the SME as system. These assessments are included in Table 4-20 to Table 4-23.

Table 4-20: SME Assessment of the Processes as part of the SME as System

<p>SME Assessment of the Processes as part of the SME as System (S3.1)</p> <p>Indicate per state (S3.1.1 to S3.1.5) whether it is the current state, potential future state or not applicable to the SME.</p>	<p>Current State</p>	<p>Future State</p>	<p>Not applicable</p>
<p>S3.1 Processes</p> <p>A business process describes the work that is being done in a business. As the SME grows it is important to define, standardise, align and optimise the processes overtime. In order to identify opportunities for optimisation the initial step is to measure the performance of the processes.</p>			
<p>S3.1.1 The record keeping processes to keep record of all transactions as well as all communications are defined and implemented.</p>			
<p>S3.1.2 The way of work to eliminate inefficiencies and to improve productivity is reviewed. Redundant activities are identified and removed. The level of standardisation of the process is monitored with the objective to reduce rework over time. Note: Efficiency is referring to how work is being done.</p>			
<p>S3.1.3 The way of work is reviewed to ensure all processes are effective, i.e. that what is being done and the outcome of a process is adding value. Note: Ensure that you do not increase the efficiency of a process that is not effective.</p>			
<p>S3.1.4 Processes to consider for specialisation are identified. At the early stages of the SME the owner(s) is filling all the roles. As the SME grows specialised processes are allocated to specialists or outsourced to a third party. The following are examples of processes to be considered for specialisation: public/shareholders relations, shipping and receiving, building maintenance, customer/product service, production planning/scheduling, personnel, advertising, legal affairs, purchasing, sales, quality control, employee training, market research, accounting, inventory control, industrial engineering, research and development, safety/security, payroll, finance.</p>			
<p>S3.1.5 The performance of a business process is monitored, starting with the selection of a key performance indicator (KPI) and measurement of this one KPI. An example is to measure on time delivery or another example is to monitor the number of rework requests as a result of quality deviations. KPIs are often related to time, cost or quality.</p>			

Table 4-21: SME Assessment of the Information Systems as part of the SME as System

SME Assessment of the Information Systems as part of the SME as System (S3.2) Indicate per state (S3.2.1 to S3.2.9) whether it is the current state, potential future state or not applicable to the SME.	Current State	Future State	Not applicable
S3.2 Information Systems Information systems are referring to technology that is enabling the business process. Examples are spreadsheets, cloud based information systems or even mobile applications.			
S3.2.1 Reporting is enabled by an information system to track revenue and expenses on a monthly basis.			
S3.2.2 A financial system is implemented to automate the financial transactions including invoicing and management of expenses together with the management of creditors and debtors.			
S3.2.3 A marketing system is implemented to manage customer information and lead management.			
S3.2.4 A production system or professional services system is implemented with a time sheet system playing an important role in professional services and the management of raw material and batches in production.			
S3.2.5 A human resource management system is implemented to manage human resources, payroll and compliance with labour legislation.			
S3.2.6 A logistics or distribution system is implemented to manage delivery of products.			
S3.2.7 A management information system is implemented for information dissemination and retrieval. Relevant and undistorted information reach decision makers on time.			
S3.2.8 Coordination of diverse activities is enabled through inter alia collaboration systems, document management or enterprise content management and workflow.			
S3.2.9 Information systems is used to better serve markets. Examples are online trading, tracking of orders, social media for marketing and process execution (using workflow, business rule engine and an integration platform).			

Table 4-22: SME Assessment of Controls as part of the SME as System

SME Assessment of the Controls as part of the SME as System (S3.3) Indicate per state (S3.3.1 to S3.3.5) whether it is the current state, potential future state or not applicable to the SME.	Current State	Future State	Not applicable
S3.3 Controls Controls are defined and implemented in order to limit or rule actions or behaviour. Controls are embedded in the processes and to implement controls it is important to measure compliance to these controls.			
S3.3.1 Rules (policies, procedures and standards) are formalised and institutionalised.. SME growth is often associated with an increase in staff, and it is important to set the rules and apply the rules consistently to all staff.			
S3.3.2 Operational controls such as the control of stock are implemented.			
S3.3.3 Financial controls including the performance of sub-units, departments, divisions and products are monitored.			
S3.3.4 The compliance to regulations and quality standards is monitored.			
S3.3.5 The SME is always ready for a due diligence appraisal whether it is to support a business plan to attract funding, whether it is undertaken by a prospective shareholder or whether it is part of the evaluation of the SME as a supplier on a large contract. A due diligence appraisal establishes the assets and liabilities of a company and evaluate its commercial potential. Well-established policies, procedures and rules as well as operational and financial controls contribute towards a positive outcome of a due diligence appraisal.			

Table 4-23: SME Assessment of Planning as part of the SME as System

SME Assessment of Planning as part of the SME as System (S3.4) Indicate per state (S3.4.1 to S3.4.7) whether it is the current state, potential future state or not applicable to the SME.	Current State	Future State	Not applicable
S3.4 Planning Planning is the process of predicting how the future should look like to achieve effectiveness and efficiency in a company. Planning follows a specific process. In order to manage the performance of a business it is important to monitor the progress against a plan such as the financial budget.			
S3.4.1 Cash is managed to make provision for the investments required to enable growth. Cash forecasting is based on the financial plan (the budget) as well as the actual financial results.			
S3.4.2 The processes for planning, scheduling and coordination are defined and implemented. The allocation of resources to complete specific work is known as scheduling. Coordination is the synchronisation and integration of activities, responsibilities, and command and control structures to ensure efficient completion of work.			

S3.4.3 A long-term vision is in place to ensure that the tactical and operational plans are driven by the strategic vision.			
S3.4.4 Both operational and strategic plans are defined for marketing, production, human resources and finance.			
S3.4.5 An operating budget to support strategies is in place and is used to manage operations.			
S3.4.6 Capital expenditure is planned well in advance.			
S3.4.7 A marketing forecast is available.			

4.2.5.4 SME Assessment of the Style of Management

The style of management matures as the SME grows. Within the 5S State Transition Framework the Style of Management is identified by S4. The two concepts being discussed as part of the SME assessment is the delegation of authority and the decision making style. The sets of assessment statements are included in Table 4-24.

Table 4-24: SME Assessment of Style of Management

SME Assessment of Style of Management Indicate per state (S4.1.1 to S4.2.3) whether it is the current state, potential future state or not applicable to the SME.	Current State	Future State	Not applicable
S4.1 Delegation of Authority			
Delegation of authority in the context of SME growth means that the SME manager (often then owner) is entrusting someone else to do parts of the job on the SME manager. The state transitions associated with the delegation of authority are grouped as level of delegation, management of the delegation of authority and the authority associated with the delegation.			
Note: Level of Delegation			
S4.1.1 The SME manager is supervising the employees directly.			
S4.1.2 Supervisors are responsible for the supervision of employees. According to Zheltoukhova and Suckley [2014] only 12% of employees of small enterprises (10-49 employees) report to a manager with a span of control larger than ten.			
S4.1.3 A functional structure results in delegation of authority to functional managers.			
S4.1.4 A divisional structure results in delegation of authority to divisional managers.			
Note: Management of the Delegation of Authority			
S4.1.5 Delegation of authority is managed by setting objectives for managers and measure performance against the objectives.			
S4.1.6 Delegation of authority is managed by putting a process in place to escalate exceptions to the SME manager.			

Note: Authority associated with the Delegation			
S4.1.7 Delegation of authority includes authority to promote direct workers, dismiss direct workers, add new products or services, select new equipment and approve unbudgeted expenditure.			
S4.1.8 Delegation of day-to-day operating authority.			
S4.1.9 Centralisation of strategy-making power (acquisitions, diversification and vision).			
S4.1.10 Formal definition of reporting relationships. Lines of authority specified in organisation chart.			
S4.2 Decision making Style			
Decision making style is providing insight on how a manager is making decisions.			
S4.2.1 Intuitive decision making is replaced with an understanding of the decision making process to make more informed decision.			
S4.2.2 Specialists are appointed to make decisions on the basis of expertise and analysis of information			
S4.2.3 Participation of employees in the decision making process is promoted with an associated increase in the level of motivation of employees.			

4.2.5.5 SME Assessment of the Staff Component

Within the 5S State Transition Framework the Staff Component is identified by S5. This assessment of the Staff Component is included in Table 4-25.

Table 4-25: SME Assessment of the States Associated with the Staff Component

SME Assessment of the Staff Component (S5) Indicate per state (S5.1 to S5.6) whether it is the current state, potential future state or not applicable to the SME.	Current State	Future State	Not applicable
S5.1 An incentive scheme is included as part of the remuneration package.			
S5.2 A performance management process is defined and implemented.			
S5.3 Job descriptions are based on the processes and clear role clarification is ensured.			
S5.4 A training and development programme is implemented for employees.			
S5.5 Communication and change management are in place.			
S5.6 The culture and values of the SME are protected as the SME grows.			

4.3 Demonstration of the Applicability of the 5S SME State Transition Model

The applicability of the proposed 5S SME Growth State Transition Model as presented in section 4.2.5 was illustrated using a study to demonstrate that the identified growth state transitions are indeed applicable to SMEs.

The study was based on the records of company SME X. The states were mapped to four major periods in the growth of company SME X. The growth was defined by the number of staff and contractors in that specific period. These periods were summarised as:

- 2002-2005: This period was associated with early establishment, initially with four founders and ending with seven permanent staff members and five contractors.
- 2006-2009: This period was related to partnering with a BEE partner as well as a product vendor. The staff numbers grew to fifteen permanent staff members, and the number of contractors varied between five and ten.
- 2010-2013: This was a period of growth with a well-defined business model, restructuring of the shareholders model, and a maximum of just over fifty staff members and close to twenty contractors.
- 2014: This year was a period of transformation and diversification in order to adapt to market conditions. The number of staff members declined and the use of contractors was minimal. The profile of the typical staff member changed in order to support the diversification drive.

The demonstration was based on mapping the history of company SME X to the relevant growth state transitions as included in the 5S-SME Growth State Transition Model in Table 4-26. The following conventions were used to indicate aspects to consider:

- The state transition cell was highlighted in **yellow** if the growth state transition was not applicable to Company SME X. Example: Company SME X was active in the professional services industry and therefore the state *SI.1.4 Supply-chain management upstream and downstream* was not applicable to Company SME X.
- Multiple occurrences of a transition were highlighted in **green** if there were multiple occurrences of the specific type of growth state transition over the years. These multiple unique growth state transitions impacted on management's decision making. Example: The first partnership with a product vendor to address market segmentation was established in the 2006-2009 period, but various other partnerships were established from 2006-2014. As a result, there were various transitions to state *SI.2.3 Market segmentation with different lines per market*, for example, during the period 2006-2014.
- The third column is highlighted in **blue** if the transition initially had a major impact on management decision making. After the first occurrence the transition was embedded as part of operations. For example, focusing on the preferred administrative practices with the transition '*SI.3.1 Customer preference requires diversification of marketing, products and*

administrative practices’ was embedded as part of operations during the 2006-2009 period. With every new client the preferred administrative practice was confirmed in subsequent periods.

Table 4-26: SME Growth State Transition Model Demonstration – Company SME X

State Transition Identifier	Multiple Unique Transitions	Cyclical Review	2002-2005	2006-2009	2009-2013	2014	Comments
S1.1 Strategy: Product leadership as differentiator in the market							
S1.1.1				x			Diversification by acquisition (S1.1.1): A variation of this type of transition occurred, resulting in bringing on-board a value-adding reseller of a product as shareholder.
S1.1.2						x	Major and frequent product/service innovations (S1.1.2): Company SME X was challenged by this transition due to a change in market conditions.
S1.1.3				x	x	x	Small and incremental product/service modifications (S1.1.3): Company SME X does not have an appetite for high risk and tends to grow organically. Diversification is driven by incremental product and service modifications. An example is the definition and marketing of application life cycle management as a solution.
S1.2 Strategy: Operational excellence as differentiator in the market							
S1.2.1							Supply-chain management upstream and downstream (S1.2.1): Not applicable.
S1.2.2						x	Niche strategy between competition (S1.2.2): Provide a niche service by partnering with larger software implementation partners. With the change in the market condition the transformations focus on the identification of new niche opportunities.
S1.2.3						x	Economic production (S1.2.3): The time and material-based model was economically viable from the start. The transition to product diversification involves this transition.

S1.3 Strategy: Marketing / Distribution							
S1.3.1						x	Expansion of market and channels of distribution (S1.3.1): Expansion of market and channels of distribution is a high-priority transition with the change in market conditions.
S1.3.2				x			Diversification by geographical expansion (S1.3.2): Establish regional office in a second location.
S1.3.3				x	x	x	Market segmentation with different lines per market (S1.3.3): Partner with different product lines to increase number of market segments to be targeted.
S1.4 Strategy: Customer Focus							
S1.4.1				x			Customer preference requires diversification of marketing, products and administrative practices (S1.4.1): For example, timesheet sign-off and invoicing are customised per client preference.
S1.4.2						x	High performance enterprises have a stronger awareness of customers and customer needs (S1.4.2): Packaging the SME X competencies as a product for customer needs is a challenge.
S2 Structure							
Note			x				Simple informal structure: This is a valid state. For company SME X it was the initial state.
S2.1							Functional (S2.1): The corporate office still functions as one centralised group. No functional managers for human resources, finance or procurement.
S2.2				x			Decentralised geographically (S2.2): Regional office
S2.3						x	Division per product group (S2.3): Costing model different per product/service group and resources allocated per product/service.
S2.4				x			Shared services structure (S2.4): The support office is functioning as shared service for the regions.

S3 SME as System							
S3.1 Systems: Process							
S3.1.1			x				Record keeping (S3.1.1): Record keeping improved over the years. Records of communication to clients as well as staff were formally defined with both a physical filing system and the implementation of a server with backup procedures.
S3.1.2				x	x	x	Eliminate inefficiencies and improve productivity. (Implementation of best practices towards efficiency and the avoidance of error) (S3.1.2) Example: moving from hourly-based salaries to fixed salaries.
S3.1.3					x	x	Promote effectiveness (S3.1.3): Example: the definition of the business model.
S3.1.4				x			Specialisation (Responsible person for public/shareholders relations, shipping and receiving, building maintenance, customer/product service, production planning/scheduling, personnel, advertising, legal affairs, purchasing, sales, quality control, employee training, market research, accounting, inventory control, industrial engineering, research and development, safety/security, payroll, finance) (S3.1.4): In 2006-2009 the public relations and legal advisory services were outsourced.
S3.1.5					x	x	Monitoring performance (S3.1.5): Major initiative as part of the definition of the business model.
S3.2 Systems: Information Systems							
S3.2.1			x				Reporting – Revenue and expenses (S3.2.1): Based on business model since 2010.
S3.2.2				x			Financial systems (S3.2.2): Implementation of standalone system.
S3.2.3						x	Marketing systems (S3.2.3): Cloud based system implemented but not effective and efficient
S3.2.4				x			Production systems (S3.2.4): Implementation of cloud-based system to manage timesheets. (Production for professional services is the management of the time)

S3.2.5				x			Human resources systems (S3.2.5): Implementation of cloud-based system to manage timesheets.
S3.2.6							Logistics systems (S3.2.6): Not applicable
S3.2.7					x		Management information systems for information dissemination and retrieval (S3.2.7): Cloud-based professional services solution implemented.
S3.2.8						x	Coordination of diverse activities (S3.2.8): The combination of the cloud-based professional services and the pipeline management application provide a more end-to-end view so as to coordinate activities.
S3.2.9						x	Used to better serve markets (S3.2.9): Transition to consider with the change in the market conditions.
S3.3 Systems: Controls							
S3.3.1				x			Formalisation of rules (Policies and standards) (S3.3.1): Initial implementation of HR policies and procedures in 2006-2009.
S3.3.2				x			Implementation of operational controls (S3.3.2): Major transition to implement controls to ensure all work is being invoiced through management of timesheets.
S3.3.3					x		Monitor financial performance of sub-units, departments, divisions and products (S3.3.3): Major leap as part of the business model definition with target sets per pipeline.
S3.3.4					x		Monitor regulatory and quality compliance (S3.3.4): More intense management of BEE compliance when revenue exceeds the threshold for small companies. Quality management system implemented to be registered as a SETA training service provider.
S3.3.5					x		Due diligence and business plan to attract funding (S3.3.5): As part of the restructuring of the shareholding, a due diligence and business plan to attract an investor was compiled.
S3.4 Systems : Planning							
S3.4.1					x		Cash forecasting (S3.4.1): Management accounts redesigned in 2010.
S3.4.2					x		Planning, scheduling and coordination (S3.4.2): Structured implementation since 2010.

S3.4.3				x	x	x	Long-term vision (S3.4.3): First transition in 2006 with a clear exit strategy as motivation for bringing partners on-board as shareholders. There was a major change in 2010. The 2014 transformation was based on a long-term vision.
S3.4.4					x		Operational and strategic planning (marketing, production, human resources and finance) (S3.4.4): Done in a more structured way since 2010.
S3.4.5					x		Operating budget to support strategies (S3.4.5): Part of the business model design and implementation.
S3.4.6						x	Capital expenditures are planned well in advance (S3.4.6): Capital expenditure not applicable till 2014. Transformation starting in 2014 may require capital expenditure.
S3.4.7						x	Market forecasting (S3.4.7): Generation of demand required.
S4 Style of Management							
S4.1 Delegation of Authority							
Note: Level of delegation							
S4.1.1			x				Direct supervision (S4.1.1): Initial state of company SME X.
S4.1.2					x		Supervised supervision (S4.1.2): Introduction of managers per pipeline.
S4.1.3							Functional delegation (S4.1.3): Not applicable
S4.1.4					x		Divisional structure (S4.1.4) Support service similar to shared service to regions.
Note: Management of the delegation of authority							
S4.1.5					x		Management by objectives (S4.1.5): Objective stated per pipeline in the annual business plan, including a comprehensive budget.
S4.1.6					x		Management by exceptions (S4.1.6): Reporting allows management of exceptions.
Note: Authority associated with the delegation							
S4.1.7							Delegation of authority (promotion of direct worker, dismissal of direct worker, addition of new product/service, selection of new equipment, unbudgeted expenditure (S4.1.7): No transition from 2002-2014. Listed decisions still centralised, based on the delegation of authority of the shareholders agreement.

S4.1.8					x		Delegation of day-to-day operating authority (S4.1.8): Various attempts to transition to corporate office manager not successful.
S4.1.9					x		Reporting relationships are formally defined (S4.1.9): Major transition as part of the business model definition.
S4.1.10			x				Strategy making power is centralised (S4.1.10). Governed by the shareholders agreement.
S4.2 Decision making Style							
S4.2.1			x				Intuitive decision making (S4.2.1): Initial state of company SME X.
S4.2.2					x		Specialists make decisions based on expertise and analysis of information (S4.2.2): Business model defines the parameters of decision making.
S4.2.3						x	Participation as motivation (S4.2.3): Focus on marketing and diversification to increase participation.
S5 Staff							
S5.1					x		Incentive scheme (S5.1): Defined for senior management based on contribution to overall profit.
S5.2				x			Performance management (S5.2): Advance from informal system to formal performance management system.
S5.3				x			Role clarification (S5.3): As part of the definition of job descriptions, it was important to define the roles and responsibilities of the different positions in the company. As part of growth it was important to delegate responsibilities and to define the controls needed to manage the different roles in the company. For the consulting roles, this was important as part of the grading of the different levels and for performance contracts. The role of consultant was defined in such a way that it allows for the flexibility of a project role.
S5.4				x			Training and development (S5.4): Development plans related to job descriptions and performance management systems.
S5.5				x			Communication and change management (S5.5) are in place.
S5.6						x	The culture and values of the SME are protected as the SME grows (S5.6).

4.4 Observations based on the Demonstration of the 5S SME Growth State Transition Model

The demonstration of the 5S SME Growth State Transition Model as applied to the history of company SME X highlighted the following observations:

- The 5S SME Growth State Transition Model would mature as it is used with the addition, deletion and consolidation of growth state transitions.
- Some of the growth state transitions may be industry-specific.
- Application of the 5S SME Growth State Transition Model could result in various outcomes, such as not being applicable, single occurrence, multiple occurrences and repetitive occurrences.
- The important awareness was that the 5S SME Growth State Transition Model successfully eliminated the constraint of stages associated with SME growth stage models.

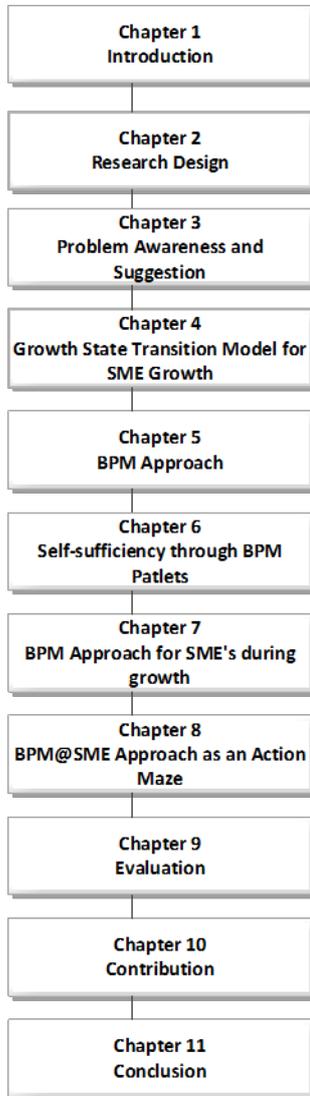
4.5 Conclusion

The research objective of Chapter 4 was to develop an SME growth state transition model to address the criticism regarding the sequential nature of the existing SME growth stage models. The development of the *5S Growth State Transition Model* included the identification of SME growth state transitions as defined in existing SME growth stage models, the definition of a *5S SME Growth State Classification Framework* to use for the classification of the growth state transitions and the consolidation of the identified growth state transitions by mapping them to the 5S SME Growth State Classification Framework, resulting in the proposed 5S SME Growth State Transition Model. A study based on information from Company SME X demonstrated that the 5S Growth State Transition Model is a fair representation of the SME growth state transitions.

The next challenge is to develop a BPM Approach supportive of self-sufficiency, which can lead as input to the development of a BPM@SME Approach to help SME managers to benefit from BPM as a management approach. In Chapter 5 the development of a BPM Approach is presented.

Chapter 5 : BPM Approach

Chapter 5 Outline



- 5.1 Introduction
- 5.2 Analogy with the 'Business Model Generation' Publication
 - 5.2.1 Principles and Components of the 'Business Model Generation' Publication
 - 5.2.2 Building Blocks of the Business Model Canvas as Framework
 - 5.2.3 Analogy between 'Business Model Generation' and the BPM Canvas Framework and the WIN Approach
- 5.3 Proposed BPM Canvas Framework
 - 5.3.1 BPM Canvas Worksheet - Layer 1
 - 5.3.1.1 'Why' Grouping - Business Model Building Block
 - 5.3.1.2 'Why' Grouping - BPM Business Drivers Building Block
 - 5.3.1.3 'Why' Grouping - BPM Value Proposition Building Block
 - 5.3.1.4 Consolidation of the 'Why' Grouping
 - 5.3.1.5 Industry Solutions Grouping - Methods
 - 5.3.1.6 Industry Solutions Grouping - Standards
 - 5.3.1.7 Industry Solutions Grouping - Tools
 - 5.3.1.8 Internal BPM Capability Grouping - Introduction
 - 5.3.1.9 Internal BPM Capability Grouping - People
 - 5.3.1.10 Internal BPM Capability Grouping - Governance
 - 5.3.1.11 Internal BPM Capability Grouping - Technology
 - 5.3.1.12 Initiatives
 - 5.3.2 Second Layer of the BPM Canvas Framework
 - 5.3.3 Third Layer of the BPM Canvas Framework
- 5.4 Proposed WIN Approach
- 5.5 Evaluation of the Proposed BPM Canvas Framework and the Proposed WIN Approach
 - 5.5.1 BPM Canvas Framework Comparison with the Forrester BPM Definition
 - 5.5.2 Client Feedback
- 5.6 Observation and Reflection of the BPM Canvas Workshop
- 5.7 Conclusion

5.1 Introduction

The purpose of this chapter is to describe the development of a BPM approach to address the problem of the lack of a BPM approach to assist SMEs, as explained in section 3.4. The suggestion, discussed in section 3.6.2, was to package available BPM related information in a prescriptive BPM approach for the use by SMEs.

The BPM approach consists of two artefacts, namely a framework and an approach to describe how to use the framework. In this chapter the proposed framework is referred to as the BPM CanvasTM Framework and the proposed approach is referred to as the WIN Approach. The reusable BPM Patterns are part of the BPM CanvasTM Framework.

The development of the BPM approach was part of the Research Sub-Cycle 2, as illustrated in Figure 5-1. The positioning of Research Sub-Cycle 2 as part of the overall research approach was described in Chapter 2 and illustrated in Figure 2-3.

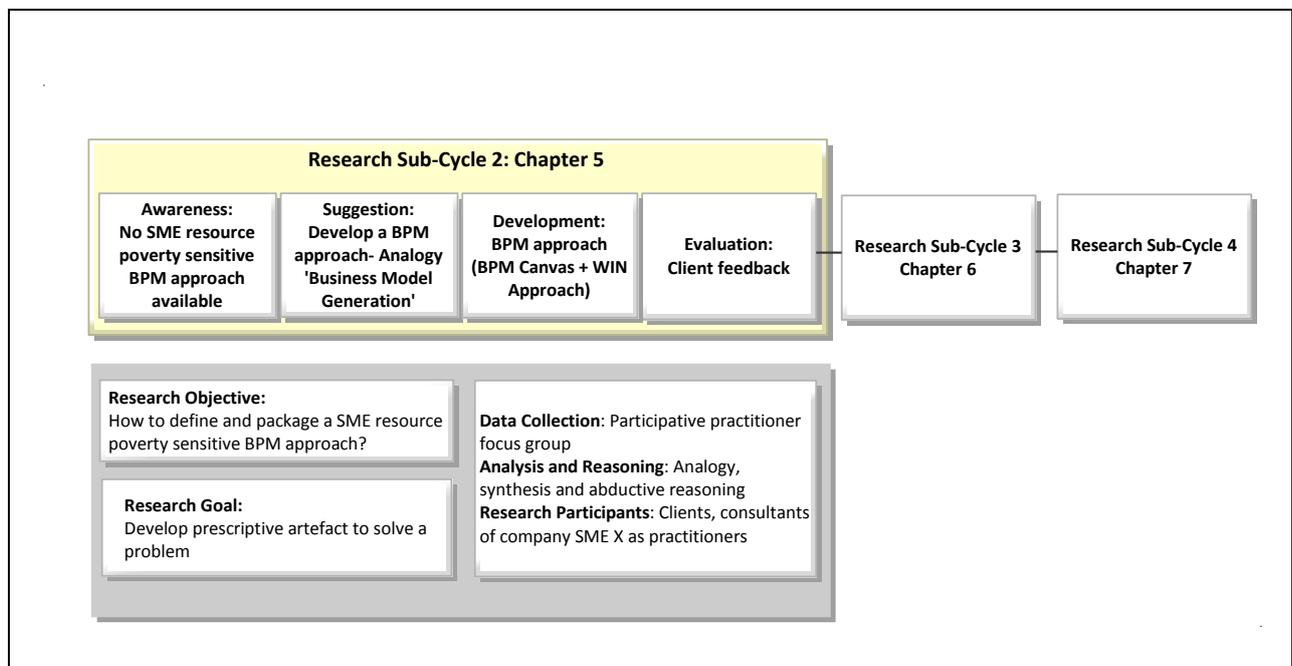


Figure 5-1: Research Sub-Cycle 2

The analysis and reasoning methods included an analogy based on the *Business Model Generation* book by Osterwalder and Pigneur [2010]. Abductive reasoning, supportive of synthesis as analysis method, was used to consolidate existing BPM related expertise to enrich the BPM CanvasTM Framework¹.

¹ *Business Model Generation* is referring to the book and 'Business Model Canvas' is referring to the framework discussed in the book [Osterwalder & Pigneur, 2010].

A more detailed explanation of the analogy with the work by Osterwalder and Pigneur [2010] is found in section 5.2. The components as well as accelerators of the BPM Canvas™ Framework are defined in section 5.3, with the explanation of the six steps of the WIN Approach included in section 5.4. Section 5.5 describes the evaluation of the BPM Canvas™ Framework and the WIN Approach, with some observations of the BPM Canvas™ Workshops in section 5.6. Section 5.7 is not only a summary of Chapter 5, but also a positioning of the reusable BPM Patterns as input for Research Sub-Cycle 3.

5.2 Analogy with the Business Model Generation Publication

The analogy is based on the principles and components of the *Business Model Generation*, a publication by Osterwalder and Pigneur [2010], discussed in section 5.2.1, and the building blocks of the Business Model Canvas framework, defined in section 5.2.2. The analogy between the *Business Model Generation* [Osterwalder & Pigneur, 2010] and the BPM Canvas™ Framework and the WIN Approach is summarised in section 5.2.3.

5.2.1 Principles and Components of the ‘Business Model Generation’ Publication

In section 3.4 one of the criteria stated for a BPM approach was that it should be SME resource poverty sensitive. As part of the awareness phase of the Main Research Cycle, described in Chapter 3, one of the findings was that such a BPM approach was lacking. The suggestion, described in section 3.6.2, was to identify an artefact used in a different discipline, but known to be SME resource poverty friendly, to be used as an analogy with the development of a BPM approach. The suggestion for Research Sub-Cycle 2 was to develop a BPM approach based on a style and structure analogy with the *Business Model Generation* work by Osterwalder and Pigneur [2010]. The fact that the *Business Model Generation* publication is used by more than one million entrepreneurs globally and is described as enabling an immediate hands-on application [Strategyzer, 2015], played a role in the selection.

Some of the characteristics of the *Business Model Generation* book [Osterwalder & Pigneur, 2010], that positions it as a good fit for the analogy, include:

- The purpose of the book is to guide the entrepreneur to understand and design a new business model or to renovate an old business model.
- The book is designed for practical and hands-on use.
- The book includes contributions by 470 practitioners from forty-five countries illustrating that it is a practitioner’s handbook.
- The book is specifically for entrepreneurs interested in creating value by building or improving businesses.

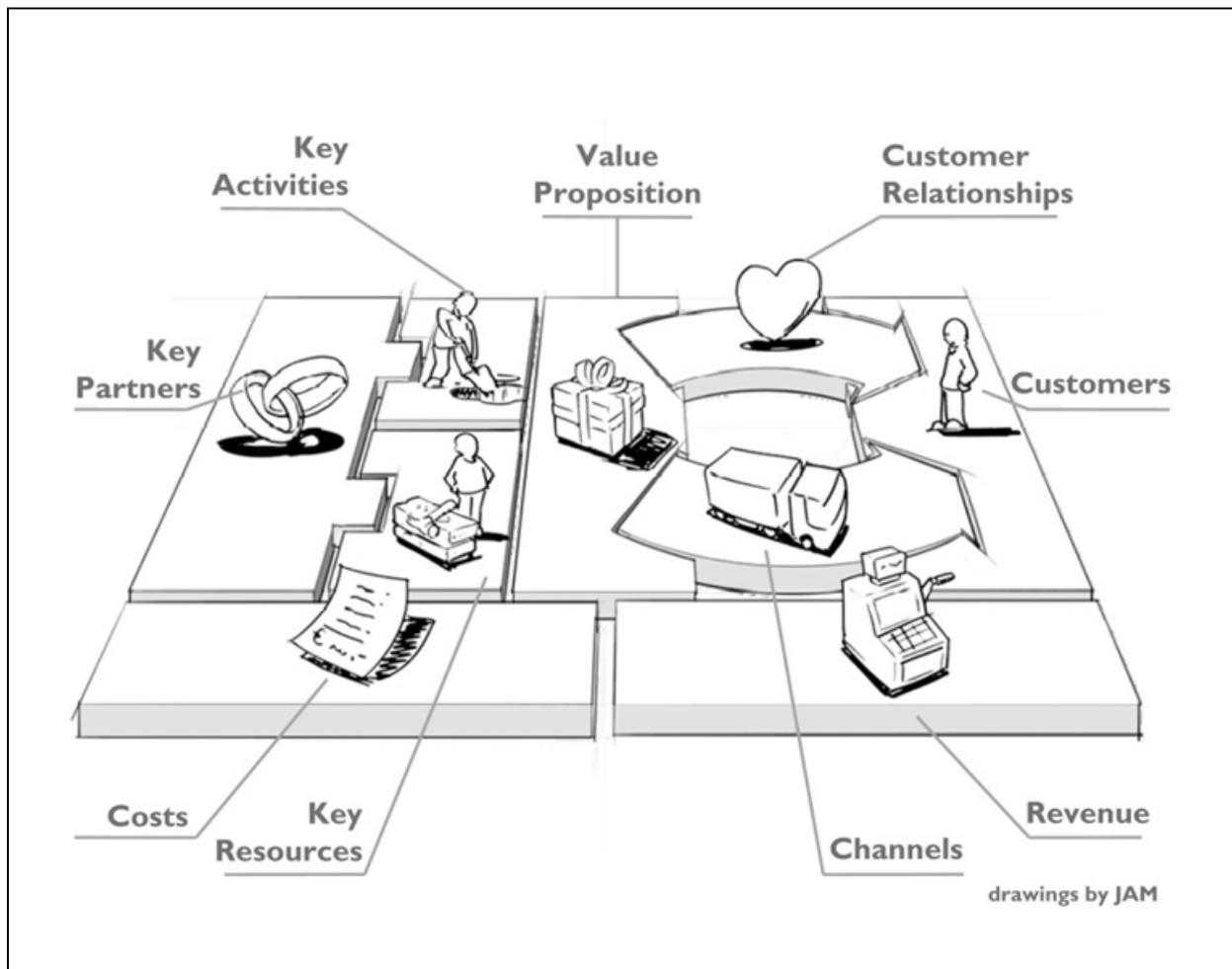


Figure 5-2: Business Model [Osterwalder & Pigneur, 2010]²

The key principles or components to consider as input for the analogy used in creating an artefact, identified after an analysis of the structure and style of the *Business Model Generation* publication, include [Osterwalder & Pigneur, 2010]:

- *A one-page framework as an overview:* The example from Osterwalder and Pigneur [2010, pp. 18-19] is the ‘Business Model Canvas’ framework included in Figure 5-2.
- *A worksheet derived from the framework that makes it easy to enter text when using the framework:* The example from Osterwalder and Pigneur [2010, p. 44] is the ‘Business Model Canvas’ in worksheet format, as illustrated in Figure 5-3.
- *Re-usable patterns describing a scenario with similar characteristics, similar arrangement of building blocks and similar behaviours:* An example from Osterwalder and Pigneur [2010, p. 96] is included in Figure 5-4 describing a business model based on offering the basics for free and then allowing a user to get more functionality by paying a subscription fee.

² The graphic is from the following website: <http://www.zebamc.com/wp-content/uploads/2012/02/bmcanvas-basic-model3.jpg>

- *The technique known as visual thinking and telling a visual story:* Figure 5-5 is an example of a *Business Model Generation* project room with the outcome of visual thinking visible on the walls.
- *The concept of an evolving model based on the framework:* As an example, Osterwalder and Pigneur [2010, p. 211] refer to painting different pictures of the future, each represented in a separate worksheet.
- *A generic approach tying together the concepts:* The five phases of the business model design process are defined by Osterwalder and Pigneur [2010, p. 249] as mobilise, understand, design, implement and manage.

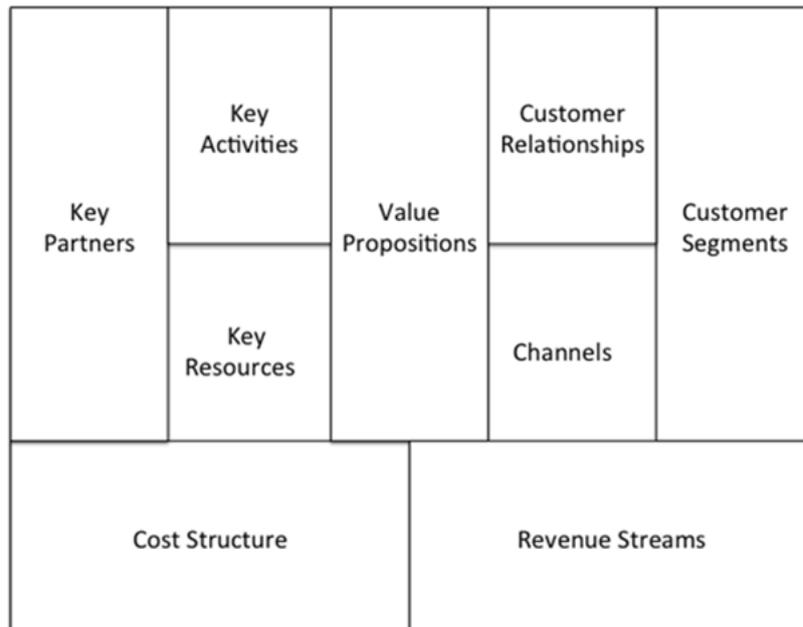


Figure 5-3: Business Model Canvas Worksheet [Osterwalder & Pigneur, 2010, p. 44]

5.2.2 Building Blocks of the Business Model Canvas as Framework

According to Osterwalder and Pigneur [2010], a business model describes the rationale for how an organisation creates, delivers and captures value and is defined by nine building blocks. The building blocks of the Business Model Canvas [Osterwalder & Pigneur, 2010] are defined as:

- The customer segments served by the organisation.
- The value proposition, which is either the solution to a problem or the satisfaction of a customer need.
- The channels used to deliver the value proposition to the customer.
- The customer relationships established and maintained with each customer.
- The revenue stream as the result of the value proposition successfully offered to the customer.
- The key resources or the assets required to deliver the value proposition.
- The key activities performed by the key resources.

- The key partners performing activities that are outsourced or acquired from outside the organisation.
- The cost structure reflecting all the costs as an outcome of the business model.

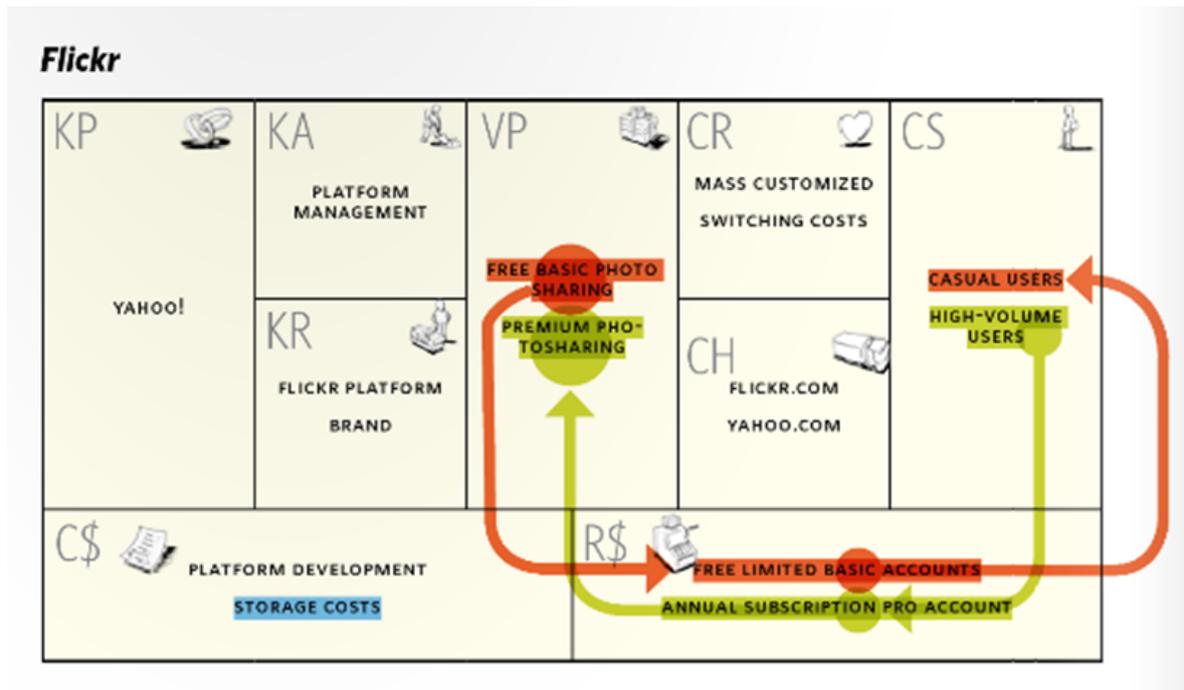
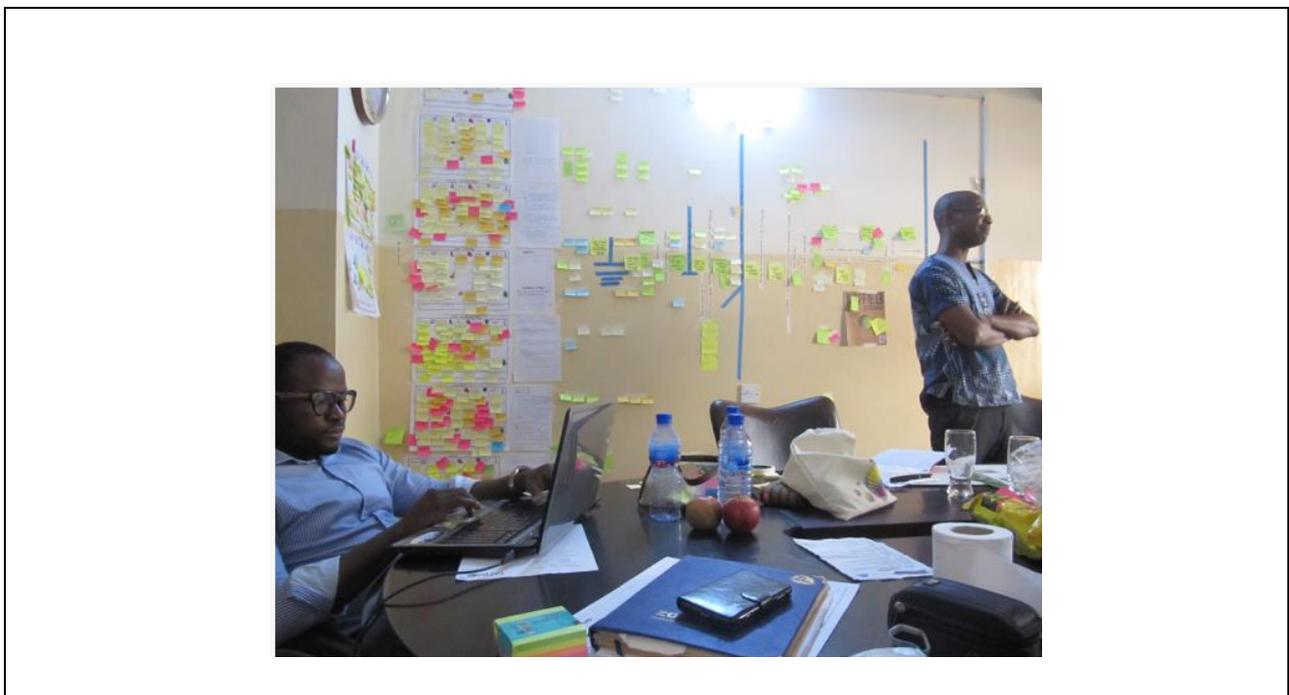


Figure 5-4: Example of Get the Basics for Free, Pay for More Pattern [Osterwalder & Pigneur, 2010, p. 96]³



³ Pattern as used by Osterwalder and Pigneur [2010, p55] “describing business models with similar characteristics, similar arrangements of business model building blocks or similar behaviours.”

Figure 5-5: Business Model Generation in Ghana [TAHMO, 2015]

5.2.3 Analogy between *Business Model Generation* and the BPM Canvas™ Framework and the WIN Approach

The analogy make use of the principles, components and the building blocks of the *Business Model Generation* concept, as defined by Osterwalder and Pigneur [2010]. Table 5-1 highlights how the the *Business Model Generation* [Osterwalder & Pigneur, 2010] principles and components are applied in the analogy to develop the BPM Canvas™ Framework and the WIN Approach.

Table 5-1: Analogy between the *Business Model Generation* [Osterwalder & Pigneur, 2010] principles and components and the BPM Canvas™ Framework and the WIN Approach principles and components

<i>Business Model Generation</i> components [Osterwalder & Pigneur, 2010]	BPM Canvas™ Framework and the WIN Approach components	Reference to Section in Chapter 5
Framework as overview (Component)	BPM Canvas™ Framework	Section 5.3 and Figure 5-6
Worksheet (Component)	BPM Canvas™ Worksheet	Section 5.3.1 and Figure 5-7
Reusable patterns (Component)	‘What’ – BPM Patterns	Section 5.3.2
Visual thinking (Principle)	Interactive workshop approach	Section 5.5.2
Evolving model (Principle)	‘Where’ – Maturity Assessment	Section 5.3.3
Approach (Component)	WIN Approach	Section 5.4

Table 5-2 indicates how the analogy is applied between the building blocks of the Business Model Canvas [Osterwalder & Pigneur, 2010] and the building blocks of the BPM Canvas™ Worksheet.

Table 5-2: Analogy between the Business Model Canvas [Osterwalder & Pigneur, 2010] building blocks and the BPM Canvas™ Worksheet building blocks

Building Blocks Business Model Canvas [Osterwalder & Pigneur, 2010]	Building Blocks BPM Canvas™ Worksheet	Reference to Section in Chapter 5
Customer segments	Business model: The business is	Section 5.3.1.1 and Figure 5-8

	served by the BPM Initiatives part of ‘Why’	
Value proposition	Initiatives: The BPM Initiative is either the solution to a business problem or the satisfaction of a business need.	Section 5.3.1.12
Channels	Value proposition: The value of the BPM Initiative is delivered to the business.	Section 5.3.1.3 and Figure 5-11
Customer relationship	BPM business drivers: The relationship between the business and the BPM Initiatives is created and maintained via BPM Drivers.	Section 5.3.1.2 and Figure 5-10
Revenue stream	Out of scope for the BPM@SME research.	
Key resources	Internal capability: <ul style="list-style-type: none"> • People • Governance • Technology 	Section 5.3.1.8 and Figure 5-15
Key activities	Included are the people, governance and technology required to deliver the initiatives.	
Key partners	Industry solutions: <ul style="list-style-type: none"> • Method • Standards • Tools The industry solutions provide methods, standards and tools that are available for acquisition in order to provide the internal capability.	Section 5.3.1.5, section 5.3.1.6, and section 5.3.1.7 as well as Figure 5-12, Figure 5-13 and Figure 5-14
Cost Structure	Out of scope for the BPM@SME research.	

5.3 Proposed BPM Canvas™ Framework

The intention in developing the proposed BPM Canvas™ Framework was not to complete a full literature review on each component, nor to define a new BPM framework to replace existing BPM frameworks. The objective was to reference material and to identify accelerators available in the BPM body of knowledge, and to package existing BPM expertise so as to assist and guide the SME manager. An accelerator is BPM related knowledge that is already available and packaged in a format that is reusable, for example the list of typical business drivers for BPM by Davis [2013]. It is envisioned that the BPM Canvas™ Framework would evolve over time as new accelerators are added to enrich the BPM Canvas™ Framework.

The proposed BPM Canvas™ Framework, as illustrated in Figure 5-6, consists of three layers:

- BPM Canvas™ Worksheet as Layer 1.
- ‘What’ referring to reusable BPM patterns as Layer 2.
- ‘Where’ referring to an evolving model as Layer 3.

The detail of the layers, the grouping of building blocks per layer and the building blocks themselves are discussed in section 5.3.1 to section 5.3.3.

5.3.1 BPM Canvas™ Worksheet Layer 1

The BPM Canvas™ Worksheet (first layer) of the proposed BPM Canvas™ Framework consists of building blocks, as illustrated in Figure 5-6.

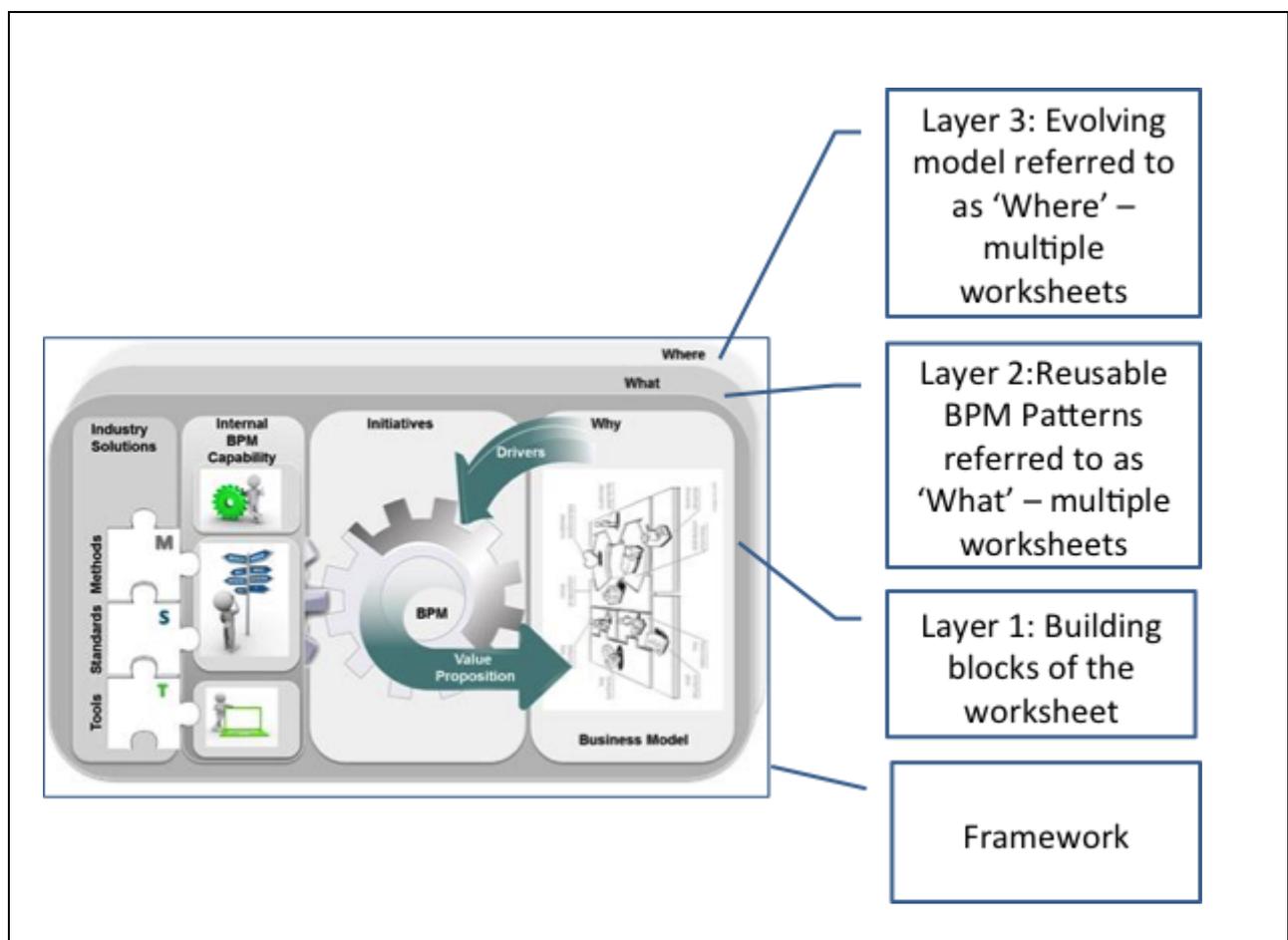


Figure 5-6: Proposed BPM Canvas™ Framework

The worksheet, as illustrated in Figure 5-7, represents the same building blocks in a format that is easy to populate with content.

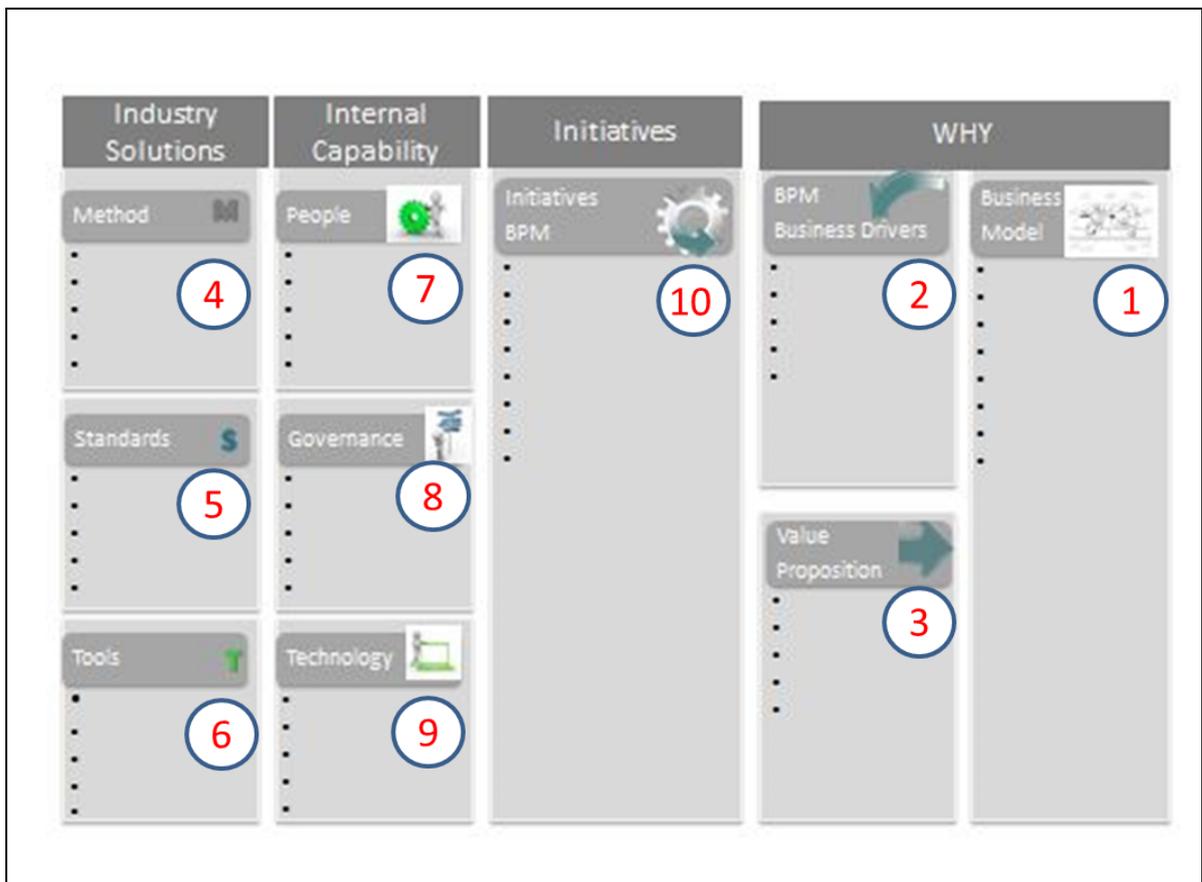


Figure 5-7: Proposed BPM Canvas™ Worksheet

The following is a description of the building blocks of Layer 1 of the BPM Canvas™ Framework:

- *‘Why’ grouping (Building Blocks 1-3):* In order to explain ‘why’ BPM adds value to a specific business the following three building blocks are included as part of the ‘Why’ grouping:
 - *Business Model (Building Block 1):* The value of BPM is driven by the business model in order to explain the problem to be solved by BPM or the need of the business to be supported by BPM.
 - *BPM Business Drivers (Building Block 2):* The BPM business drivers are derived from the business model and provide the motivation for the BPM initiative.
 - *BPM Value Proposition (Building Block 3):* The value is created through successful BPM initiatives addressing a specific problem or business need as defined by the business model.
- *Industry Solution grouping (Building Blocks 4-6):* Creation of an internal BPM capability is dependent on available industry solutions, such as:
 - *Methods (Building Block 4):* For example Lean-SixSigma [Tenera & Pinto, 2014] or Outside-In [Towers, 2010] as methods.
 - *Standards (Building Block 5):* For example BPMN as notation [Silver, 2011].
 - *BPM tools (Building Block 6):* For example business analysis tools [Norton, 2011].
- *Internal Capability grouping (Building Blocks 7-9):* In order to support the BPM initiatives an internal BPM capability is a prerequisite consisting of:

- *People (Building Block 7)*: It is important to define roles and responsibilities, with the required BPM skills, in order to establish an internal BPM capability.
- *Governance (Building Block 8)*: To manage an internal capability, policies, standards, procedures and guidelines are needed as governance for an internal BPM practice.
- *BPM technology (Building Block 9)*: The internal BPM practice uses specific technology from the tools available in the industry.
- *Initiatives (Building Block 10)*: The identification and prioritisation of the BPM initiatives are determined by the BPM business drivers.

The first layer of the proposed BPM Canvas™ Framework is captured in a worksheet, as illustrated in Figure 5-7, representing the ten building blocks, as well as the sequence of discussion, as mentioned above. The conversion of the proposed BPM Canvas™ Framework to a worksheet is based on a similar concept used in the Business Model Generation [Osterwalder & Pigneur, 2010] with reference to Figure 5-3. The BPM@SME research considered a limited number of sources per component to derive an initial set of accelerators. The expectation is that the number of accelerators should evolved over time through the application of the BPM Canvas™ Framework.

5.3.1.1 ‘Why’ Grouping - Business Model Building Block

This section describes the Business Model, Building Block 1 (Figure 5-7), as part of the ‘Why’ grouping of the proposed BPM Canvas™ Framework, as highlighted in Figure 5-8

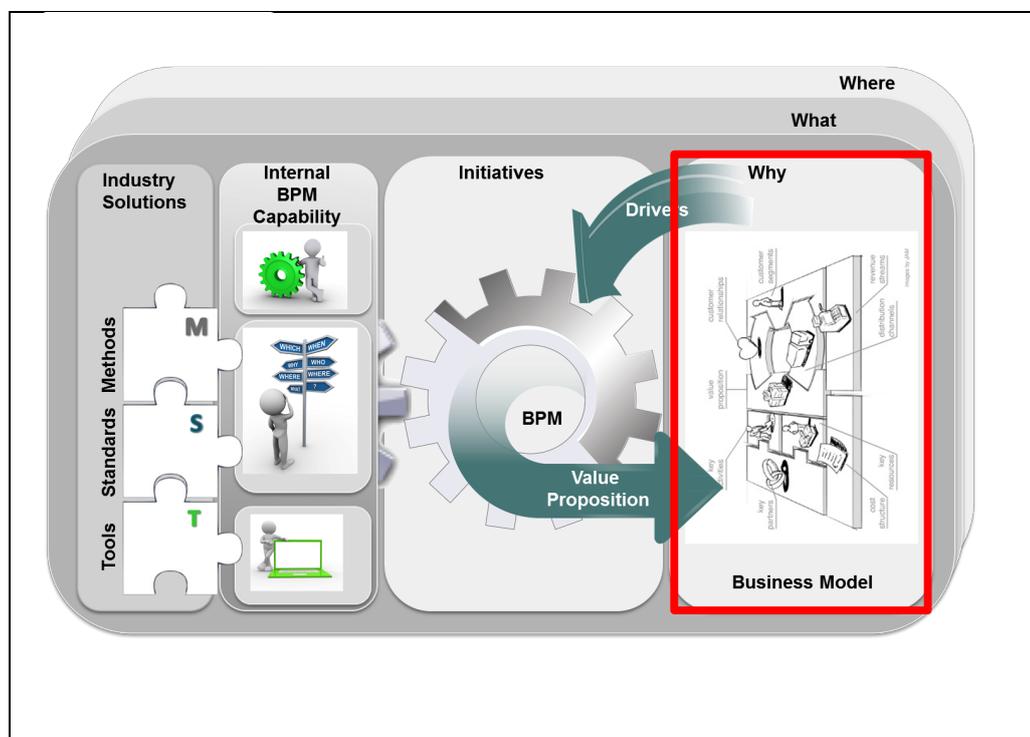


Figure 5-8: The Business Model as part of ‘Why’ grouping

According to Osterwalder and Pigneur [2010] a business model describes the rationale for how the organisation creates, delivers and captures value (economic, social, or other forms of value). The process of business model construction is part of the overall business strategy. In theory and practice the term business model is used for a broad range of informal and formal descriptions to represent core aspects of a business, including purpose, offerings, specific strategies, infrastructure, organisational structures, trading practices, and operational processes and policies [Zott, Amit, & Massa, 2010]. A more comprehensive description and comparison of business models was carried out by Zott et al. [2010].

For the business model component of the BPM Canvas™ Framework four accelerators, existing knowledge from the BPM knowledge base, were considered, namely:

- Patterns from Osterwalder and Pigneur [2010].
- Digital enterprise business models by Rappa [2001].
- Characteristics of four operating models from a business process standardisation and integration perspective by Ross et al. [2006].
- Patterns identified, as part of the BPM@SME study, during focus group sessions by senior BPM consultants of company SME X.

5.3.1.1.1 Five Patterns Listed by Osterwalder and Pigneur

The first accelerator was the five patterns listed by Osterwalder and Pigneur [2010]. These patterns are examples of business models to be considered:

- On the basis of the Unbundling Business Model [Osterwalder & Pigneur, 2010], the different drivers for the business, such as product innovation (product leadership), customer relationship management (customer intimacy) and infrastructure management, should be unbundled as indicated in Table 5-3. The guideline is that if a business consists of a mixture of product innovation, customer relationship as focus and the providing of infrastructure, the management should consider splitting the business into different business entities.

Table 5-3: Three core business types [Hagel III & Singer, 1999]

	Product Innovation	Customer Relationship Management	Infrastructure Management (Operational Excellence)
Economics	Early market entry enables the charging of premium prices and the acquisition of large market share; speed is key.	High cost of customer acquisition makes it imperative to gain large wallet share; economies of scope are key.	High fixed costs make large volumes essential to achieve low unit costs; economies of scale are key.
Competition	Battle for talent; low barriers to entry; many small players thrive.	Battle for scope; rapid consolidation; a few big players dominate.	Battle for scale; rapid consolidation; a few big players dominate.

Culture	Employee centred; coddling the creative stars.	Highly service oriented; customer-comes-first mentality.	Cost-focused; stresses standardisation, predictability and efficiency.
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- The Long Tail Business Model [Osterwalder & Pigneur, 2010] is based on selling a large number of niche products in low volumes. A typical example is the book industry, which requires low inventory costs and strong platforms to make the products available to the buyers. Traditionally large volumes of books were printed for a small selection of approved books. With the digital drive it is not necessary to print books at high cost. Publishing large number of electronic books even if the demand is low is a popular business model.
- The Multi-Sides Platform Business Model [Osterwalder & Pigneur, 2010] is based on the creation of value as intermediary between two or more distinct interdependent groups of customers. Typical examples are Visa Credit Card, Microsoft Windows Operating Systems and Google Advertising. The focus is on keeping multiple customer segments interested.
- The FREE as Business Model [Osterwalder & Pigneur, 2010] is based on the concept that at least one substantial customer segment is able to continuously benefit from a free-of-charge offer. The non-paying customer is financed by another part of the business model or another customer segment.
- The Open Business Model [Osterwalder & Pigneur, 2010] is based on collaborating with partners, for example by opening the research process to outside partners encouraging open innovation.

5.3.1.1.2 Digital Enterprise Models by Rappa

A second accelerator was the Rappa [2001] digital enterprise models included in Table 5-4. The digital enterprise domain is an important focus for SMEs and these examples are included to assist entrepreneurs in identifying a relevant business model.

Table 5-4: Digital Enterprise Models [Rappa, 2001]

E-Business Model Type	Description
Brokerage Model	They bring buyers and sellers together and facilitate transactions. Usually, a broker charges a fee or commission for each transaction it enables.
Advertising Model	The broadcaster, in this case a web site, provides content (usually for free) and services (like email, chat, forums) mixed with advertising messages in the form of banner ads as major sources of revenue.
Merchant Model	Some firms function as information intermediaries, either collecting data about consumers or by collecting data about producers and their products and then selling it to firms which in turn can mine it for important patterns and other useful information to better serve their clients.
Manufacturer Model	Manufacturers can reach buyers directly through the Internet and thereby compress the distribution channel.

Affiliate Model	The affiliate model provides purchasing opportunities wherever people may be surfing. It does this by offering financial incentives to affiliated partner sites. The affiliates provide purchase-point click-through to the merchant via their web sites.
Community Model	This model is based on user loyalty. Users have a high investment in time and emotion in the site. In some cases, users are regular contributors of content and/or money.
Subscription Models	Users are charged a periodic fee to subscribe to a service.
Utility Model	The utility model is based on metering usage, or a pay-as-you-go approach, based on actual usage rates.

5.3.1.1.3 Four Operating Models by Ross, Weill and Robertson

A third accelerator was the model by Ross et al. [2006], which is important to the entrepreneur interested in growth. An enterprise may have one operating model at enterprise level and adopt different operating models at another level, for example business unit level. The value for the manager is in positioning an operating model in one of the quadrants illustrated in Figure 5-9. The objective of the model is to determine the integration requirements by asking to what extent the completion of one business unit's transactions is dependent on the availability, accuracy and timeliness of other business units' data. Secondly it determines the standardisation requirements by asking to what extent the company benefits from having business units run their operations in the same way.

The four operating models by Ross et al. [2006] are summarised as:

- **Diversification:** Business units in diversified companies offer different products and services to different companies. The requirements for both integration and standardisation are low and the companies grow through the success of the individual business units and the acquisition of related businesses.
- **Coordination:** Business units in a coordination company share a combination of customers, products, suppliers and partners. The requirement for integration is high but the value of standardisation of processes is low. Growth is typically by extension to defined customer segments in new markets. By integrating, but not standardising products and processes the customer service is enhanced. Profitable growth is by attracting new customers and selling more products to existing customers.
- **Replication:** In a replication operating model the success of the company is dependent on efficient, repeatable business process rather than shared customer relationship. Growth is typically associated with franchise operations quickly installing standardised practices and technology as a foundation allowing the local manager to grow the business.
- **Unification:** Companies maximise efficiencies and customer service by integrated data and driving variability out of business processes. Growth is associated with leveraging economies of scale and companies whose products and services are largely commodities.

Business Process Integration	High	<p>Coordination</p> <ul style="list-style-type: none"> • Shared customer, products or suppliers • Impact on other business units or functions • Business unit control over business process design • Shared customer/supplier/product data • Consensus processes for designing IT infrastructure services; IT application decisions made in business units 	<p>Unification</p> <ul style="list-style-type: none"> • Customers or suppliers may be local or global • Globally integrated business processes often with support of enterprise systems • Business units with similar or overlapping operations • Centralised management often applying functional/process/business unit matrices • High-level process owners design standardised processes • Centrally mandated databases • IT decisions made centrally
	Low	<p>Diversification</p> <ul style="list-style-type: none"> • Few, if any, shared customers or suppliers • Independent transactions • Operationally unique business units • Autonomous business management • Business unit control over business process design • Few data standards across business units • Most IT decisions made within business units 	<p>Replication</p> <ul style="list-style-type: none"> • Few, if any, shared customers • Independent transactions aggregated at a high level • Operationally similar business units • Autonomous business unit leaders with limited discretion over processes • Centralised(or federal) control over business process design • Standardised data definitions but data locally owned with some aggregation at corporate • Centrally mandated IT services
		Low	High
Business Process Standardisation			

Figure 5-9: Characteristics of four operating models [Ross et al., 2006]

5.3.1.1.4 Focus Group Contribution

The fourth accelerator was the outcome of the focus group sessions with the senior BPM consultants of Company SME X. More detail is provided in section 5.3.2, but as summary a number of generic business model scenarios were identified in order to assist users of the BPM Canvas™ Framework. The following scenarios were built around business objectives such as:

- Sustainability
- A one-time event such as acquisition/merger drive
- Supply-chain optimisation
- Solution driven automation
- Alignment of technology enablement (also known as enterprise architecture)
- Increase of market share through a customer-centric approach
- Compliance.

5.3.1.1.5 Consolidated List of Accelerators to Determine the Rationale behind the Business Model

The accelerators, related to business models or the rationale per business model, discussed in sections 5.3.1.1.1 to 5.3.1.1.4 provide guidance for the SME manager regarding a relevant business model

rationale. However, during the work sessions with the clients of company SME X, it became clear that providing a large number of non-consolidated accelerators from the BPM knowledge base was less productive and tended to be an overload of information for participants. The different accelerators from the BPM knowledge base were therefore consolidated and summarised using synthesis, as an analysis method, and abductive reasoning, as a reasoning method.

The consolidated list of the rationale behind a business model is included in Table 5-5. Each business model rationale is labelled with a ‘BM’ number as identifier in order to cross-reference the specific business model rationale with the consolidation of the ‘Why’ grouping in section 5.3.1.4.

Table 5-5: Consolidated List of Business Models

BM ID	Business Model Rationale	Reference to Accelerators
BM1	Create value through product leadership	<ul style="list-style-type: none"> • Unbundling business model • Open business model
BM2	Create value through customer intimacy	<ul style="list-style-type: none"> • Unbundling business model • FREE as business model • Merchant model • Community model • Customer centricity
BM3	Create value through operational excellence	<ul style="list-style-type: none"> • Unbundling business model • Long tail business model • Manufacturer model • Subscription model • Utility model • Supply-chain optimisation
BM4	Growth through coordination as well as partnerships	<ul style="list-style-type: none"> • Business process integration • Multi-sides platform • Brokerage model • Advertising model • Affiliate model
BM5	Compliance a prerequisite to create value	<ul style="list-style-type: none"> • Legislation-related compliance • Quality-related compliance
BM6	Create value through a one-time event	<ul style="list-style-type: none"> • Events such as a merger, acquisition, outsourcing or shared service implementation • Unification
BM7	Create value through technology enablement	<ul style="list-style-type: none"> • Long tail business model • Enterprise architecture • Solution driven automation • Sustainability
BM8	Growth through replication	<ul style="list-style-type: none"> • Business process standardisation (e.g. franchise operations)
BM9	Growth associated with leveraging economies of scale	<ul style="list-style-type: none"> • Unification

5.3.1.2 ‘Why’ Grouping - BPM Business Drivers Building Block

With the Business Model positioned in section 5.3.1.1 it was possible to identify the BPM Business Drivers, Building Block 2 (Figure 5-7), for the enterprise as highlighted in Figure 5-10. A BPM business driver refers to a situation, strategy or goal that motivates management to support business process management including business process change.

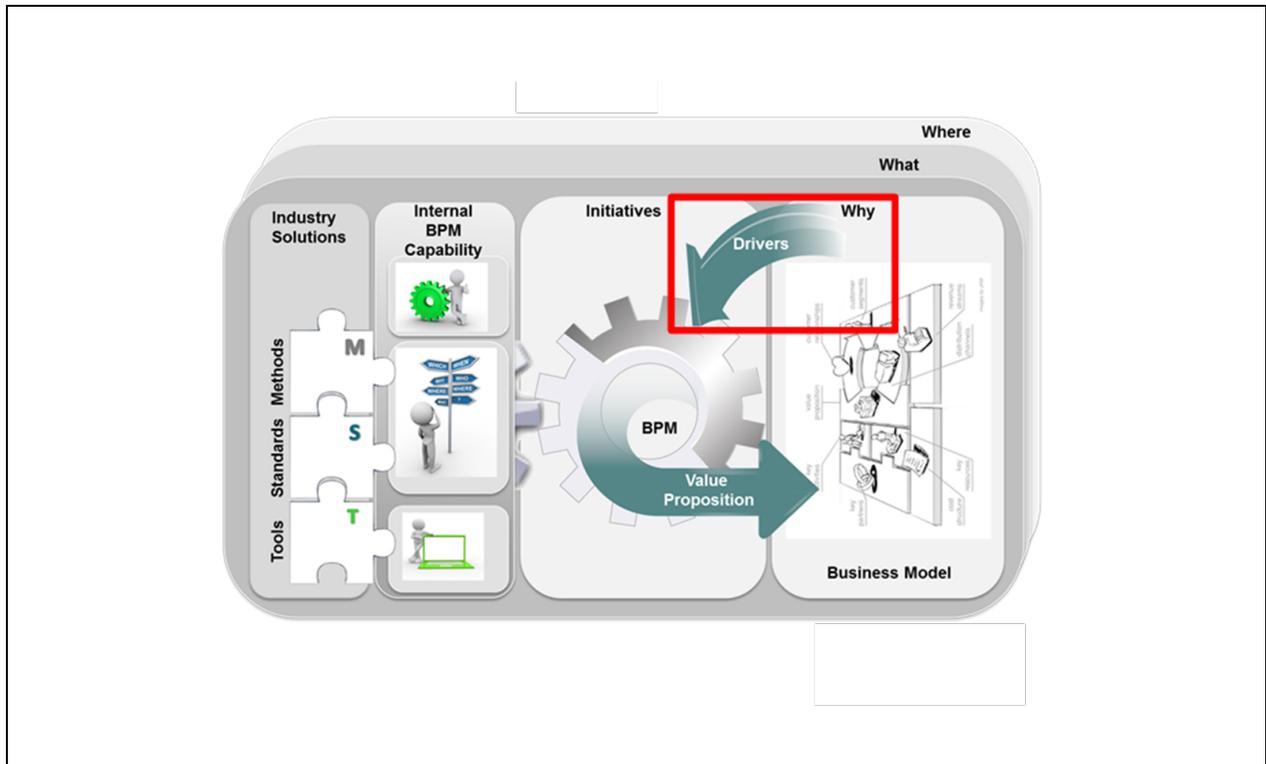


Figure 5-10: BPM Drivers as part of ‘Why’

The definition of the accelerators from the BPM knowledge base for the BPM Business Drivers was based on the Gartner Report on *Drivers for BPM* [Sinur, 2004], the comments by Cleveland [2009], the PEX Report [Davis, 2013] and the BPTrends Report [Harmon & Wolf, 2014]. These accelerators are introduced in sections 5.3.1.2.1 to 5.3.1.2.4 below. The consolidated list of BPM Business Drivers is presented in section 5.3.1.2.5.

5.3.1.2.1 Drivers for BPM: 11 Money-Relevant Reasons to Start

The following business drivers for BPM are discussed by Sinur [2004] and are labelled with an identifier starting with the letter ‘A’ for cross-referencing during the consolidation of the business drivers for BPM in section 5.3.1.2.5:

- A1. *Build better new processes faster*: Designing new business process is a common way of understanding and simulating the kinds of processes to be put in place to support new progressive offerings.
- A2. *Know what you're doing (right or wrong) through current process understanding*: Processes tend to become costly and burdensome as a result of process 'decay'. Modelling of processes shows opportunities for cost savings that enterprises thirst for during tough times.
- A3. *Avoiding friction during mergers and/or acquisitions is important*: These one-time events are great opportunities to normalise and standardise processes whether by adopting proven business processes or best-of-breed processes or by comparing processes.
- A4. *Get someone else to do the dull stuff with Business Process Outsourcing (BPO)*: A prerequisite for BPO is the documentation of the current processes to ensure that processes will be handled properly and it is important input to the negotiation of service level agreements.
- A5. *Buy software and implement packages better*: Understanding the business requirements and corresponding customisation necessary to implement software is an area to benefit from business process modelling.
- A6. *It is important to get control of parallel processes by consolidating these variations into core processes*: Enterprises often create separate, but similar, business processes to enter new markets for anticipated revenue lifts. It is hard to reconcile these process variants without some business process reference model to help normalise the variants back into a core process with local variants for product type or region.
- A7. *Reallocate the repetitive non-intelligent work away from people through the automation of manual processes resulting in human resources taking responsibility for more value-adding processes*.
- A8. *Value or supply chain creation or maintenance and other process fusion*: Business process modelling assists with the management of end-to-end processes involving several partners, the extended supply-chain and even fusion between the business process and the supporting technical infrastructure.
- A9. *Ensure that things are done better with optimised processes*: Processes can easily be used to optimise cost, time-to-market, resource loading, risk and quality through the use of business processes for initial design and ongoing improvements.
- A10. *Stay out of trouble by staying ahead of compliance*: As the cost of remaining compliant goes up, and as governing boards and societies require more responsible behaviour the compliance of business processes increases in importance.
- A11. *Stay hungry, move faster through scenario building for agility and policy management*: Business process management is a foundation for creating reactions to opportunistic or threatening scenarios. In order to plan for these scenarios associated policies and ready-to-implement pre-tested packages of rules are plugged into these business process scenarios.

5.3.1.2.2 Business Drivers for BPM

The following business drivers for BPM are listed by Cleveland [2009] and are labelled with an identifier starting with the letter 'B' for cross-referencing during the consolidation of business drivers for BPM in section 5.3.1.2.5:

- B1. *Globalisation*: People are searching the globe to find advantages in cost, quality and innovation.
- B2. *Productivity*: All companies must produce more goods and/or services in less time in order to remain competitive.
- B3. *Innovation*: Make time for innovation to remain at or move to the top.
- B4. *Compliance*: Regulatory requirements are costly and typically do not add value.
- B5. *Information overload*: The world is data rich and information poor. You must find ways to turn data into information.
- B6. *The changing nature of people and work*: Reaching higher levels of productivity and performance requires new approaches.
- B7. *Customer first*: If you don't put your customer first, your customer is not likely to put you first. Existing customers are the cheapest, easiest avenue to new business.

5.3.1.2.3 BPM Drivers According to the PEX State of the Industry Report

In the PEX State of the Industry Report [Davis, 2013] the following BPM business drivers are listed and the letter 'C' was used as identifier for cross-referencing as part of the consolidation of Business Drivers for BPM in section 5.3.1.2.5:

- C1. Ensuring customer focus
- C2. Improving processes
- C3. Enhancing efficiency
- C4. Improving data quality and analysis
- C5. Reducing risk
- C6. Improving quality of products
- C7. Upgrading technology systems.

5.3.1.2.4 BPTrends State of Business Process Management

The BPM business drivers are summarised as follows, in the BPTrends State of BPM Report [Harmon & Wolf, 2014], and these BPM business drivers were labelled with the letter 'D' for future cross-referencing as part of the consolidation of Business Drivers for BPM in section 5.3.1.2.5:

- D1. Need to save money by reducing costs and / or improving productivity.
- D2. Need to improve management coordination or organisational responsiveness.
- D3. Need to improve customer satisfaction so as to remain competitive.
- D4. Need to improve management of IT resources (ERP Applications).
- D5. Government or business risk management (Sarbanes-Oxley, ISO9000).

- D6. One-time event (merger or acquisition).
- D7 Need to improve existing products or enter new lines of business to remain competitive.

5.3.1.2.5 Consolidation of the BPM Business Drivers

The BPM business drivers from the various sources were consolidated, using synthesis as analysis method as presented in Table 5-6. The cross reference to the sources was maintained, making it possible for the SME manager to refer to additional explanations and definitions per BPM Business Driver. During the work sessions the participants preferred to work with a consolidated list of BPM Business Drivers, rather than being overloaded with the individual sources of BPM business drivers. Each BPM Business Driver is labelled with a ‘BD’ number as identifier in order to cross-reference the specific BPM Business Driver with the consolidation of the ‘Why’ grouping in section 5.3.1.4.

With both the Business Model and BPM Business Driver building blocks defined it was possible to move to the third component, the BPM Value Proposition, as discussed in section 5.3.1.3.

Table 5-6: Consolidated BPM Business Drivers

BPM Business Drivers Identifier	BPM Business Drivers	Sinur [2004]	Cleveland [2009]	Davis [2013]	Harmon and Wolf [2014]
BD1	Need to manage processes to improve customer satisfaction in order to remain competitive		B7	C1	D3
BD2	Enhancing effectiveness/efficiency of processes in terms of cost, time and/or productivity	A2, A9	B2, B1, B6	C3, C2	D1
BD3	Process enablement with technology	A5, A7		C7	D4
BD4	Improving quality of products through process alignment		B1	C6	D5
BD5	Reducing risk through compliance of processes with legislation	A10	B4	C5	D5
BD6	Turning data into information including process intelligence		B5	C4	
BD7	Designing processes to support innovation, agility and effectiveness	A1, A11	B3, B1		D7, D2
BD8 BD8.1 BD8.2 BD8.3	Process fusion including: Standardisation of processes Creating variations of processes Integration of processes	A8, A6, A3, A4			D6

5.3.1.3 ‘Why’ Grouping - BPM Value Proposition Building Block

This section describes the BPM Value Proposition, Building Block 3 (Figure 5-7), as part of the ‘Why’ grouping of the BPM Canvas™ as highlighted in Figure 5-11.

A value proposition is a promise of value to be delivered and a belief on the part of the customer in the value that will be experienced. A value proposition can apply to an entire organisation, or parts thereof, or to customer accounts or products or services. Creating a value proposition is a part of a business strategy. The strategy is based on a differentiated customer value proposition as satisfying customers is the source of sustainable value creation [Kaplan & Norton, 1996].

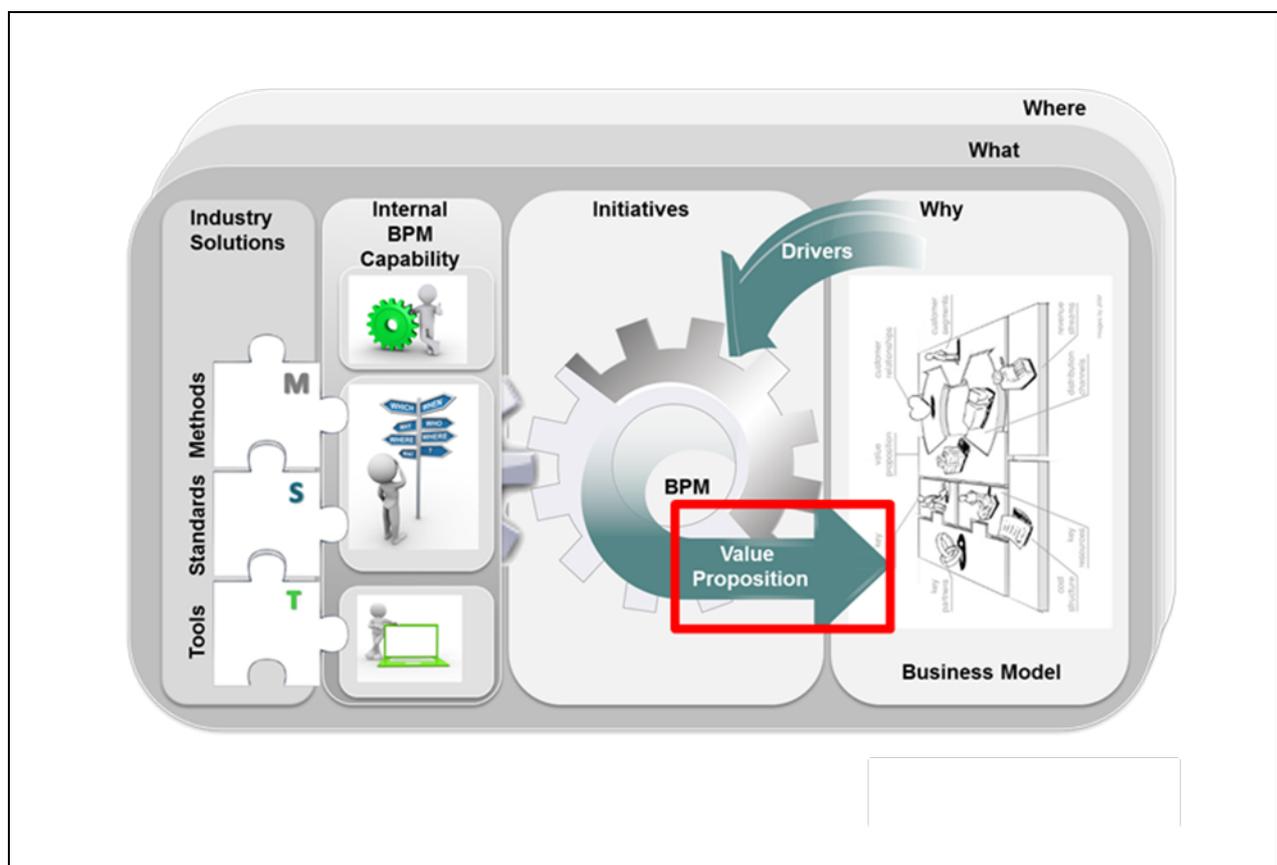


Figure 5-11: BPM Value Proposition as part of ‘Why’

Developing a value proposition is based on a review and analysis of the benefits, costs and value that an organisation can deliver to its customers, prospective customers, and other constituent groups within and outside the organisation. It is also the positioning of value, where value equals the benefits minus the cost, where cost includes risk as well.

As accelerators, three references were included as examples to help the SME manager to identify the value proposition of BPM within the specific enterprise. These references were the BPM benefit checklist by Rudden [2007], a number of BPM-related case studies [Fischer, 2012], and the fundamental needs of customers [Flamend, 2012].

5.3.1.3.1 BPM Benefit Checklist

The first reference for value proposition accelerators was the BPM benefit checklist, with examples, by Rudden [2007], included in Table 5-7. The specific examples would differ per enterprise. The focus was to highlight the classification of efficiency, effectiveness and agility:

- *Efficiency*: The extent to which time, effort, or cost is well-used for the intended task or function. It refers to how an activity is performed.
- *Effectiveness*: The degree to which objectives are achieved and the extent to which targeted problems are solved is known as effectiveness.
- *Agility*: The ability of an organisation to rapidly adapt to market and environmental changes in productive and cost-effective ways.

Each value statement is labelled with an identifier starting with a double alphabetic letter, e.g. AA, for cross-referencing during the consolidation of the value propositions for BPM in section 5.3.1.3.4

Table 5-7: Rudden BPM Benefit Checklist [Rudden, 2007]

Value Proposition Identifier	Value Proposition	Example	Description of Example
AA1	Efficiency	Eliminate manual data entry	Reduction in time to add a new employee record into the HR system from 9 hours to 10 minutes.
AA1	Efficiency	Reduce process cycle time	Reduction in compensation processing timing for 12,000 sales reps from 33 days down to 7.
AA1	Efficiency	Reduce manual analysis/routing	Elimination of 80% of the manual work previously required to route invoice exceptions to the appropriate resolution teams.
BB1	Effectiveness	Handle exceptions faster and better	Evolve process from saving 5% of distressed shipments to saving 70%, yielding \$2M per quarter in saved revenues.
BB1	Effectiveness	Make better decisions	Better review process results in \$3M saved in billing dispute write-offs that would formerly have just been processed because the process was poorly controlled.
BB1	Effectiveness	Consistent execution	Customer satisfaction improvement to 92% based on proactive tasks that help ensure the home loan process is executed better and faster.

CC1	Agility	Faster regulatory compliance	Change customs related processes within 90 days to comply with new federal regulations for better shipping visibility.
CC1	Agility	Support new business models	Ability to change shipping partners within 10 minutes in core process allows manufacturer to change primary shipper every quarter – based on best bid provided.

5.3.1.3.2 BPM Case Studies

A second reference for value proposition accelerators was a number of case studies [Fischer, 2012], and the specific value contribution is highlighted in Table 5-8 and grouped according to a classification derived during a focus group of senior BPM consultants in Company SME X. These value proposition statements were labelled with letters of the alphabet e.g. ‘DD’ for future cross-referencing as part of the consolidation of the value proposition statements in section 5.3.1.2.5.

Table 5-8: BPM Case Studies [Fischer, 2012]

Classification	Value Proposition Identifier	Value Proposition	Example
Sustainability of processes	DD1	Standardisation	Shipping time saving of 30%
	DD2	Compliance	Reduction on expenditure as a result of governance for IT-related products of 95%
	DD3	Re-use as a result of the single truth concept in application life cycle management	Software implementation project 25% faster.
Technology enablement of processes	EE1	Business rules management	Rejection of claims based on business rules increased by 1% resulting in more than £1,65 million saving per annum.
	EE2	Any time, any place, any device process optimisation	Claims processing time reduced from 2 weeks to hours.
	EE3	Process automation (also referred to as process execution or process orchestration)	The number of claims processed per day per clerk increased from 49 claims to 62 claims.
Improvement of processes	FF1	Process intelligence	Monitoring management information helped to manage airport utilisation to run at 98.7% capacity.
	FF2	Process optimisation	Reducing the average time spent on tarmac reduced the fuel usage per departure by 90 litres per aircraft departure.
	FF3	Customer centricity	The on-time departure of flights at the airport increased by 60%-85%.

5.3.1.3.3 Fundamental Needs of Customers

A third reference for value proposition accelerators was work done by Flamend [2012], stating that customers have four fundamental needs, namely:

- Certainty putting guarantees in place for continuity (GG1)
- Performance resulting in the maintenance or improvement of productivity (GG2)
- Financial need to maintain or improve monetary results (GG3)
- Convenience in terms of ease of use or peace of mind for the company or the customers (GG4).

These value proposition statements were labelled with the letters e.g. ‘GG’ for future cross-referencing as part of the consolidation of the value proposition statements in section 5.3.1.3.4.

5.3.1.3.4 Consolidation of BPM Value Propositions

The content of the three sets of accelerators discussed in section 5.3.1.3.1 to 5.3.1.3.3 was consolidated, using synthesis as analysis method, in a list of BPM value propositions, as presented in Table 5-9. Each value proposition is labelled with a ‘VP’ number as identifier in order to cross-reference the specific value proposition in section 5.3.1.4 with the consolidation of the ‘Why’ grouping.

Table 5-9: Consolidation of BPM Value Propositions

ID	Value Proposition	Reference to accelerators
VP1	Certainty: Standardisation (GG1,DD1)	Process standardisation contributes towards predictability.
VP2	Certainty: Compliance (GG1,DD2)	Process compliance from a quality or risk perspective.
VP3	Certainty: Sustainability (GG1,DD3)	The “single truth” concept of process re-use contributes towards sustainability in a world of continuous change.
VP4	Performance: Responsiveness (GG2,AA1,FF2)	Improve efficiency of a process from a time perspective.
VP5	Performance: Productivity (GG2, AA1)	Improve efficiency of a process from a productivity perspective.
VP6	Performance: Measurement (GG2,FF1)	Make the performance of a process visible and measurable through process intelligence enabling informed and timely decision making.
VP7	Performance: Integration (GG2)	End-to-end (E2E) process integration.
VP8	Finance: Revenue up (GG3,BB1)	Increase revenue through process effectiveness, innovation and agility.
VP9	Finance: Cost down (GG3,AA1,FF2)	Increase profit margins through reducing cost associated with a process.
VP10	Customer convenience: Any time, place or device (GG4,EE2)	Design the process to give the customer the ability to access the service at any time, at any place and using any device.

VP11	Customer convenience: Customer centricity (GG4,FF3)	Design the process from the point of view of the customer (Outside-in approach).
VP12	Agility: Business rules management (CC1,EE1)	Provide agility through the explicit specification of business rules, not embedded in the system, enabling the user to change rules without depending on technical developers.
VP13	Agility: Process automation (CC1,EE3)	Automation of a process provides the necessary agility to manage a process across technology enabled activities as well as manual activities.

5.3.1.4 Consolidation of the 'Why' Grouping

As summary of the 'Why' grouping a mapping of the Business Model Rationale, BPM Business Drivers and BPM Value Propositions based on the proposed relationship between the accelerators were derived as part of a two-step approach. The first step was the mapping of the Business Model Rationale with the BPM Business Drivers as reflected in Table 5-10. The second step was the mapping of the combined Business Model Rationale and the BPM Business Drivers to the Value Propositions in Table 5-11. The consolidation exercise was also a quality assurance step for the circular relationship between the Business Model Rationale, the BPM Business Drivers as well as the BPM Value Propositions. There were no entries on the original lists that could not find a place in Table 5-11.

Table 5-10: Consolidated 'Why' Grouping – Business Model Rationale and BPM Business Drivers

Business Model Rationale	BPM Business Driver
Create value through product leadership (BM1)	Innovation, agility and effectiveness (BD7)
Create value through customer intimacy (BM2)	Customer satisfaction (BD1)
Create value through operational excellence(BM3)	Efficiency of processes (BD2)
Create value through operational excellence (BM3)	Process intelligence (BD6)
Growth through coordination and/or partnerships (BM4)	Process integration (BD8.3)
Compliance a prerequisite to create value (BM5)	Reducing risk (BD5)
Compliance a prerequisite to create value (BM5)	Improving quality (BD4)
Create value through a one-time event (BM6) e.g. <ul style="list-style-type: none"> • Merger or acquisition • Transformation 	Process standardisation, variation and integration (BD8)
Create value through technology enablement (BM7)	Enablement with technology (BD3)
Growth through replication (BM8)	Process standardisation (BD8.1)
Growth associated with leveraging economies of scale(BM9)	Process standardisation, variation and integration (BD8.1, BD8.2, BD8.3)

Table 5-11: Consolidated ‘Why’ Grouping

Business Model Rationale	BPM Business Driver	BPM Value Proposition
Create value through product leadership (BM1)	Innovation, agility and effectiveness (BD7)	Finance: Revenue up (VP8)
Create value through customer intimacy (BM2)	Customer satisfaction (BD1)	Customer convenience: Any time, place or device (VP10)
Create value through customer intimacy (BM2)	Customer satisfaction (BD1)	Customer convenience: Customer centricity (VP11)
Create value through operational excellence(BM3)	Effectiveness/Efficiency of processes (BD2)	Performance: Responsiveness (VP4)
Create value through operational excellence (BM3)	Effectiveness/Efficiency of processes (BD2)	Performance: Productivity (VP5)
Create value through operational excellence (BM3)	Effectiveness/Efficiency of processes (BD2)	Finance: Cost down (VP9)
Create value through operational excellence (BM3)	Process intelligence (BD6)	Measurement: Process intelligence for decision making (VP6)
Growth through coordination and/or partnerships (BM4)	Process integration (BD8.3)	Performance: E2E process integration (VP7)
Compliance a prerequisite to create value (BM5)	Reducing risk (BD5)	Certainty: Compliance (VP2)
Compliance a prerequisite to create value (BM5)	Improving quality (BD4)	Certainty: Compliance (VP2)
Create value through a one-time event (BM6) e.g. <ul style="list-style-type: none"> • Merger or acquisition • Transformation 	Process standardisation, variation and integration (BD8)	Certainty: Standardisation (VP1) Certainty: Sustainability (VP3)
Create value through technology enablement (BM7)	Enablement with technology (BD3)	Agility: Business rules management (VP12) Agility: Process automation (VP13)
Growth through replication (BM8)	Process standardisation (BD8.1)	Certainty: Standardisation (VP1)
Growth associated with leveraging economies of scale(BM9)	Process standardisation, variation and integration (BD8)	Certainty: Standardisation (VP1) Performance: E2E process integration (VP7)

5.3.1.5 Industry Solutions Grouping - Methods

The intention is to present the BPM method related Industry Solutions, building block 4 (Figure 5-7), as highlighted in Figure 5-12, based on ease of use and affordability. Two methods and one process reference model, available to the SME manager at no additional cost, were considered as accelerators. For a BPM approach the methods positioned as part of industry solutions were Lean-SixSigma [George, 2002] and Outside-In [Towers, 2010]. For the process reference the APQC Process Classification Framework [APQC, 2014] was considered.

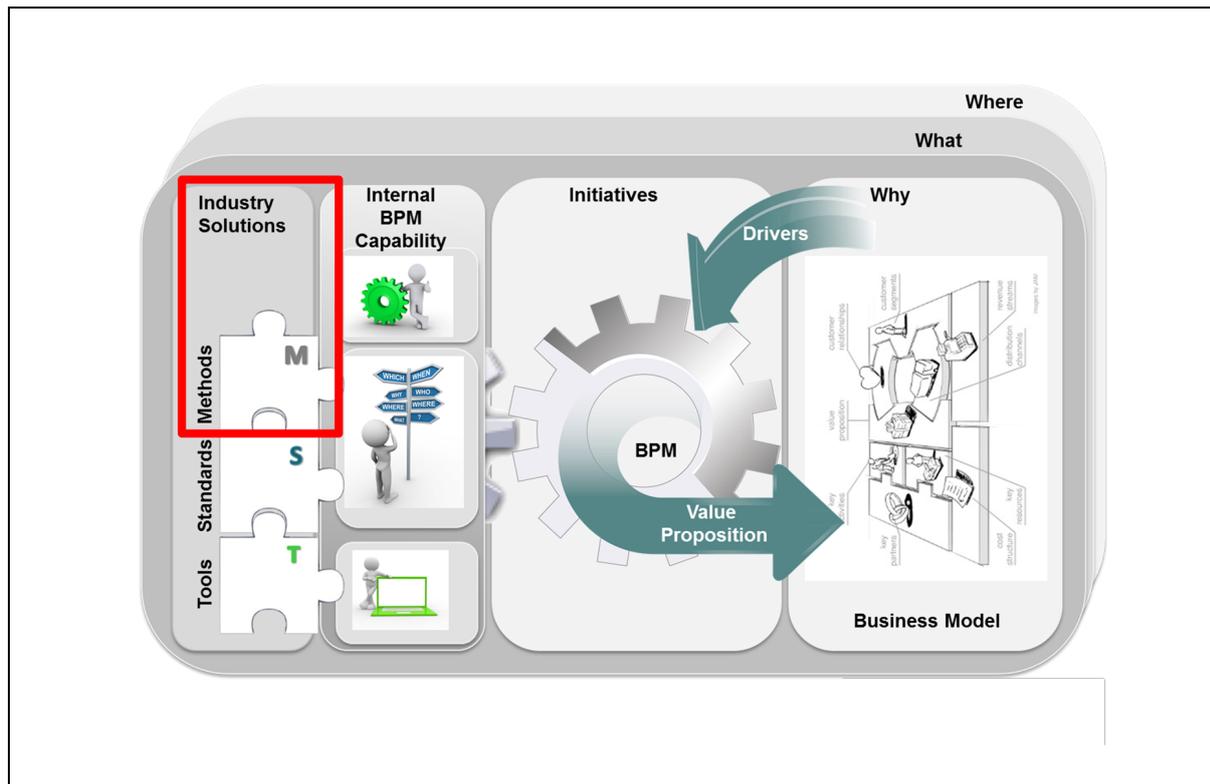


Figure 5-12: Methods as part of Industry Solutions

5.3.1.5.1 Lean-SixSigma as BPM Method

In order to get a better understanding of Lean-SixSigma the definition of SixSigma, Lean and Lean-SixSigma were reviewed [George, 2002, 2004; GoLeanSixSigma, 2014] resulting in the following definitions:

- Six-Sigma, Lean and Lean-SixSigma are sets of techniques and tools for process improvement.
- SixSigma seeks to improve the quality of process outputs by identifying and removing the causes of defects (errors) and minimising variability in manufacturing and business processes.
- Lean manufacturing is a production philosophy that considers the expenditure of resources in any aspect other than the direct creation of value for the end customer to be wasteful, and thus a target for

elimination. Working from the perspective of the client who consumes a product or service, 'value' is any action or process that a customer would be willing to pay for.

- Lean-SixSigma is a managerial concept combining Lean manufacturing and SixSigma, that results in the elimination of the eight kinds of waste, namely defects, overproduction, waiting, non-utilised talent, transportation, inventory, motion and extra-processing (abbreviated as 'DOWNTIME').
- The method used with Lean-SixSigma is known as DMAIC (an abbreviation for Define, Measure, Analyse, Improve and Control). DMAIC refers to a data-driven improvement cycle used for improving, optimising and stabilising business processes and designs.
- The DOWNTIME elements to eliminate waste are defined as follows:
 - Defects are associated with efforts caused by rework, scrap and incorrect information.
 - Overproduction refers to production that is more than needed or occurs before it is needed.
 - Waiting refers to wasted time as a result of waiting for the next step in a process.
 - Non-utilised talent is associated with underutilising people's talents, skills and knowledge.
 - Transportation is the unnecessary movement of products and materials.
 - Inventory refers to excess products and materials not being processed.
 - Motion is any unnecessary movement- by people for example walking.
 - Extra-processing refers to more work or work of higher quality than is required by the customer.

For the SME manager who would like to apply this managerial concept, online training material is available at no cost for the initial certification level. There is, however, a fee involved in taking the certification examination [GoLeanSixSigma, 2014].

5.3.1.5.2 Outside-In Approach as BPM Method

Because of the high interest in the customer experience the second method to be considered was the Outside-In approach by Towers [2010], highlighting the importance of the customer and the concept of the 'Triple Crown':

- Outside-In offers the opportunity to radically rethink the way we run our organisations by going far beyond traditional approaches, such as Lean-Six Sigma, focusing on aligning all the work we do with the reason why the company exists, namely the customer.
- The Outside-In techniques analyse the customer experience from the customer perspective or from 'Outside-In', and this helps to identify opportunities for businesses to significantly reduce costs, increase revenue and enhance service, a combination known as the 'Triple Crown'.

Material offering familiarity with the Outside-In method is available on the Internet at no additional cost and would enable the SME Manager to benefit from this technique [Ohtonen, 2013].

5.3.1.5.3 APQC Reference Model as Accelerator

Another industry solution accelerator that was considered as part of the development of the BPM CanvasTM Framework was business process models that are available for re-use. It is important to

differentiate between business models as discussed in section 5.3.1.1 and business process reference models consisting of predefined business processes. Key features of business process reference models are reference to best practices, reusability related to both adaptability and extendibility and standardisation of business processes [Jacobs, 2008].

The value of business process reference models is summarised as savings of time and costs and an increase in the quality of the processes [Lang, Glunde, & Bodendorf, 1997]. A business process reference model serves as a reference point for transferring lessons learned and establishes a common terminology and business process understanding. A well-known framework is the APQC PCF [APQC, 2014]. It is possible to download the APQC Process Classification Frameworks for a wide range of industries at no cost.

5.3.1.6 Industry Solutions Grouping - Standards

This section describes BPM-related standards, building block 5 (Figure 5-7), as part of the Industry Solutions of the BPM CanvasTM Framework as highlighted in Figure 5-13. An important standard to consider as part of BPM is the notation used to model business process.

Most approaches to business process modelling focus on some sort of business process diagram, which shows how activities are coordinated in the course of a business process. The key elements of a business process diagram include activities and activity connectors. In addition, there are usually ways to represent decision points, and ways to express various activity coordination patterns, such as sequential flow, branching and parallel execution. Some techniques introduce swim-lanes to indicate the responsibilities of participants, such as departments or individuals, thus representing the activities these actors perform in the context of the business process [Jacobs, 2008].

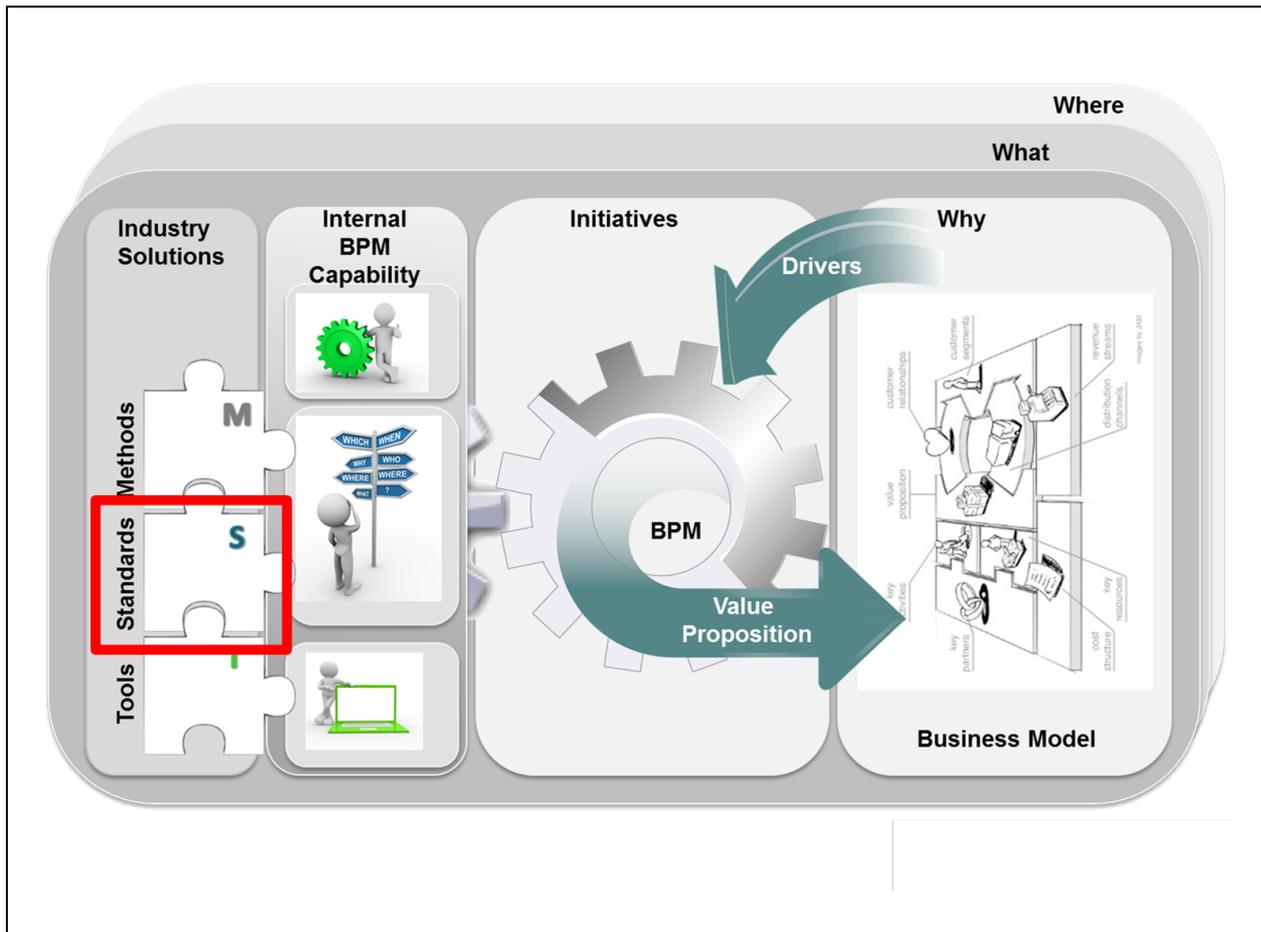


Figure 5-13: Standards as part of Industry Solutions

The business process modelling notation widely accepted as standard in the industry is known as the Business Process Model and Notation (BPMN) [Debevoise & Geneva, 2011; Silver, 2011]. The BPMN standard enables to understand their internal business processes in graphical notation, and it also enables organisations to communicate these processes in a standard manner. Furthermore, the graphic notation facilitates the understanding of the performance collaborations and business transactions between organisations. This ensures that businesses understand themselves and the participants in their business and it enables organisations to adjust swiftly to new internal and business-to-business collaboration [Object Management Group, 2015].

5.3.1.7 Industry Solutions Grouping - Tools

The BPM Tools, building block 6 (Figure 5-7) of the Industry Solutions Grouping is highlighted in Figure 5-14. The intention was to position the various categories of BPM related tools in such a way to help the SME manager to understand the BPM tool landscape.

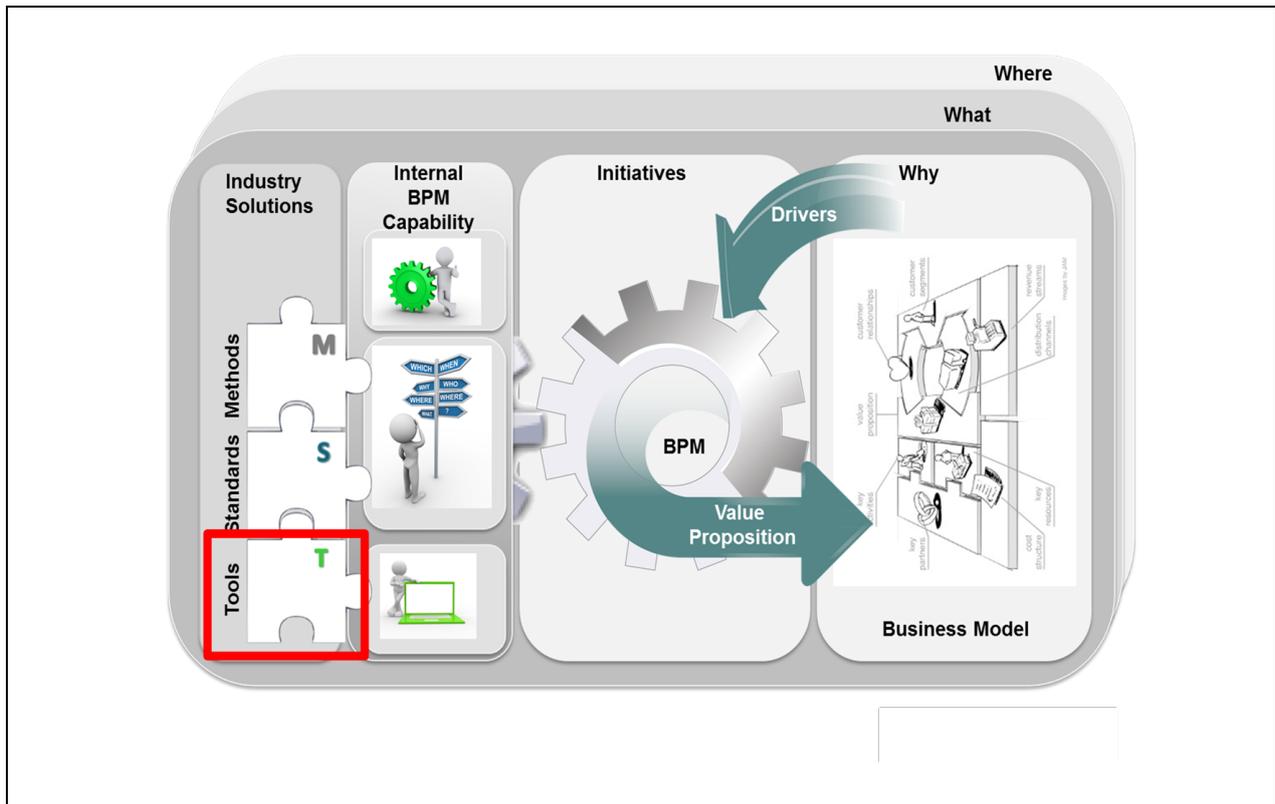


Figure 5-14: Tools as part of Industry Solutions

As part of a framework for the establishment of a BPM centre of excellence, Jesus, Macieira, Karrer, and Rosemann [2009] list the following technologies playing a role in BPM:

- *Workflow*: A workflow management system is a software system for the set-up, performance and monitoring of a defined sequence of tasks, arranged as a workflow.
- *Business intelligence* (BI): BI tools are a type of application software designed to retrieve, analyse, transform and report data for business intelligence. The tools generally read data that has previously been stored [Immanuel, 2012].
- *Simulation*: Simulation is the imitation of the operation of a real-world process or system over time. The act of simulating something requires first that a model be developed. This model should represent the key characteristics or behaviours/functions of the selected process.
- *Service-oriented architecture* (SOA): SOA is an architectural pattern in which application components provide services to other components via a communications protocol, typically over a network.
- *Business activity monitoring* (BAM): BAM describes the processes and technologies that enhance situation awareness and enable the analysis of critical business performance indicators based on real-time data. BAM is used to improve the speed and effectiveness of business operations by keeping track of what is happening and making issues visible quickly.

- *Business Rule Management System (BRMS)*: BRMS is a software system used to define, deploy, execute, monitor and maintain the variety and complexity of decision logic that is used by operational systems within an organisation or enterprise. This logic, also referred to as business rules, includes policies, requirements, and conditional statements that are used to determine the tactical actions that take place in applications and systems.
- *Enterprise Content Management (ECM) or Document Management System (DMS)*: ECM or DMS is a formalised means of organising and storing an organisation's documents and other content that relate to the organisation's processes.
- *Complex event processing (CEP)*: CEP is event processing that combines data from multiple sources to infer events or patterns that suggest more complicated circumstances. The goal of complex event processing is to identify meaningful events (such as opportunities or threats) and respond to them as quickly as possible.

The focus group sessions with the senior BPM consultants of Company SME X added the following categories of tools to the list, based on practitioner experience:

- *Business Process Analysis*: Gartner [Norton, 2011] defines business process analysis (BPA) as the business modelling space in which business professionals and IT analysts collaborate on business architecture, transformation and improvement, including process analysis and design, to support business process improvement initiatives. Business process analysis tools are used by analysts and designers to capture the details of the business process, ensuring that process flows improve the quality of the requirement as well as the alignment of IT efforts with business initiatives.
- *Enterprise architecture*: Enterprise architecture brings together information from a variety of enterprise architecture domains such as application architecture, data architecture (structured and unstructured), technology architecture, business architecture and organisation architecture and it relates this content to the business strategy and to various environmental trends [Handler & Wilson, 2009].
- *Business process management suite (BPMS)*: A BPMS is an integrated collection of software technologies that enables process transparency, and hence better management of the business process, as well as management of work in the process. BPMSes use explicit process models to coordinate the interactions among people, systems and information as equally important aspects of work. This model-driven approach loosely couples the physical resources used at execution time with the design of the process to increase flexibility. At runtime, the BPM engine (i.e., a process execution and state management engine) acts as an overarching orchestrator, coordinating the end-to-end processes and including all resources involved, human and machine, regardless of whether software resources are created in the BPMS's design environment or on other platforms [Sinur & Hill, 2010].

From an SME resource poverty perspective the initial focus would typically be limited to the more affordable tools such as business analysis tools, business intelligence tools or enterprise content management tools. The industry provides products per category. For the purpose of the development of

the BPM Canvas™ Framework, the intention was only to provide one or two examples of products per category. Considering the reality of SME resource poverty, products on the entry level from a cost perspective were selected. It is important to note that the list was not compiled on the basis of a full evaluation of all products available in the market.

Table 5-12: BPM Technology Products for SMEs

Technology Product per Tool Category	Product for FREE (but with limitations)
Business analysis tool	Bizagi [Bizagi, 2002]
Business intelligence tool	ARIS Mashzone [Software AG, 2016]
Enterprise content management	Dropbox [Dropbox, 2016]

5.3.1.8 Internal BPM Capability Grouping - Introduction

The Internal BPM Capability grouping in the BPM Canvas™ consists of the People, Governance and Technology building blocks 7-9 (Figure 5-7) as highlighted in Figure 5-15.

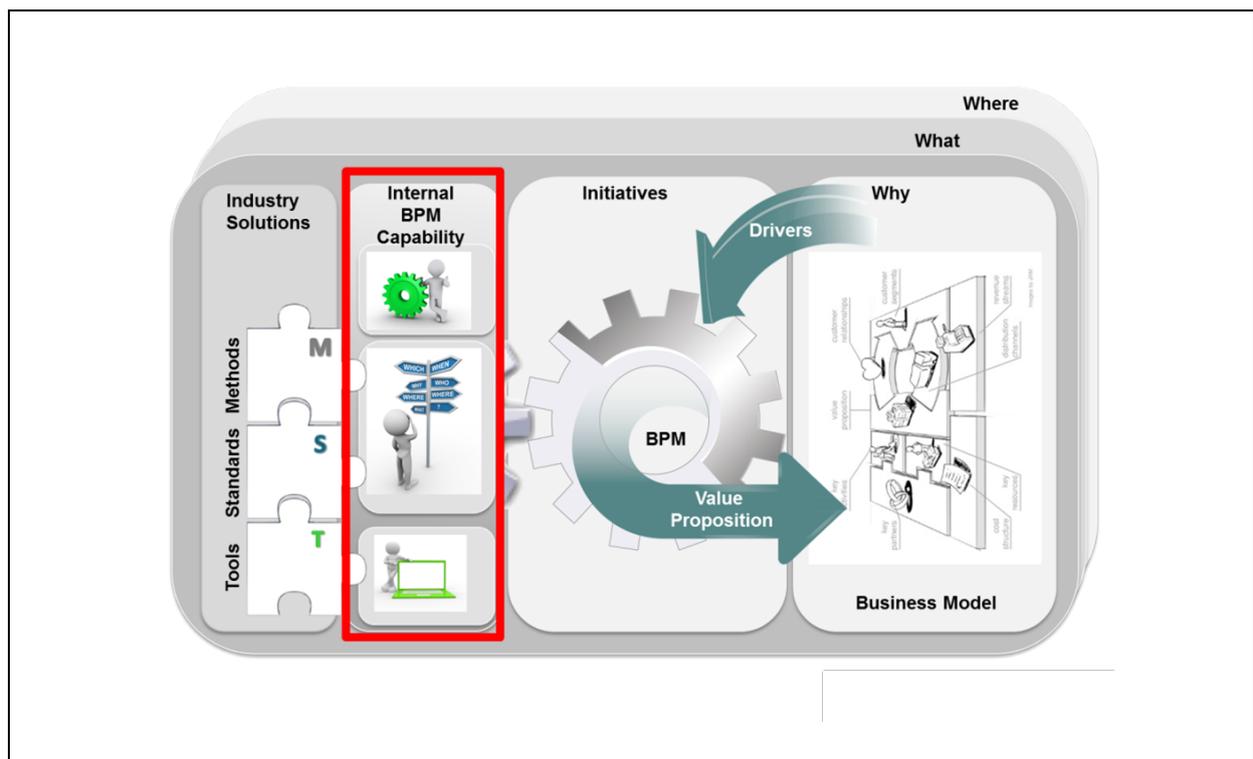


Figure 5-15: Internal Capability

A BPM internal capability is also referred to as a BPM Centre of Excellence (BPM CoE), BPM Group, Process Team, BPM Practice or BPM Office. The BPM internal capability is an important organisational mechanism that has been widely adopted by enterprises aiming at institutionalising BPM initiatives and

perpetuating their benefits throughout the organisation in a more centralised approach. Within the context of the BPM Canvas™ Framework the phrase Internal BPM Capability is used. The ‘Framework for a BPM Centre of Excellence’ [Jesus et al., 2009], included in Figure 5-16 was used as input for the development of the BPM Canvas™ Framework. Together with the framework a capability maturity model [Jesus et al., 2009] was studied, consisting of three capability levels, namely:

- *Capability Level 1:* Diffusion of BPM concepts and benefits. The services and internal processes highlighted in Figure 5-16 are defined as part of the level 1 capability. A brief definition of Capability Level 1 of services and internal processes of the BPM Internal Capability is included in Table 5-13.
- *Capability Level 2:* Creation of convergence among BPM initiatives.
- *Capability Level 3:* BPM strategic alignment and establishing a BPM culture.

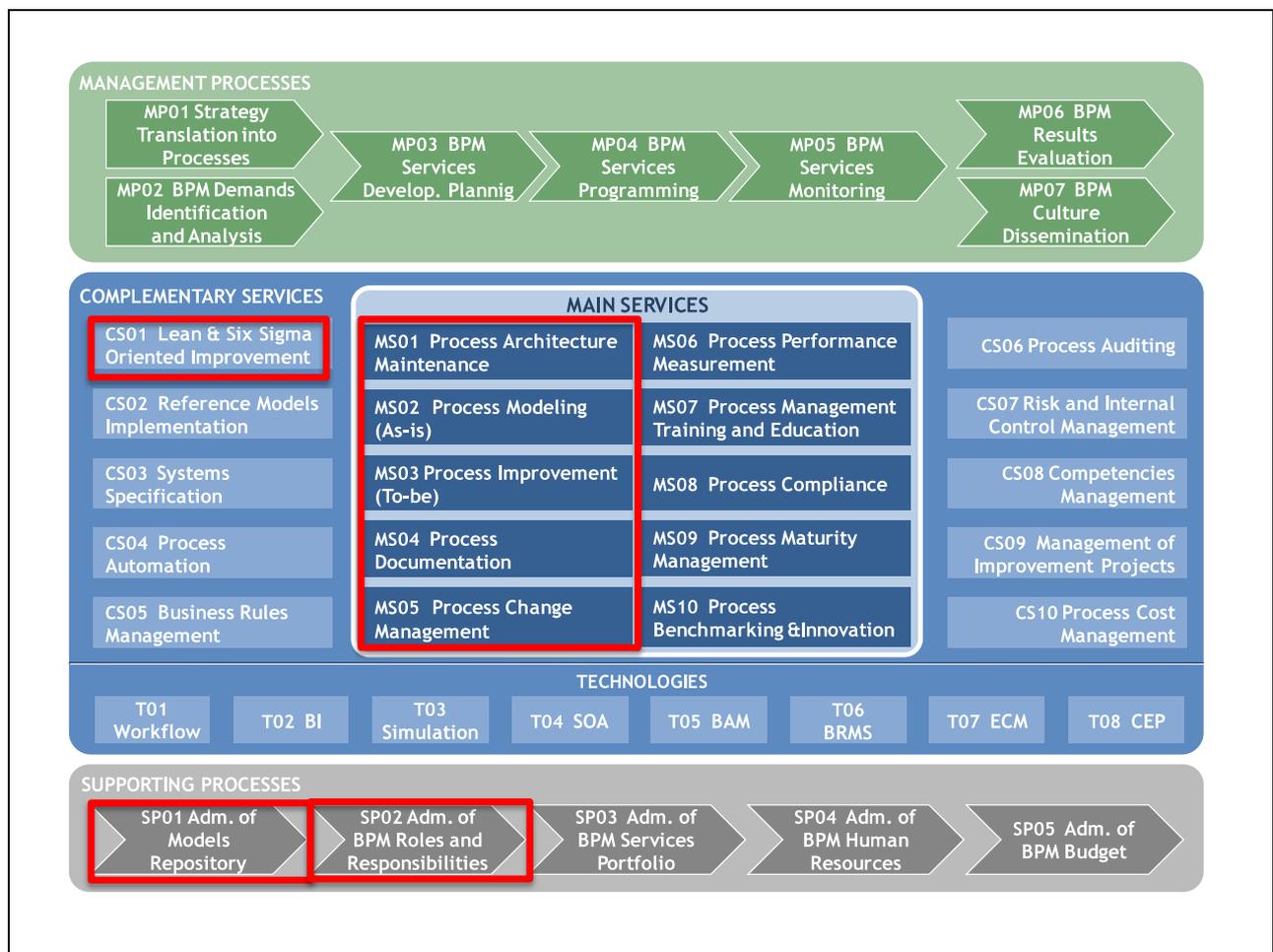


Figure 5-16: Framework for BPM Centre of Excellence [Jesus et al., 2009]

The cross-mapping between Capabilities Level 1 and the sub-components of the Internal BPM Capability of the BPM Canvas™ were grouped per People, Governance™ and Technology component, and is presented in sections 5.3.1.9 to 5.3.1.11.

Table 5-13: Capability Level 1 - Diffusions of BPM Concepts and Benefits [Jesus et al., 2009]

Code	Name	Type	Description
MS01	Process Architecture Maintenance	Main Service	Definition and/or updating of the organisation's value chain and business process architecture that illustrates its mission, vision and main attributes. Dissemination of process-based vision throughout the organisation.
MS02	Process Modelling (As Is)	Main Service	Modelling and/or updating of the way of working is performed. Models usually include activities and events, responsibilities, related systems and documents and are displayed in notations like BPMN, EPC or IDEF. They can also include identification of improvement opportunities.
MS03	Process Improvement (To Be)	Main Service	Redesign of existing processes based on the analysis of improvement opportunities and prioritisation of identified solutions. It can also refer to the design of a new process.
MS04	Process Documentation	Main Service	Creation and/or updating of procedures and manuals that detail process models and can serve as a basis for work execution.
MS05	Process Change Management	Main Service	Definition of an action plan to incorporate improvements in existing processes. Tracking of action plan's status, intermediate results and difficulties.
CS01	Lean & Six Sigma Oriented Improvement	Complementary Service	Improvement initiative focused on process efficiency and productivity increases, mainly based on Lean & Six-Sigma techniques.
SP01	Models Repository Administration	Support Process	Creation and/or maintenance of BPM methodologies and modelling notation. Administration of models repository (backups, access control etc.)
SP02	Administration of BPM Roles and Responsibilities	Support Process	Definition and/or updating of information related to each of the BPM roles and responsibilities (process owners, analysts, specialists, sponsors etc.) according to the organisation's process management model.

5.3.1.9 Internal BPM Capability Grouping - People

The people component included the different roles and responsibilities within the context of the BPM internal capability in a large organisation. The career path and skills development plan is also addressed as part of the BPM internal capability. An important role is the responsibility of the process owner in larger organisations. An example of a specific skill required is the skill to 'think like a customer' if customer focus is part of the business strategy of a company. For the people component, the SME manager should focus on the following service as defined in Table 5-13:

- *SP02 Administration of BPM Roles and Responsibilities*: In the SME context all these roles could be the responsibility of the SME manager or they could be allocated to the different members of the SME management team.

5.3.1.10 Internal BPM Capability Grouping - Governance

Organisations need to create BPM governance mechanisms that can drive BPM actions in a disciplined manner. BPM governance relates to the definition and enforcement of guidelines and rules that drive activities and decisions along the process lifecycle, as well as the consequent definition of responsibilities and accountabilities for BPM actions on project and programme management level. Effective BPM governance has to reinforce the strategic alignment among process management activities and business priorities, clearly define and enforce the accountabilities of each involved stakeholder, and avoid redundancies related to BPM initiatives. Governance includes but is not limited to the definition of the method, the notations, the repository management processes, quality assurance, management of change, the 'single truth' across multiple repositories as well as the process architecture and the catalogues.

Considering Capability Level 1, as listed in Table 5-13, the following areas should be considered by the SME manager:

- MS01 Process Architecture Maintenance
- MS02 Process Modelling (AS IS)
- MS03 Process Improvement (TO BE)
- MS04 Process Documentation
- MS05 Process Change Management
- CS01 Lean-SixSigma Oriented Improvement
- SP01 Models Repository Administration.

The minimum BPM governance to be considered in the SME world is the notation with the recommendation BPMN. BPMN is a basic method of capturing and analysing the information such as the answers to the following questions listed by Snabe et al. [2008]:

- Why is the process performed?
- Which objects are used, modified and produced (created)?
- What kind of technology enables the process execution?
- Which processes precede and follow the process (sequence)?
- Which tasks are needed to ensure compliance?
- Who is responsible for the process?
- How is the process performance measured?
- What rules govern the business process?

5.3.1.11 Internal BPM Capability Grouping - Technology

As discussed in section 5.3.1.7, the initial technology focus is limited to business analysis tools, business intelligence tools and an enterprise content management tool. The Tool building block that is part of the Industry Solution group as discussed in section 5.3.1.7 provides an overview of the categories of products as well as an example of a product available for business analysis, business intelligence and enterprise content management. The Technology building block that is part of the Internal BPM Capability grouping re-uses the categories that are relevant to the SME, with the difference that a specific product is selected per selected category.

5.3.1.12 Initiatives

The Initiatives building block 10 (Figure 5-7) is not part of a grouping. A BPM initiative is the gear that drives the BPM projects. The BPM business drivers, based on the business model needs, are the initiator of a BPM initiative. The internal BPM capability, with the support of the industry solutions, represents the hands doing the work, and value is created by the completion of the BPM initiative, closing the circle to the business model as illustrated in Figure 5-17.

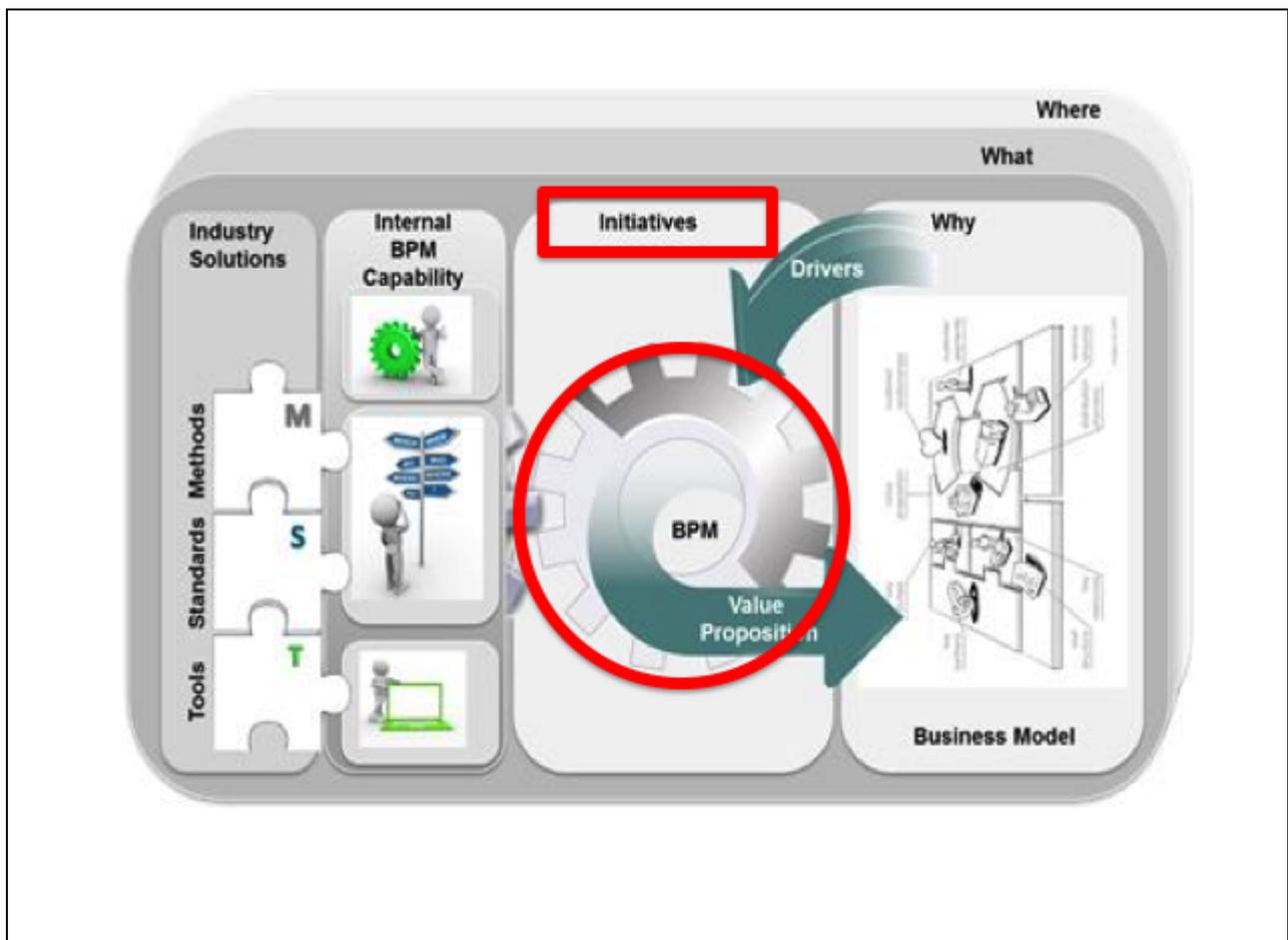


Figure 5-17: Initiatives as part of BPM Canvas™ Framework

One of the criteria for classifying BPM initiatives is the objective of standardisation, alignment or optimisation of such a BPM initiative, with a brief description as follows:

- The standardisation of processes improves the predictability of the outcome of a process by eliminating basic inefficiencies, ensuring consistent execution and clarifying roles.
- The alignment of processes results in the elimination of friction, whether between strategy and processes, processes and governance or legislation, internal processes and external participants in the value chain, or processes and enabling technology.
- The optimisation of processes focuses on improving performance, reducing costs or ensuring customer satisfaction. Measurement is a key element of all optimisation projects.

The SME manager should typically start with the standardisation of processes. In section 5.3.1 Layer 1 of the BPM Canvas™ Framework (Figure 5 6) is described, including the ten building blocks (Figure 5 7) of the BPM Canvas™ Worksheet.

5.3.2 Second Layer of the BPM Canvas™ as Framework

The second layer of the proposed BPM Canvas™ Framework (Figure 5-6) is labelled ‘What’, referring to the pattern concept in the analogy with the Business Model Generation [Osterwalder & Pigneur, 2010]. A pattern according to Osterwalder and Pigneur [2010] is “describing business models with similar characteristics, similar arrangement and building blocks of similar behaviours”. In the context of the BPM Canvas™ Framework a BPM Pattern is describing scenarios with similar ‘Why’ groupings and the ‘Internal Capability’ required to support the ‘Why’ grouping. The BPM Patterns were identified by identification of the similarities in Table 5-11. The BPM Patterns are indicated in Table 5-14. The term ‘BPM Pattern’, within the context of the BPM@SME research, is not a full description of a problem and solution as expected if the term ‘pattern’ is used in a broader context. With reference to the more generic definition of a pattern as a problem and an associated solution, the combination of the Business Model Rationale and the BPM Business Driver are a first step to describe the problem and the content of the ‘BPM Value Proposition’, the ‘People’, the ‘Governance’ (including Standards and Methods) and the ‘Tool’ building blocks are a first step to define a solution.

Table 5-14: List of BPM Patterns

Business Model Rationale	BPM Business Driver	BPM Value Proposition
BPM Pattern 1: Product Leadership Table 5-15		
Create value through product leadership (BM1)	Innovation, agility and effectiveness (BD7)	Finance: Revenue up (VP8)
BPM Pattern 2: Customer Intimacy Table 5-16		
Create value through customer intimacy (BM2)	Customer satisfaction (BD1)	Customer convenience: Any time, place or device (VP10)

Create value through customer intimacy (BM2)	Customer satisfaction (BD1)	Customer convenience: Customer centricity (VP11)
BPM Pattern 3: Operational Excellence Effectiveness and Efficiency Table 5-17		
Create value through operational excellence(BM3)	Effectiveness/Efficiency of processes (BD2)	Performance: Responsiveness (VP4)
Create value through operational excellence (BM3)	Effectiveness/Efficiency of processes (BD2)	Performance: Productivity (VP5)
Create value through operational excellence (BM3)	Effectiveness/Efficiency of processes (BD2)	Finance: Cost down (VP9)
BPM Pattern 4: Operational Excellence Process Intelligence Table 5-18		
Create value through operational excellence (BM3)	Process intelligence (BD6)	Measurement: Process intelligence for decision making (VP6)
BPM Pattern 8: Growth through Coordination Table 5-22		
Growth through coordination and/or partnerships (BM4)	Process integration (BD8.3)	Performance: E2E process integration (VP7)
BPM Pattern 5: Compliance Table 5-19		
Compliance a prerequisite to create value (BM5)	Reducing risk (BD5)	Certainty: Compliance (VP2)
Compliance a prerequisite to create value (BM5)	Improving quality (BD4)	Certainty: Compliance (VP2)
BPM Pattern 6: One Time Event (Merger/Acquisition/Transformation) Table 5-20		
Create value through a one-time event (BM6) e.g. <ul style="list-style-type: none"> • Merger or acquisition • Transformation 	Process standardisation, variation and integration (BD8)	Certainty: Standardisation (VP1) Certainty: Sustainability (VP3)
BPM Pattern 10: Technology Enablement Table 5-24		
Create value through technology enablement (BM7)	Enablement with technology (BD3)	Agility: Business rules management (VP12) Agility: Process automation (VP13)
BPM Pattern 7: Growth through Replication Table 5-21		
Growth through replication (BM8)	Process standardisation (BD8.1)	Certainty: Standardisation (VP1)
BPM Pattern 9: Leveraging Economies of Scale Table 5-23		
Growth associated with leveraging economies of scale(BM9)	Process standardisation, variation and integration (BD8)	Certainty: Standardisation (VP1) Performance: E2E process integration (VP7)

The proposed re-usable BPM Patterns are presented in Table 5-15 to Table 5-24. Note that only the unique content are included in the BPM Pattern to highlight the differentiators per pattern.

In order to eliminate duplication the content of the Method and Standards building blocks have been incorporated into the content of the Governance building block. The selected methods and standards from industry become the governance within the internal BPM capability. The content of the Tool building block is combined with that of the Technology building block. For the reusable BPM Patterns the class of tool is mentioned, and not the specific product name, to allow for generic reuse of the content.

Table 5-15: Product Leadership BPM Pattern

BPM Pattern 1 – Product Leadership		
Business Model Rationale Create value through product leadership (BM1)	BPM Drivers Innovation, agility and process effectiveness (BD7)	BPM Value Proposition Finance revenue up (VP8)
People Team consisting of <ul style="list-style-type: none"> • Business expert • Business analysts • Solution developer 	Governance Method: Agile approach	Technology/Tool For BPM related product leadership: <ul style="list-style-type: none"> • Business rule engine • Business process management suite (BPMS)

Table 5-16: Customer Intimacy BPM Pattern

BPM Pattern 2 – Customer Intimacy		
Business Model Rationale Create value through customer intimacy (BM2)	BPM Drivers Customer satisfaction (BD1)	BPM Value Proposition Customer convenience: <ul style="list-style-type: none"> • Customer service at any time or place or on any device (VP10) • Customer centricity (VP11)
People Think like a customer	Governance Method: Outside-In method	Technology/Tool <ul style="list-style-type: none"> • Business analysis tool • Business intelligence tool (Dashboard)

Table 5-17: Operational Excellence Effectiveness/Efficiency - BPM Pattern

BPM Pattern 3 – Operational Excellence /Efficiency		
Business Model Rationale Create value through operational excellence (BM3)	BPM Drivers Effectiveness/Efficiency of processes (BD2)	BPM Value Proposition <ul style="list-style-type: none"> • Performance: responsiveness (VP4) • Performance: productivity (VP5) • Finance: cost down (VP9)

People Business analysts	Governance Method: Lean-SixSigma	Technology/Tool Business analysis tool
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Table 5-18: Operational Excellence Process Intelligence – BPM Pattern

BPM Pattern 4 – Operational Excellence Process Intelligence		
Business Model Rationale Create value through operational excellence (BM3)	BPM Drivers Process Intelligence (BD6)	BPM Value Proposition Performance measurement: Process intelligence for decision making (VP6)
People Specific skills: <ul style="list-style-type: none"> • Analytics • Measurement 	Governance Define Key Performance Indicator (KPI) per process.	Technology/Tool Business intelligence tool (Dashboard)

Table 5-19: Compliance – BPM Pattern

BPM Pattern 5 - Compliance		
Business Model Rationale Compliance a prerequisite to create value (BM5)	BPM Drivers <ul style="list-style-type: none"> • Improving quality (BD4) • Reducing risk (BD5) 	BPM Value Proposition Certainty: compliance (VP2)
People Governance, risk and compliance role	Governance <ul style="list-style-type: none"> • Legislation compliance • Quality compliance • Risk mitigation • Include control activities • Measure compliance 	Technology/Tool <ul style="list-style-type: none"> • Business analysis tool • Business intelligence tools • Enterprise content management tool (document management tool)

Table 5-20: One Time Event (Merger/Acquisition/Transformation) - BPM Pattern

BPM Pattern 6 – One Time Event (Merger/Acquisition/Transformation)		
Business Model Rationale Create value through a one-time event e.g. <ul style="list-style-type: none"> • Merger or acquisition • Transformation (BM6) 	BPM Drivers Process standardisation, variation and integration (BD8)	BPM Value Proposition <ul style="list-style-type: none"> • Certainty: standardisation (VP1) • Certainty: sustainability (VP3)
People <ul style="list-style-type: none"> • Design authority • Catalogue owners 	Governance <ul style="list-style-type: none"> • One logical repository • Change management process 	Technology/Tool Business analysis tool

Table 5-21: Growth through Replication - BPM Pattern

BPM Pattern 7 – Growth through Replication		
Business Model Rationale Growth through replication (BM8)	BPM Drivers Process standardisation (BD8.1)	BPM Value Proposition Certainty: Standardisation (VP1)
People Business analyst	Governance Standardise processes	Technology/Tool Business analysis tool

Table 5-22: Growth through Coordination - BPM Pattern

BPM Pattern8 – Growth through Coordination		
Business Model Rationale Growth through coordination and/or partnerships (BM4)	BPM Drivers Process integration (BD8.3)	BPM Value Proposition Performance: E2E process integration (VP7)
People Business analyst	Governance Integrate data	Technology/Tool Business analysis tool

Table 5-23: Leveraging Economies of Scale - BPM Pattern

BPM Pattern 9 – Leveraging Economies of Scale		
Business Model Rationale Growth associated with leveraging economies of scale (BM9)	BPM Drivers Process standardisation, variation and integration (BD8)	BPM Value Proposition <ul style="list-style-type: none"> • Certainty: standardisation (VP1) • Performance: E2E process integration (VP7)
People Design authority	Governance Unification (standardisation and integration)	Technology/Tool <ul style="list-style-type: none"> • Business analysis tool • Enterprise content management tool

Table 5-24: Technology Enablement - BPM Pattern

BPM Pattern 10 – Technology Enablement		
Business Model Rationale Create value through technology enablement (BM7)	BPM Drivers Process enablement with technology (BD3)	BPM Value Proposition Agility: Business Rule Management (VP12) Agility: Process Automation (VP13)
People Delegation of authority	Governance Manage business rules	Technology/Tool <ul style="list-style-type: none"> • Business rule engine • Business process management suite (BPMS)

The use of these reusable BPM Patterns as accelerators to complete the BPM Canvas™ Worksheet for a business entity is discussed in section 5.4 as part of the discussion of the WIN Approach. During the development phase of Research Sub-Cycle 2, the circumscription was that the suggested BPM Canvas™ Framework was not the answer to the SME resource poverty problem, but these ten reusable BPM Patterns, based on applying the BPM Canvas™ Framework, became input towards further research sub-cycles of the BPM@SME study.

5.3.3 Third Layer of the BPM Canvas™ as Framework

The third layer of the proposed BPM Canvas™ Framework (Figure 5-6) refers to the evolving model concept in the analogy with *Business Model Generation* [Osterwalder & Pigneur, 2010]. The term ‘Where’ refers to where a business entity finds itself on the BPM journey towards maturity. In the ‘Where’ filing cabinet BPM Canvas™ worksheets, as illustrated in Figure 5-18, are available to reflect the current and one or more projected BPM environments, with a projection for the next budget period.

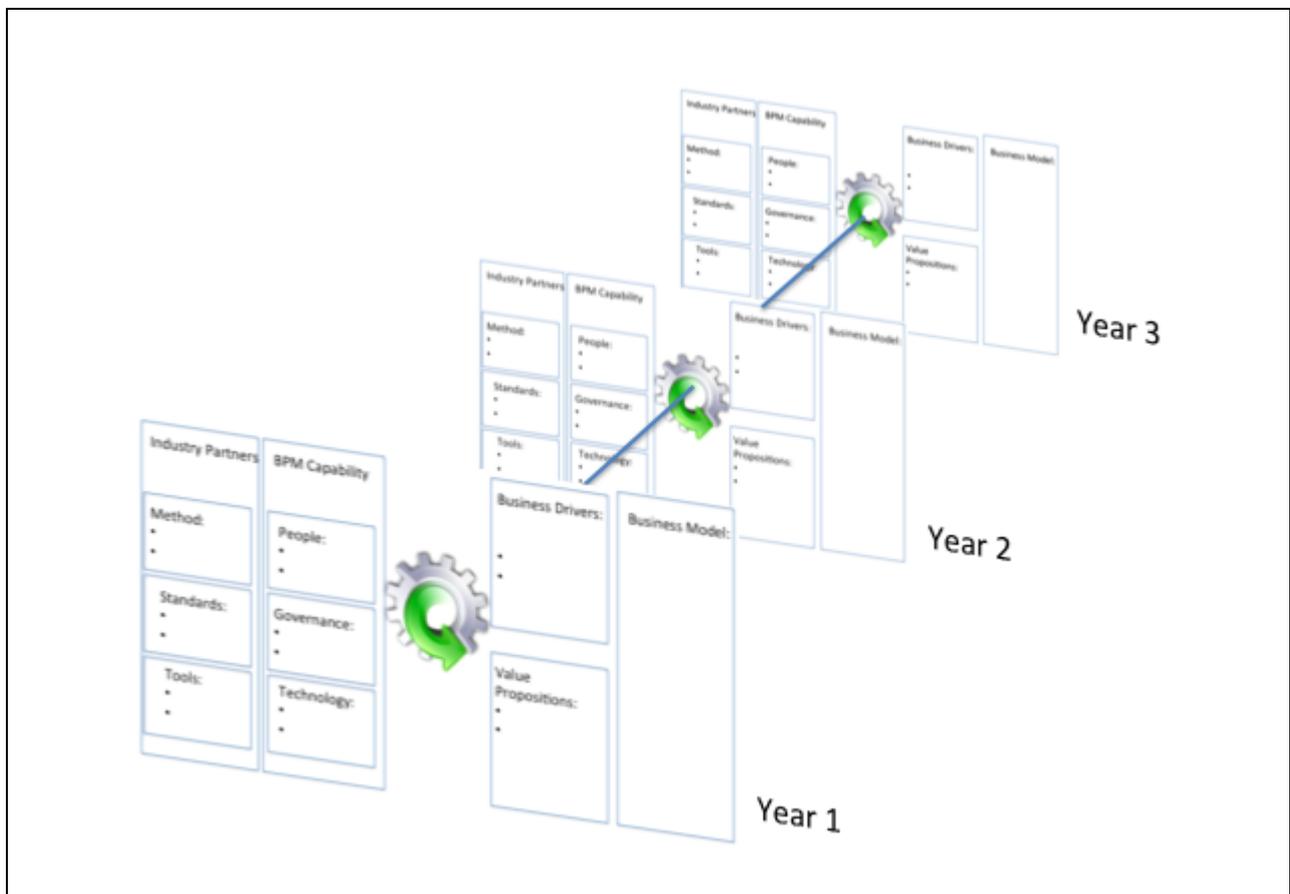


Figure 5-18: 'Where' Filing Cabinet

A maturity assessment instrument is incorporated into the BPM Canvas™ Framework. To assess the readiness of the enterprise for high performance and to determine the maturity per business process the

work by Hammer [2007] is used, also known as the Process Enterprise Maturity Model (PEMM). The ‘Enterprise Capabilities’ assessment includes the assessment of leadership, culture, expertise and governance. The ‘Process Enablers’ assessment includes the assessment of the process design, process metrics, performers, owner and infrastructure. The PEMM assessment sheets are included in the article by Hammer [2007].

Figure 5-19 and Figure 5-20 are examples of the outcome of the PEMM maturity assessment. The green indicate 80% true in the company and the yellow between 20% and 80% true. The red cells indicate less than 20% true.

Enterprise BPM Maturity Assessment														
Level 4														
Level 3														
Level 2														
Level 1														
	Awareness	Alignment	Behaviour	Style	Teamwork	Customer Focus	Responsibility	Attitude towards Change	People	Methodology	Process Model	Accountability	Integration	
	Leadership				Culture				Expertise		Governance			

Figure 5-19: Enterprise BPM Maturity Assessment

Level 4	Red	Red	Red	Red	Red	Red	Red	Green	Red	Red	Red	Red	Red	Red
Level 3	Red	Red	Red	Red	Red	Yellow	Green	Yellow	Red	Red	Red	Red	Red	Red
Level 2	Red	Red	Green	Yellow	Red	Green	Green	Green	Red	Red	Green	Red	Red	Red
Level 1	Yellow	Red	Green	Green	Green	Green	Green	Green	Green	Red	Green	Yellow	Yellow	Red
	Purpose	Context	Documentation	Knowledge	Skills	Behaviour	Identity	Activities	Authority	Information Systems	Human Resource Systems	Definition	User	
	Design			Performers			Owner			Infrastructure		Metrics		

Figure 5-20: Process BPM Maturity Assessment

For the examples included in Figure 5-19 and Figure 5-20 the overall rating for both the process enablers and the enterprise enablers is level 0. The overall rating is determined by the lowest strength per enabler. The red cells in the Level 1 row are an indication that the company has not yet matured to Level 1 from a high-performance perspective.

In order to achieve a Level 1 rating for the Enterprise Enablers given in the example provided in Figure 5-19, the following enablers should be improved to move from red to green:

- Leadership alignment
- Expertise methodology.

Likewise, the following enablers should move from yellow to green:

- Leadership awareness
- Governance accountability
- Governance integration.

In order to achieve a Level 1 rating for the Process Enablers the following enablers should improve from red to green:

- Design context
- Infrastructure information systems.

Likewise, the following enablers should be improved from yellow to green:

- Design purpose
- Metrics definition
- Metrics use.

The PEMM instrument helps a business entity to understand the current level of BPM maturity and the actions required over time to grow to the next level of BPM maturity. As part of the concept of an evolving model, a business entity could prepare more than one BPM Canvas™ Worksheet, each for a specific period. In order to close the gaps identified by the PEMM assessment a business entity would typically incorporate specific BPM initiatives (section 5.3.1.12) in the applicable BPM Canvas™ Worksheet. These BPM initiatives would prepare the business entity to move to the next level of BPM maturity.

In sections 5.3.1 to section 5.3.3 Layers 1 to 3 of the BPM Canvas™ Framework (Figure 5-6) are discussed to complete the description of the BPM Canvas™ Framework. The approach to using the BPM Canvas™ Framework is included in section 5.4.

5.4 Proposed WIN Approach

The proposed approach to applying the BPM Canvas™ Framework, called the WIN Approach, consists of six steps, as illustrated in Figure 5-21. The WIN acronym represents the first letter of the words ‘Why’, ‘What’, ‘Where’ and the first two letters of each of the phrases ‘Initiative’, ‘Internal Capability’ and ‘Industry Solutions’.

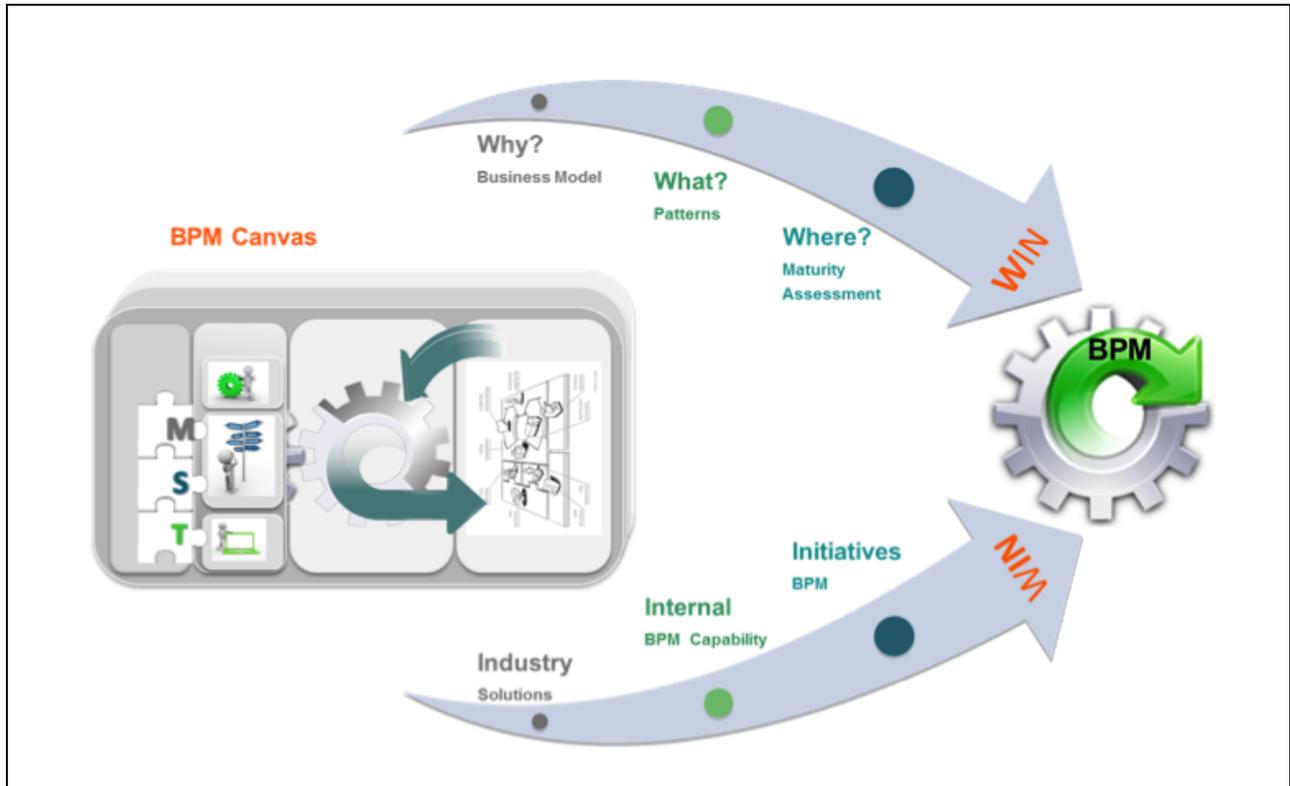


Figure 5-21: Proposed WIN Approach

The WIN Approach is based on visual thinking principles applied in a facilitated workshop environment. The intention is to guide participants applying the BPM Canvas™ Framework towards the first draft of a BPM Roadmap, as well as the knowledge to apply the BPM Canvas™ Framework without further assistance.

The material required to facilitate the workshop is a poster-size BPM Canvas™ Worksheet (see Figure 5-22) for every 4-5 participants and sticky notes. Before each activity, an overview of the topic is given as well as the content of the accelerator per building block as discussed in section 5.3.1 and the sub-sections. For each activity each individual writes their contribution(s) on sticky note(s) and adds it to the BPM Canvas™ Worksheet allocated to the group. Each smaller group consolidates the contributions of the individuals and gives feedback to the larger group. A consolidated answer is then agreed upon for each business entity and added to a BPM Canvas™ Worksheet allocated to the business entity.



Figure 5-22: BPM Canvas™ Worksheet

The proposed steps for the WIN Approach are:

- Step 1 defines the content of the ‘Why’ building blocks including the business model, BPM business drivers and the BPM value propositions. Refer to Table 5-25 for the references to the description as well as a list of suggested content to be used as accelerators per building block.

Table 5-25: Step 1 'Why' Description and Accelerator References

Building Block	Reference to Description	Suggested Content as Accelerator
Business Model	Section 5.3.1.1	Table 5-5
BPM Business Drivers	Section 5.3.1.2	Table 5-6
Value Propositions	Section 5.3.1.3	Table 5-9
Verify completeness and consistency by checking the circular relationship between the business model, BPM business drivers and the value propositions similar to the content in Table 5-11.		

- Step 2 is to learn from the BPM Patterns ‘What’ others are doing as reflected in the reusable BPM Patterns as described in section 5.3.2. The accelerator is the content of Table 5-15 to Table 5-24. The

groups add content as described in the BPM Patterns to their specific BPM Canvas™ Worksheets to ensure completeness.

- Step 3 is to determine ‘Where’ the business entity is in terms of the BPM maturity level and ‘Where’ the business entity would like to be over time. The ‘Where’ layer is discussed as part of the third layer of the BPM Canvas™ Framework in section 5.3.3. The participants complete the PEMM assessments [Hammer, 2007] and determine the gaps as illustrated in Figure 5-19 and Figure 5-20. The participants identify and add the BPM initiatives to the ‘Initiative’ space on the BPM Canvas™ Worksheet in order to close the gaps highlighted in the PEMM assessment so as to move to a next level of BPM maturity. An optional step is to move some of the content of the BPM Canvas™ Worksheet per business entity to an additional BPM Canvas™ Worksheet to work towards the evolving model. The first worksheet is then for the next budget period and content parked for the future is added to the second worksheet. Moving content between the sheet for the next budget and the sheet used as parking area for longer term realisation is an iterative process as the participants work through all the steps of the WIN Approach.
- Step 4 focuses on ‘Industry Solutions’ with reference to the definition and the suggested content cross-referenced in Table 5-26.

Table 5-26: Industry Solution References and Accelerators

Building Block	Reference to Description	Suggested Content as Accelerator
Method	Section 5.3.1.5	Lean Six-Sigma Outside-In APQC Reference Models
Standards	Section 5.3.1.6	BPMN
Tools	Section 5.3.1.7	Business Analysis Tools Business Intelligence Tools Enterprise Content Management Tools

- Step 5 is the assessment of the ‘Internal BPM Capability’ and the identification of the content for the ‘People’, ‘Governance’ and ‘Technology’ as discussed in section 5.3.1.8 to section 5.3.1.11. Initiatives identified to establish or mature the ‘Internal BPM Capability’ are added to the ‘Initiative’ space on the BPM Canvas™ Worksheet. A guideline is to define for each category selected in Step 4 for ‘Tools’ the actual product as part of the ‘Technology’ building block.
- Step 6 is to identify and prioritise the ‘Initiatives’, whether motivated by the BPM business drivers or the assessments in Step 3 or Step 5. The listed ‘Initiatives’ are classified as standardisation, alignment or optimisation-oriented as explained in section 5.3.1.12.

An example of the template used to document the BPM Roadmap as outcome of applying the WIN Approach together with the BPM Canvas™ Framework is included in Appendix A .

5.5 Evaluation of the Proposed BPM Canvas™ Framework and the Proposed WIN Approach

The evaluation of Research Sub-Cycle 2 consists of a completeness check between the BPM Canvas™ and the Forrester definition of BPM, included in section 5.5.1, as well as client feedback regarding the value of applying the BPM Canvas™ Framework and the WIN Approach in section 5.5.2.

5.5.1 BPM Canvas™ Framework Comparison with the Forrester BPM Definition

In order to verify the completeness of the BPM Canvas™ Framework with respect to the Forrester definition of BPM used in this thesis, the building blocks of the BPM Canvas™ Worksheet are compared with the phrases used in the Forrester definition of BPM [Miers, 2011]. The result of this comparison is presented in Table 5-27.

Table 5-27: Forrester BPM Definition vs BPM Canvas™ Worksheet

Forrester Definition of BPM [Miers, 2011]	BPM Canvas™ Worksheet with reference to the building blocks in Figure 5-7
Forrester sees BPM as a broad framework of methods, approaches, techniques and technologies that	Building blocks 7, 8 and 9: The ‘Internal BPM Capability’ grouping consisting of the ‘People’, ‘Governance’ and ‘Technology’ building blocks includes the definition of methods, approaches, techniques and technologies as described in sections 5.3.1.8 to 5.3.1.11.
support organisational change, value optimisation and ongoing performance improvement	Building block 2: The ‘BPM Business Drivers’ as part of the ‘Why’ grouping include drivers such as efficiency, effectiveness and process intelligence to measure performance as reflected in Table 5-6.
While some see BPM as a narrow technical approach.	Building blocks 5 and 6: The ‘Tools’ and ‘Standards’ as part of the ‘Industry Solution’ Grouping addresses the technical part as described in section 5.3.1.6 and section 5.3.1.7.
Forrester regards BPM as including a wide range of improvement methods such as Lean and Six-Sigma, along with customer-centric (Outside-In) engagement approaches and organisational change management.	Building block 4: Lean and Six-Sigma and the Outside-In approach are specifically mentioned as ‘Methods’ as part of the ‘Industry Solutions’ grouping in section 5.3.1.5.
Each one of these levers ties back to a flexible and adaptable enterprise architecture that	Building block 8: Enterprise architecture is classified as a method and approaches included as part of ‘Governance’ grouped within the ‘Internal BPM Capability’ grouping in section 5.3.1.10.

implements an evolving business strategy. Such an all-encompassing approach can help focus on strategic priorities	Building block 1; The ‘Business Model’ part of the ‘Why’ grouping addresses the business strategy and strategic priorities as mentioned in section 5.3.1.1.
as well as opportunities to both differentiate the value proposition, and sharpen the competitive edge.	Building block 3: The ‘Value Proposition’ is part of the ‘Why’ grouping with suggested content in Table 5-9.

It is possible to relate all the phrases used in the Forrester definition to a building block of the BPM Canvas™ Worksheet, and vice versa to relate the building blocks 1 to 9 of the BPM Canvas™ Worksheet to a phrase in the Forrester BPM definition [Miers, 2011].

5.5.2 Workshop Evaluation (Client Feedback)

The workshop feedback is based on a number of BPM Canvas™ workshops facilitated for organisations following the WIN Approach as described in section 5.4. The participants in the workshops were from traditional BPM users, thus typically from the corporate world. The rationale was that if the traditional BPM users could benefit from the BPM Canvas™ Framework and WIN Approach it would be valid to abduce that a derived artefact from the BPM Canvas™ Framework would be acceptable to re-use in further research sub-cycles in this BPM@SME study. The expectation was to use the BPM Canvas™ Framework and the WIN Approach as BPM framework for the development of the BPM@SME Approach.

The following workshops were presented to corporate clients during the 2013-2015 period:

- Three workshops with the organisations from the petro-chemical industry
- A workshop with an organisation from the retail industry
- Two workshops with organisations from the banking sector
- A workshop with an organisation from the airline industry
- A workshop with an organisation from the mining industry
- A workshop with an organisation from the global beverage industry.

The following were comments from participants (with the participant’s permission to quote comments) as entered on the workshop evaluation forms:

- *Will endeavour to apply and implement the WIN Approach and the BPM Canvas™ Framework in the workplace. The BPM Canvas™ framework is well structured with stimulation of the thought processes.*
- *Learned a lot and will make use of the knowledge gained from this BPM Canvas™ workshop to continue to prepare a BPM Roadmap. The content shared and WIN Approach followed during the workshop were very insightful and value for money.*

- *I can see how we can use the BPM Canvas™ Framework and the WIN Approach practically and in a beneficial way. Key areas that we need to revisit have been highlighted.*
- *Excellent, great practical theory – food for thought. The BPM Canvas™ Framework and the WIN Approach will be the start of an exciting BPM journey.*
- *Appreciated the healthy mix of theory and case specific discussions.*
- *Very informative, and the application of the WIN Approach to define the content of the BPM Canvas™ Framework was tremendously valuable to the company.*

There are also a second group providing feedback as the BPM Canvas™ Framework and the WIN Approach have been used as part of a BPM course presented in collaboration with Enterprises University of Pretoria [2014] since 2014. More than 100 participants have attended the course, with two days allocated to the BPM Canvas™ Workshop. Although the majority of the participants are from the traditional corporate BPM world, representatives of the SME domain completed the BPM Canvas™ Workshop successfully.

Considering the client feedback the conclusion is that the proposed BPM Canvas™ Framework and the proposed WIN Approach are well accepted in the corporate world and the course presented at Enterprises University of Pretoria [2014] was successfully completed by a number of SME managers.

5.6 Observation and Reflection of the BPM Canvas™ Workshops

The following observations were made while either facilitating the BPM Canvas™ Workshops or presenting the BPM Course [Enterprises University of Pretoria, 2014]:

- An understanding of the business model of a business entity is surprisingly lacking among the resources responsible for BPM within a business entity. The importance of understanding the ‘Why’ grouping of the BPM Canvas™ Framework should not be underestimated. In further research sub-cycles of the BPM@SME study, the focus should remain on creating awareness of the importance of the ‘Why’ as a driver for BPM. In the broader context, the importance of understanding the business model towards BPM success is a topic for further research.
- Similarly to the Business Model Generation [Osterwalder & Pigneur, 2010], the value is in the process followed during the BPM Canvas™ Workshop, the visual thinking, common understanding and the human interaction.
- The participants in the BPM Canvas™ Workshop would prefer to use the consolidated list of BPM business drivers, value propositions and even business models than to work with the initial sources of information.
- The accelerators incorporated into the BPM Canvas™ Framework will continue to grow and mature over time. It requires a fine balance to provide just enough information to prevent information overload.

- The following example is an illustration that the BPM Canvas™ Framework and WIN Approach could successfully be used by SME managers:

As example one of the major value contributions came from one of the BPM course participants from a growing medium sized business entity. The business entity provides training and as part of the diversification programme the traditional classroom-based training, has been extended to provide customised training and also online-courses. For the traditional classroom-based training invoicing is done per participant, with participants paying in advance before the start for the course. In the case of the customised training, the training is developed and presented in multiple sessions at a fixed price. The invoicing of the participants is embedded in a take-off against an overall umbrella contract. For the online courses there is an upfront investment and the return on investment is over time as learners subscribe online for the courses. As part of the assignment, the participant discussed these different business models, together with the reality that the supporting invoicing processes had not been adjusted to make provision for the different business models.

- The client feedback confirmed that the BPM Canvas™ Framework and the WIN Approach add value as BPM framework. Included as part of the BPM Canvas™ Framework is the set of BPM Patterns, describing prominent business problems and BPM solutions. The BPM Canvas™ Framework and the WIN Approach were applied to derive the reusable BPM Patterns.
- The constraint is that the BPM Canvas™ Framework and the WIN Approach require the SME manager to attend a facilitated workshop to master this BPM approach.

As part of the circumscription two options were considered to determine the next research objective and research sub-cycle:

- The one option is to use the full BPM Canvas™ Framework and the WIN Approach focusing on the development of a ‘BPM Roadmap’ and an ‘Internal BPM Capability’, but it is questionable with the SME resource poverty constraint whether this option would create self-sufficiency in using this BPM approach.
- The second option is to refine the BPM Patterns to support the self-sufficiency of the SME manager in using BPM as management approach to support SME growth.

The awareness based on the evaluation of the BPM Canvas™ Framework, specifically the BPM Patterns and the WIN Approach, was that the BPM Patterns is a step towards a BPM approach for SME managers. The challenge was to enrich the BPM Patterns to allow for self-sufficiency of the SME managers.

5.7 Conclusion

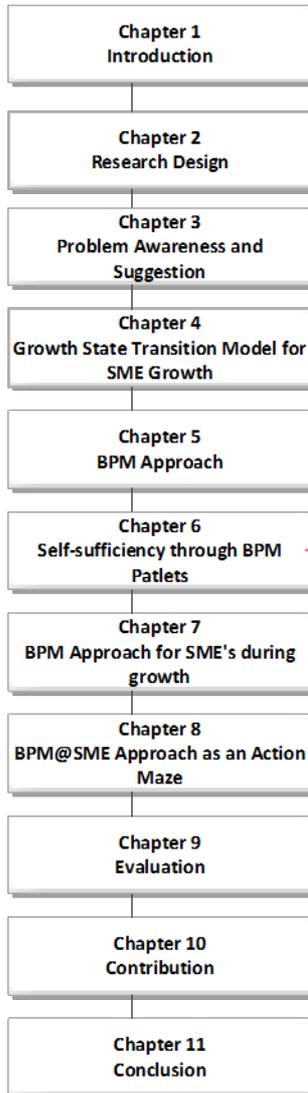
The suggestion to address the lack of a BPM approach was to develop a BPM approach based on an analogy with the *Business Model Generation* book [Osterwalder & Pigneur, 2010]. The criteria for such a BPM approach included sensitivity towards SME resource poverty. The development of the artefact resulted in the BPM Canvas™ Framework and the associated WIN Approach.

Reusable BPM Patterns were derived as part of the development of the BPM CanvasTM Framework. Presenting the two artefacts for scrutiny during the BPM CanvasTM workshop participants, the general feedback was that the BPM CanvasTM Framework and the WIN Approach are a well-defined framework and approach to develop a BPM roadmap. Following abductive reasoning it can therefore be reasoned that the BPM CanvasTM Framework and the WIN Approach are based on recognised BPM concepts, allowing the use of the derived set of reusable BPM Patterns in further research cycles of the BPM@SME research.

During the execution of Research Sub-Cycle 2 the realisation (circumscription) was that SME managers would benefit more from the use of the predefined BPM Patterns a component of the BPM CanvasTM Framework, than using the BPM CanvasTM Framework with the WIN Approach, to derive a BPM roadmap for the specific SME. This led to the awareness that refinement of the set of ten reusable BPM Patterns might be a better solution to address the lack of a BPM approach that is sensitive for SME resource poverty. In Research Sub-Cycle 3 the set of ten BPM Patterns, summarised in section 5.3.2 should be reviewed and enhanced to ensure that the SME manager is self-sufficient in applying the reusable BPM Patterns. The suggestion is that the reusable BPM Patterns should be enriched by BPM design principles as part of the Research Sub-Cycle 3, resulting in BPM Patlets allowing for self-sufficiency of the SME manager.

Chapter 6 : BPM Patlets

Chapter 6 Outline



- 6.1 Introduction
- 6.2 Design Principles
 - 6.2.1 Design Principles by the International Institute of Business Analysis
 - 6.2.2 Design Principles by the ABPMP
 - 6.2.3 Design for Modular and Evolvable Business Processes
 - 6.2.4 Architecture Principles and the Publication of Principles
 - 6.2.5 Enterprise Architecture Patterns
 - 6.2.6 Catalogue of Enterprise Architecture Principles
- 6.3 Consolidated Set of Design Principles
 - 6.3.1 Design Principle Template
 - 6.3.2 Consolidated List of Design Principles
- 6.4 BPM Patlets to Enhance Self-sufficiency of the SME Manager
- 6.5 Expert Opinion as Evaluation
- 6.6 Conclusion

6.1 Introduction

The focus of the research presented in this chapter was to review and extend the reusable BPM Patterns defined in Chapter 5 to ensure self-sufficiency of the SME managers when using the BPM Patterns. With reference to section 3.4, the intention was to address the requirement that the reusable BPM Patterns should be sensitive towards SME resource poverty and the requirement of self-sufficiency of SME managers. The suggestion from Chapter 5 was to add practical design principles to the defined reusable BPM Patterns, as summarised in section 5.3.2, resulting in the proposed BPM Patlets.

It is appropriate to differentiate between the term ‘pattern’, ‘BPM Pattern’, and ‘BPM Patlet’ as used in the BPM@SME research. A ‘pattern’ is a problem and a solution [Baskerville & Pries-Heje, 2010]. As discussed in section 5.3.2 a ‘BPM Pattern’ is based on the concept of similarities. The BPM Patlets is based on the concept of patlets as defined by Coplien and Harrison [2005], namely short summaries of the problem and solution for patterns.

In the BPM@SME research the artefacts that were developed by extending the reusable BPM Patterns with design principles were referred to as BPM Patlets and not patterns. As part of Research Sub-Cycle 3 a BPM Patlet is only a summary of the problem and the solution and not a full description of the problem and the solution as would be expected from a pattern. The development of the BPM Patlets was part of Research Sub-Cycle 3, as illustrated in Figure 6-1. A set or sets of design principles were required to extend the reusable BPM Patterns. A number of design principle sets are presented in section 6.2. The consolidated set of design principles is discussed in section 6.3.

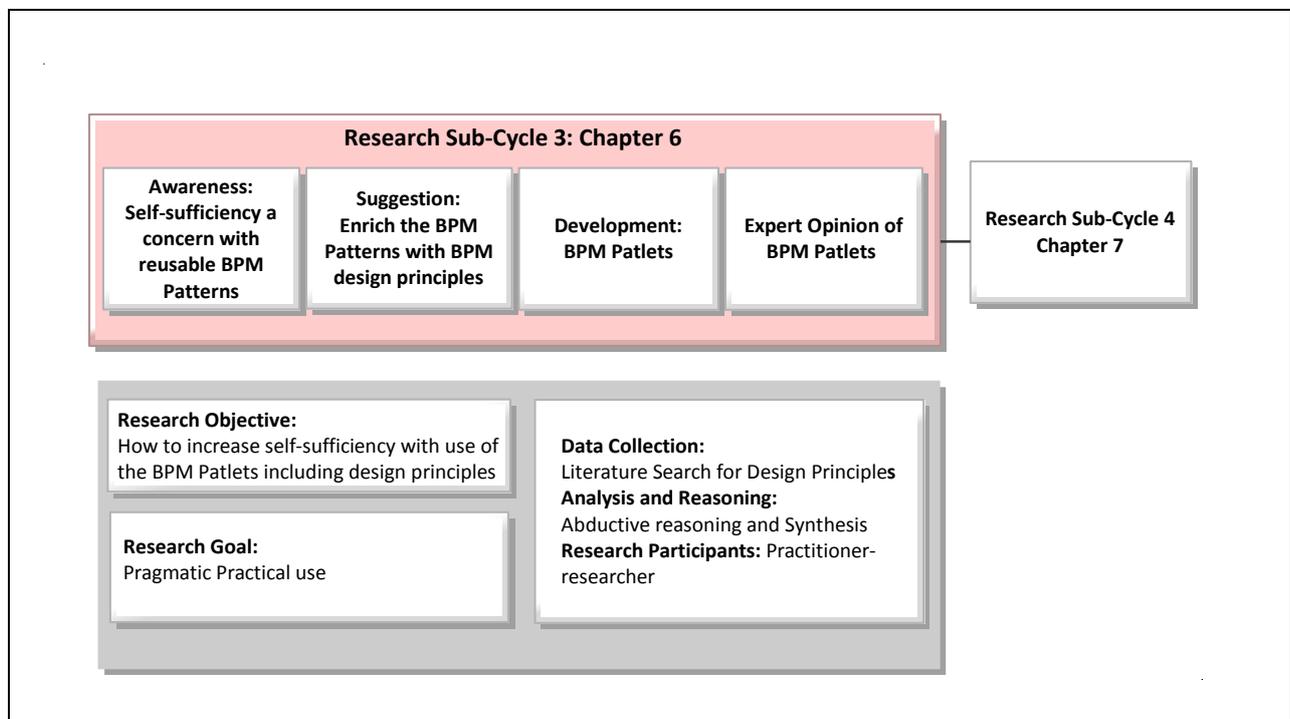


Figure 6-1: Research Sub-Cycle 3

The reasoning followed to cross-reference the consolidated set of design principles with the reusable BPM Patterns defined in section 5.3.2 was based on abductive reasoning. The outcome was a set of proposed BPM Patlets as described in section 6.4.

6.2 Design Principles

In the pursuit of a set of design principles suitable to ensure more self-sufficiency in using the BPM Patlets, the refined set of BPM Patterns discussed in section 5.3.2, a number of references to design principles were considered. The intended audience for the specific set of design principles, the structure used to describe the design principles and examples of the design principles were analysed. The following sets of design principles, considered for supporting the proposed BPM Patlets, are briefly introduced in section 6.2.1 to section 6.2.6:

- The design principles highlighted by the International Institute of Business Analysis in *A Guide to the Business Analysis Body of Knowledge®* (BABOK® Guide) [IIBA, 2015]
- The design principles highlighted by the Association of Business Process Management Professionals in the Common Body of Knowledge [ABPMP, 2013].
- Design principles for modular and evolvable business processes by Van Nuffel [2011].
- Architecture principles and the publication of architecture by Hoogervorst [2011].
- Enterprise architecture patterns from Perroud and Inversini [2013].
- The catalogue of enterprise architecture principles by Greefhorst and Proper [2011].

6.2.1 Design Principles of the International Institute of Business Analysis

The Guide to the Business Analysis Body of Knowledge® (BABOK® Guide) by the International Institute of Business Analysis (IIBA) [IIBA, 2015] focuses specifically on the transfer of knowledge to business analysts. Although the content is therefore not packaged to support an SME manager it was nevertheless reviewed with a view to guiding the development of the BPM Patlets.

As part of the positioning of the third version of BABOK®, the inclusion of design, not previously addressed, was highlighted. However, although a number of opportunities to improve the operation of a business are listed, the design principles are only described by a statement and a rationale. Examples of such opportunities include:

- *Increase efficiencies*: Simplify the work people perform by re-engineering or sharing processes, changing responsibilities or considering business process outsourcing.
- *Automate the work people perform*: Relatively simple tasks, where decisions are made on the basis of strict or inflexible rules, are prime candidates for automation. Automation may also increase consistency of behaviour, reducing the likelihood of different stakeholders performing the same function in distinctly different fashions.

- *Increase consistency of behaviour*: Different workers may handle similar cases in a very different fashion, causing customer dissatisfaction and frustration.
- *Improve access to information*: Provide greater amounts of information to staff that interface directly or indirectly with customers, thereby reducing the need for specialists. Decision makers may not require this level of detail, but should be made aware of where and from whom they may get it, if required. Normally, decision makers need to be provided with the meaning and relevance of the data acquired and used by operational personnel.
- *Identify additional capabilities*: Highlight capabilities that have the potential to provide future value and can be supported by the solution being designed.
- *Reduce complexity of interfaces*: Interfaces are needed whenever work is transferred between systems or between people. Reducing their complexity can improve understanding.
- *Eliminate redundancy*: Different stakeholder groups may have common needs that can be met with a single solution, reducing the cost of implementation.
- *Avoid waste*: The aim of avoiding waste is to completely remove those activities that do not add value and to minimise those activities that do not contribute directly to the final product directly.

After analysis of BABOK®, the following principles were identified for consideration with the development of the proposed BPM Patlets. The principles are labelled with an identifier starting with the letter 'B' (for BABOK®):

- Change (or clarify) responsibilities (B1).
- Increase consistency of behaviour through automation (B2).
- Increase consistency of behaviour through standardisation (B3).
- Improve access to information by customer facing staff (B4).
- Ensure decision makers have access to information with an understanding of the meaning and relevance of the information (B5).
- Understand the capabilities offered by solutions that are available for the SME (B6).
- Reduce complexity whenever work is transferred between systems or between people or between systems and people (B7).
- Remove activities that do not add value (B8).
- Minimise activities that do not contribute directly to the final product directly (B9).

6.2.2 Design Principles of the ABPMP

The design principles highlighted by the Association of Business Process Management Professionals (ABPMP) in the Common Body of Knowledge, referred to as BPM CBOK [ABPMP, 2013], focus specifically on the transfer of knowledge to business process management professionals. The design principles are, however, only described in a short statement.

Although the content of BPM CBOK is therefore not packaged to support an SME manager the content was reviewed for guiding the development of the design of the BPM Patlets. After analysis of BPM CBOK, the following principles were identified for consideration in the development of the proposed BPM Patlets. The principles are labelled with an identifier starting with the letter 'C' (for CBOK):

- Design around value-adding activities (C1).
- Minimise handoffs (C2).
- Work is performed where it makes the most sense (C3).
- Provide a single point of contact (C4).
- Create a separate process for each cluster (C5).
- Ensure a continuous flow of the 'main sequence' by ensuring that nothing slows the value-adding steps (C6).
- Reduce batch size (C7).
- Bring downstream information needs upstream (C8).
- Capture information once at the source and share it (C9).
- Involve as few people as possible (C10).
- Redesign, then automate (C11).
- Ensure quality at the beginning of the process (C12).
- Standardise processes (C13).
- Push decision making down to the lowest levels that make sense (C14).

6.2.3 Design for Modular and Evolvable Business Processes

Van Nuffel [2011] focuses on modular and evolvable design principles with the aim of helping organisations to be more agile, thereby creating the ability to adapt to change. A change in a business impacts the entire organisation, including its structure, business processes and information systems, requiring that these organisational constructs should be designed to evolve at the same pace. Although these principles discussed by Van Nuffel [2011] is far too technical for the typical SME manager, there are two patterns to be considered. The principles are labelled with an identifier starting with the letter 'V' (for Van Nuffel):

- *Stakeholder communication pattern*: First retrieve the required communication, then define the content and format of the notification and then handle the genuine communication e.g. sending the e-mail (V1).
- *Cancellation pattern*: First decide on the eligibility of the cancellation request and then perform the activities to execute the cancellation (V2).

A second contribution by Van Nuffel [2011] is the template being used by Van Nuffel [2011] to define a guideline (including principles and patterns). The following elements were considered in section 6.3.1 in packaging the proposed BPM Patlets using a standard template:

- *Problem*: A description of the problem that the guideline solves.

- *Semantics*: A small definition of the guideline.
- *Context*: The circumstances in which the guideline is applied.
- *Rationale*: A motivation for the guideline.
- *Example*: An example illustrating the guideline.
- *Advantages*: The value of applying the guideline.
- *Side effects*: Trade-offs to consider when applying the guideline.

6.2.4 Architecture Principles and the Publication of Principles

Hoogervorst [2011] describes the role of design principles within the context of enterprise engineering. Although the audience is not the typical SME manager, the examples included as well as the discussion of the publication of architecture are relevant to the BPM Patlet concept. These architecture principles are associated with areas of concern such as reduction of complexity, customer and service orientation, flexibility, employee involvement/satisfaction, security, costs, compliance and business intelligence. The design domain is also indicated per architecture principle for example business, organisation, information or IT domain.

The architecture principles of Hoogervorst [2011], included in Table 6-1, were considered during the development of the proposed BPM Patlets. The principles are labelled with an identifier starting with the letter 'H' (for Hoogervorst).

For the publication of architecture principles the following structure suggested by Hoogervorst [2011] was considered part of the development of the proposed BPM Patlets:

- *Statement*: A clear and concise expression of the principles.
- *Rationale*: The underlying reasons for the principles.
- *Implication*: The impact or consequence of the requirement.
- *Key actions*: Necessary actions that must be initiated for applying and exploiting the principle.

Table 6-1: Architecture Principles [Hoogervorst, 2011]

Architecture Principle	Design Domains				Areas of Concern							
	Business	Organisation	Information	IT	Reduction of complexity	Customer orientation	Flexibility	Employee involvement	Security	Costs	Compliance	Business Intelligence
Products must enable delivery under different labels (H1)	x				x		x					
Order transactions must be executed entirely through the internet (H2)	x				x	x	x		x	x		
Customer purchase or payment must always be confirmed (H3)	x	x				x					x	
Products may only have one customer contact point (H4)	x				x	x			x	x		
Customers must be informed about the status of their request (H5)	x					x						x
Process control and execution to be separate (H6)					x		x					
Redundant data entry about the same aspect is not allowed (H7)		x			x				x	x	x	
Assessment and reward systems must evoke and support customer and service oriented behaviour (H8)						x		x				
Data may have only one authoritative source (H9)			x		x		x		x		x	
Data about customer claim behaviour must be actively captured (H10)			x			x						x
Customer data must enable profiling (H11)			x			x					x	x
Access to systems and data must be based on authentication and role-based authorisation (H12)				x			x		x		x	
Applications must enable multi-channel access (H13)				x	x		x					

The following is an example of an organisational architecture principle [Hoogervorst, 2011: p. 55]:

- *Principle statement:* Assessment and reward systems must evoke and support desired customer and service-oriented behaviour and adherence to espoused norms and values.

- *Rationale*: As a strategic focus, our organisation places high value on customers and the service to them, and treasures the norms and values by which we conduct our business. Hence, we must ensure that our assessment and (monetary) reward systems induce behaviour that is consistent with these views.
- *Implications*: Current departmentally focused assessment and reward systems will be discontinued. Behaviour not consistent with our customer and quality focus will be actively discouraged.
- *Key actions*:
 - Investigate and re-engineer pertinent assessment and reward systems
 - Define necessary employee and management training
 - Define the necessary information supply and associated systems for supporting desired employee behaviour.

Unfortunately the detail per design principle is not included in Hoogervorst [2011] for the set of design principles listed in Table 6-1.

6.2.5 Enterprise Architecture Patterns

The audience for the enterprise architecture patterns suggested by Perroud and Inversini [2013] is readers familiar with the information and communication technology (ICT) domain. Despite the technical nature of the suggested enterprise architecture patterns the topics of these patterns are relevant to the SME world. It is envisioned that the proposed BPM Patlets will mature over time and such maturity should not exclude more comprehensive patterns as suggested by Perroud and Inversini [2013]. The principles, three business-related patterns and five support patterns, were considered in the development of the BPM Patterns. The principles are labelled with an identifier starting with the letter ‘P’ (for Perroud and Inversini):

- *WorkTogether as a business pattern*: A pattern that unifies different communication and collaboration functionalities. Users who are internal or external to the company can join discussions groups , share knowledge, and work together on documents to achieve a common consensus. The following design principles are mentioned as part of this business pattern:
 - Leveraging a new communication culture (P1).
 - Collaboration must be user-friendly, simple, effective and efficient (P2).
 - Collaboration takes place without endangering the intellectual property or the security of the enterprise (P3).
- *VendingMachine as a business pattern*: A pattern describing how an electronic vending channel (e.g. a Web shop) can be realised. The pattern shows the customer side as well as the side of the organisation that wants to sell goods. The following design principles are relevant to this business pattern:
 - Seamless integration with existing processes and services (P4).
 - Support devices commonly used to access online services (P5).

- Implementation of Web standards (P6).
- Secure implementation (P7).
- *KnowYourCustomer as a business pattern*: The pattern describes the various ways of interacting and communicating with the customer, including the following design principles:
 - Electronically-based workflows for all customer contacts (P8).
 - Mobility (P9).
 - Accurate information (P10).
 - Customer centricity (P11).
 - Security and privacy (P12).
- *Financials as a support pattern*: This pattern provides all necessary services to manage the financial supply chain. It supports the financial performance analysis, the management of accounts, and assets. The following design principles are mentioned:
 - Accurate and up-to-date financial information (P13).
 - Reduced costs of financial transactions (P14).
 - Security of financial transactions (P15).
- *Information Chest as a support pattern*: This deals with the management of structured and semi-structured information. It describes how information can be acquired, transformed, delivered, stored and archived. The following design principles are included:
 - A lifecycle management for all information in place (P16).
 - Instantiate an information-centric view (P17).
 - Interoperability for accessing applications (P18).
 - Security of information (P19).
 - Accessibility for mobile users (P20).
- *ResourcesAreScarce as a support pattern*: This pattern provides a solution for electronically enabled human resource management and mentions the following design principles:
 - Electronically-based workflows for human resource processes (P21).
 - Security of employee information (P22).
 - Accurate management information (P23).
- *FromSupplierToCustomer as a support pattern*: Supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversions, and all logistics management activities with design principles such as:
 - Achieve better cost-efficiency (P24).
 - Add value (P25).
 - Enhance interfacing to full integration (P26).
 - Control flow of goods, information, knowledge and financial values (P27).
 - Measure, learn and improve (P28).
- *ForYourEyesOnly as a support pattern*: The pattern supports the manual and automatic exchange of files between internal and external persons or systems in an asynchronous way. The pattern provides

the necessary mechanisms to protect the files during transport and storage and highlights the following design principles:

- A file transfer service that is easy to integrate (P29).
- Attractive pricing (P30).
- Separation of data to ensure confidentiality (P31).
- Protection of the integrity and authenticity of data (P32).
- Traceability (P33).
- Support for large files (P34).

The structure used by Perroud and Inversini [2013] to describe a pattern is more comprehensive than the other sets of design principles discussed earlier in this chapter. The following elements were considered in the development of the template to be used for the proposed BPM Patlets. The structure of the proposed BPM Patlets is likely to evolve over time as the maturity level of the users increase. The structure used by Perroud and Inversini [2013] includes elements such as:

- *Introduction*: Name, overview, classification as business or support, abstract, capabilities, references, patterns, bricks, impeding forces, supporting forces, invariance, complexity, connectivity, keywords and definition.
- *Example*.
- *Context*.
- *Problem*: Organisation's view, enterprise architect's view and end user's view.
- *Solution*: Vision, principles, statement, reasoning, consequences, holistic view, bricks, business view including processes, data view, application view and technology view.
- *Resulting context*: Interaction and consequences.

6.2.6 Catalogue of Enterprise Architecture Principles

Greefhorst and Proper [2011] state specifically that business entities whether small or large transform over time. The result is continuous change which impacts on the alignment of processes, people or structure as well as enabling systems. According to Greefhorst and Proper [2011] such changes are bound to lead to an overly complex, uncoordinated and heterogeneous environment that is hard to manage and hard to adapt to future changes if there is not some means of control. They argue that enterprise architecture principles provide a means to direct transformations of enterprises, and therefore these 59 principles, listed in Table 6-2, were considered in the development of the proposed BPM Patlets.

The structure of the design principles packaged by Greefhorst and Proper [2011] include the following elements:

- *Type of information*: Business, data, application or technology.
- *Quality attribute*: Reliability, efficiency, maintainability, portability, usability.
- *Rationale/Motivation*: Highlight major considerations.

- *Implication*: Highlight major considerations.

The following is an example of a principle from Greefhorst and Proper [2011]:

- *Principle*: Tasks are designed around an outcome.
- *Type of information*: Business.
- *Quality attribute*: Reliability, efficiency, usability.
- *Rationale/Motivation*: If workers are held responsible for the delivery of the outcome they feel more involved and tend to take more responsibility for their work which increases quality and efficiency. Giving people more responsibility also increases their job satisfaction.
- *Implication*:
 - Tasks are designed around an objective or outcome instead of a single function.
 - Workers have autonomy over when and how to perform the tasks they are lined up for.

The catalogue of enterprise architecture principles defined by Greefhorst and Proper [2011] is presented in Table 6-2. These principles are related to the four enterprise architecture domains, namely business, data, application and technology which are listed in the first column of Table 6-2. The principles selected to be in scope for the BPM@SME study are indicated by a ‘YES’ in the second column of Table 6-2. Those principles related to the business architecture domain are all included in scope. Principles associated with the data domain are included in scope if the nature of the principle is more towards business than technology. The principles associated with the application or technology domains are in general excluded from the scope, unless they are strongly related to BPM-related applications or technology. Those principles excluded from the BPM@SME scope are typically a topic for further research. The principles are labelled with an identifier starting with the letter ‘G’ (for Greefhorst and Proper).

Table 6-2: Catalogue of Enterprise Architecture Principles [Greefhorst & Proper, 2011]

Architectural Domain	In Scope	Identifier	Principle Catalogue
Business	YES	G1	Business units are autonomous
Business	YES	G2	Customers have a single point of contact
Business	YES	G3	Stock is kept to a minimum
Business	YES	G4	Processes are straight through (end-to-end integration)
Business	YES	G5	Processes are standardised
Business	YES	G6	Management layers are minimised (lower cost and responsibility of all people increases quality and efficiency)
Business	YES	G7	Tasks are designed around outcome
Business Application	YES	G8	Routine tasks are automated
Business	YES	G9	Primary processes are not disturbed by implementation of

Application Technology			changes
Business Data Application Technology	YES	G10	Components are centralised
Business Data Application	YES	G11	Front-office processes are separated from back-office processes
Business Data Application	YES	G12	Channel-specific is separated from channel-independent
Data Application	YES	G13	The status of the customer request is readily available inside and outside the organisation
Data Application	YES	G14	Data is provided by the source
Data Application	YES	G15	Data is maintained in the source application
Data Application	YES	G16	Data is captured once
Data	YES	G17	Data is consistent through all channels
Data		G18	Content and presentation are separated
Data	YES	G19	Data is stored and exchanged electronically
Data		G20	Data that is exchanged adhere to a canonical data model
Data	YES	G21	Data is exchanged in real time
Data Technology		G22	Bulk data exchanges rely on ETL tools
Data	YES	G23	Documents are stored in the document management system
Data Application		G24	Reporting and analytical applications do not use the operational environment
Application		G25	Applications have a common look-and-feel
Application		G26	Applications do not cross business function boundaries
Data Application		G27	Applications respect logical units of work
Application		G28	Applications are modular
Application		G29	Application functionality is available through an enterprise portal
Application Technology		G30	Applications rely on one technology stack
Application		G31	Application interfaces are explicitly defined
Application Technology		G32	Proven solutions are preferred

Application Technology		G33	IT systems are scalable
Application Technology	YES	G34	Changes to IT systems are made only in response to business needs
Business Data Application Technology	YES	G35	Components have a clear owner
Application Technology	YES	G36	IT systems are standardised and reused throughout the organisation
Data Application Technology		G37	IT systems adhere to open standards
Application Technology		G38	IT systems are preferably open source
Application Technology	YES	G39	IT systems are available at any time on any location (and any device)
Technology		G40	IT systems are sustainable
Application Technology	YES	G41	Processes are supported by a Business Process Management Suite (BPMS)
Application		G42	Presentation logic, process logic and business logic are separated
Data Application Technology		G43	IT systems communicate through services
Application Technology		G44	Reuse is preferable to buying, which is preferable to making
Application Technology		G45	IT system supports 24*7 availability
Application Technology		G46	IT systems are selected on the basis of best of suite approach
Data	YES	G47	Sensitive data is exchanged securely
Application Technology		G48	IT systems may under no circumstances revert to insecure mode
Application Technology		G49	Management of IT systems is automated as much as possible
Application	YES	G50	End-to-end security must be provided using multiple defence strategies
Application	YES	G51	Access rights must be granted at the lowest level necessary for performing the required operation
Application Technology	YES	G52	Authorisations are role-based
Application	YES	G53	The identity management environment is leading for all

Technology			authentications and authorisations
Application Technology		G54	Security is defined declaratively
Application Technology		G55	Access to IT systems is authenticated and authorised
Application Technology		G56	Integration with external IT systems is localised in dedicated IT components
Application		G57	Application development is standardised
Data Application Technology		G58	All messages are exchanged through the enterprise services bus
Application	YES	G59	Rules (that are complex or apt to change) are managed in a rule engine

6.3 Consolidated Set of Design Principles

The six sets of design principles, as presented in sections 6.2.1 to 6.2.6, were analysed for their applicability to the enhancement of the BPM Patterns, defined in Chapter 5, with the objective of helping the SME manager to be self-sufficient. With the consolidation of the design principles it was important to bear in mind that the scope of the BPM@SME research was to develop an approach for SME managers to benefit from existing BPM knowledge. In order to package the existing design principle knowledge, a template is required as discussed in section 6.3.1. The consolidated list of the design principles is described in section 6.3.2.

6.3.1 Design Principle Template

A prerequisite for consolidating the design principles is the definition of the template to describe a design principle. A field was only included in the template, describing a design principle, if the content to populate the template was readily available from the sources referenced in section 6.2.1 to section 6.2.6.

The fields included in the description of a design principle by the different sources as described in section 6.2.3 to section 6.2.6 are summarised in Table 6-3. The template to be used to describe the consolidated design principles as part of the BPM Patlets consists of the following fields:

- Statement
- Rationale / motivation
- Key actions
- Example (optional).

Table 6-3: Summary of Template for Design Principles

Field	Van Nuffel [2011]	Hoogervorst [2011]	Perroud and Inversini [2013]	Greefhorst and Proper [2011]
Statement		x		x
Problem	x		x	
Semantics/Introduction	x		x	
Context	x		x	
Rationale	x	x		x
Key Actions		x		
Implication (Advantages/Side Effects/ Interaction and Consequences)	x	x	x	x
Example	x		x	
Type of information: Business, data, application or technology				x
Quality attribute: Reliability, efficiency, maintainability, portability, usability				x
Solution: Vision, principles, statement, reasoning, consequences, holistic view, bricks, business view including processes, data view, application view and technology view			x	

6.3.2 Consolidated List of Design Principles

The consolidated list of design principles, as identified in section 6.2.1 to section 6.2.6, is included in Table 6-4. Each design principle is labelled with an identifier starting with the letter ‘DP’ for reference purpose during future research sub-cycles. The design principles listed as ‘in scope’ in Table 6-2 were used as the anchor list. Through abductive reasoning and synthesis, similar design principles were grouped together. DP21 to DP24 in Table 6-4 did not match a specific design principle listed ‘in scope’ in Table 6-2, and were therefore added to Table 6-4 as new entries. The rationale/motivation, key actions and examples fields were populated from the information available in the sources referenced in section 6.2.1 to section 6.2.6.

Table 6-4: Consolidated List of Design Principles

Identifier	Cross-reference to sections 6.2.1 to 6.2.6	Design Principles and Rationale or Motivation
DP1	G1, C5	<p><i>Statement:</i> Business units are autonomous so create a separate process for each business unit.</p> <p><i>Rationale/Motivation:</i> Autonomous business units can adapt to changes quickly because they do not need to align with other business units.</p>
DP2	G2, C4, H4	<p><i>Statement:</i> Provide a single point of contact for customers.</p> <p><i>Rationale/Motivation:</i> It is much more customer-friendly when the customer can direct all his/her communication to a single point, is serviced directly, and does not have to contact multiple people. It also ensures that consistent information is provided to the customer. It is more efficient to dedicate resources to handling customer contacts and preventing interruptions in operational activities.</p>
DP3	G3, H1	<p><i>Statement:</i> Stock is kept to a minimum.</p> <p><i>Rationale/Motivation:</i> Keeping stock at a minimum saves costs as unnecessary investment, storage and transport is prevented. It also allows quality problems to be detected and solved quickly.</p> <p><i>Key Action:</i> Products must enable delivery under different labels.</p>
DP4	G4, C6, C12, V2, P4, P26, P27	<p><i>Statement:</i> Processes are integrated end-to-end, ensuring a continuous flow with nothing slowing down the value-adding steps.</p> <p><i>Rationale/Motivation:</i> End-to-end integrated processes strive to deliver the output with a minimum delay, which increases customer satisfaction. They also aim to streamline processes and make them as efficient as possible.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Ensure quality at the beginning of the process • Ensure seamless integration of the processes and services • End-to-end integration includes the control of the integrated flow of the goods, information, knowledge and financial transactions • Buffers between activities are prevented as much as possible. <p><i>Example:</i> Considering the pattern for a cancellation it is important first to decide on the eligibility of the cancellation request and then to perform the activities to execute the cancellation but it is still an integrated process.</p>
DP5	G5, G35, G36, B3, C13	<p><i>Statement:</i> Increase consistency of behaviour through standardisation.</p> <p><i>Rationale/Motivation:</i> Standard processes are repeatable, predictable, scalable and more efficient. Process standardisation is often required in order to comply with certain legislation or quality standards. Without clear ownership it is unclear who decides on and pays for standardisation.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Define the standard process based upon current and best practices within the company • Ensure adherence to the standard process • Reuse IT systems throughout the organisation. • Allocate an owner to each process with the budget for adapting the process to requirements and needs.
DP6	G6, C14,	<p><i>Statement:</i> Management layers are minimised and decision making is pushed down</p>

	P23	<p>to the lowest level that makes sense.</p> <p><i>Rationale/Motivation:</i> Elimination of management layers minimises overhead costs. In addition giving the mandate for decision making at a lower level tends to change behaviour with people taking more responsibility for their work resulting in an increase in quality and efficiency.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Create self-directed teams throughout the organisations with as few management layers as possible • People who perform the actual work should have responsibility for making decisions • Provide accurate management information.
DP7	G7, B8, B9, C1, P25	<p><i>Statement:</i> Tasks are designed around the outcome and value-adding activities.</p> <p><i>Rationale/Motivation:</i> If workers are made responsible for the delivery of the outcome they feel more involved and tend to take more responsibility for their work, which increases effectiveness, quality and efficiency. It also increases their job satisfaction.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Remove activities that do not add value • Minimise activities that do not contribute directly to the final product • Design tasks around the outcome and not a function • Give autonomy to workers over when and how they are going to perform the task.
DP8	G8, G41, B2, C11, P21	<p><i>Statement:</i> Increase consistency of behaviour through automation.</p> <p><i>Rationale/Motivation:</i> Automated tasks are more efficient in time and costs, and less error-prone than manual tasks.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Redesign then automate • Identify routine tasks as they require relatively little specific knowledge and can be automated fairly easily. <p><i>Example:</i> Consider electronically-based workflows for human resource processes. Processes are supported by a Business Process Management System (BPMS).</p>
DP9	G9, G34, B6	<p><i>Statement:</i> Primary processes are not disturbed by implementation of changes. Changes to IT systems are made only in response to business needs.</p> <p><i>Rationale/Motivation:</i> Primary business processes are the core of the organisation and disturbances to these have a major impact on the organisation. Organisations change continuously and frequent disturbances are unacceptable. Change management will foster a culture where the information systems change in response to the needs of the business rather than having the business change to in response to information system changes. Unintended effects on business due to information system changes will be minimised.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Document the business need • Develop and implement a change management process to manage information system changes • New processes and systems should not be deployed until they have been tested and approved • Downtime of applications should be minimised and deployment should preferably be performed outside business hours • Understand the capabilities offered by solutions that are available to the SME.
DP10	G10	<p><i>Statement:</i> Components are centralised.</p>

		<p><i>Rationale/Motivation:</i> Centralisation can benefit from economies of scale, it eases standardisation and is easier to manage.</p> <p><i>Key Actions:</i></p> <p>The going in position is to centralise components, unless requirements dictate a decentralised approach.</p>
DP11	G11, B4	<p><i>Statement:</i> Front-office processes are separated from back-office processes.</p> <p><i>Rationale/Motivation:</i> Front-office processes focus on customer intimacy and require different skills from back-office processes which focus on operational excellence and re-use.</p> <p><i>Key Action:</i></p> <ul style="list-style-type: none"> • Clearly define the processes, the disengagement and the different logic of the front-office and back-office processes • Improve access to information by customer facing staff.
DP12	G12, G17, H13	<p><i>Statement:</i> Channel-specific is separated from channel-independent.</p> <p><i>Rationale/Motivation:</i> A lot of business activity is independent of the channel (telephone, mail, Internet, office) through which customers are contacted and can be shared for multiple channels. The data should be available independently of the channel.</p> <p><i>Key Actions:</i></p> <p>Applications must enable multi-channel access.</p>
DP13	G13, V1, H3, H5, H10, P8	<p><i>Statement:</i> The status of the customer request is readily available inside and outside the organisation.</p> <p><i>Rationale/Motivation:</i> Customers want to know when to expect a response to their request and it is also important to manage service levels internally.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Administer and change the customer requests centrally • Customer purchase or payment must always be confirmed • Customers must be informed about the status of their request • Ensure the up-to-date status is available to customers electronically at any time or place or device • Use electronically-based workflows for all customer contacts. <p><i>Example:</i> First retrieve the required communication, define the content and format of the notification and then handle the genuine communication e.g. sending the e-mail. Data about customer claim behaviour must be captured actively.</p>
DP14	G14, G15, G16, G19, C8, C9, H7, H9, P10, P13, P16, P17	<p><i>Statement:</i> Capture information once at the source and share it.</p> <p><i>Rationale/Motivation:</i> Unnecessary intermediate layers are prevented, the performance and reliability of the data increase and the potential for errors decreases together with the overhead cost. The risk of inconsistencies if data is maintained in multiple places is eliminated.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Consider electronic forms • Acquire data from the only authoritative source application • The source application for all types of data is known • Replication of data is only considered if properly motivated and managed and the replicated data is never updated. Data is not replicated until it is 100% correct • Check whether data is not already available before it is captured a second time • Bring downstream information needs upstream • Life-cycle management for all information should be in place

		<ul style="list-style-type: none"> Data is stored and exchanged electronically. <p><i>Example:</i> Accurate and up-to-date financial information.</p>
DP15	G21, C7	<p><i>Statement:</i> Data is exchanged in real-time</p> <p><i>Rationale/Motivation:</i> Users expect the most recent data as input for their processes. Decisions made on the basis of old data are less accurate and may lead to errors and/or inconsistencies.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> All changes to data are processed immediately. Batch processes are prevented or the batch size is reduced as far as possible.
DP16	G23, P1, P2, P29, P34	<p><i>Statement:</i> Provide communication, collaboration and enterprise content management or document management platform.</p> <p><i>Rationale/Motivation:</i> This allows finding and retrieving documents from one location and sharing them among workers ensuring that the necessary security and archiving measures are in place.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> Leverage a new communication culture Collaboration must be user-friendly, simple, effective and efficient Subscribe to or implements a document management system such as Dropbox or MS Sharepoint (as discussed in Table 5-12) The file transfer service must be easy to integrate Ensure support for large files.
DP17	G39, H2, P5, P6, P9, P20	<p><i>Statement:</i> IT systems are available at any time or location (and on any device).</p> <p><i>Rationale/Motivation:</i> Customers and employees perform their work at various locations at various times and on various devices and they expect to be supported no matter what the scenario.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> Consider cloud-based software Strong authentication services are available to ensure secure access Support devices commonly used to access online services Support mobile devices Implementation of Web standards. <p><i>Example:</i> Order transactions must be executed entirely on the internet.</p>
DP18	G50, G47, P3, P7, P12, P15, P19, P22, P31, P32, P33	<p><i>Statement:</i> End-to-end security must be provided using multiple defence strategies.</p> <p><i>Rationale/Motivation:</i> Confidentiality, integrity and availability must be ensured.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> Protection of personal information and data privacy Security of financial transactions Security of employee information Consider separation of data to ensure confidentiality. <p><i>Examples:</i> Collaboration takes place without endangering the intellectual property or the security of the enterprise.</p>
DP19	G52, G51, G53, B1, H6, H12	<p><i>Statement:</i> Clarify role and ensure that authorisations are role-based.</p> <p><i>Rationale/Motivation:</i> A role-based authorisation model is less sensitive to changes in the organisational structure and the same role usually has the same authorisations resulting in a more efficient model to maintain.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> Do not log in using administrator accounts Access should be granted only for the amount of time necessary

		<ul style="list-style-type: none"> • Access rights that are no longer needed should be revoked • Roles are related to responsibilities and not to specific applications • Centralise the administration of identities, roles and authorisations • Clarify responsibilities • Separate the execution of processes and the control of processes.
DP20	G59	<p><i>Statement:</i> Rules (that are complex or apt to change) are managed in a rule engine.</p> <p><i>Rationale/Motivation:</i> Business rules can be used by end –users and can be re-used and changes are easier than with hard coded rules.</p>
DP21	B5, P14, P23, P24, P28	<p><i>Statement:</i> Measure performance.</p> <p><i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information.
DP22	B7, C2, C3, C10, P18	<p><i>Statement:</i> Minimise handovers.</p> <p><i>Rationale/Motivation:</i> Any transfer of work between systems, between people or between systems and people adds to the complexity of the work.</p> <p><i>Key Action:</i></p> <ul style="list-style-type: none"> • Perform the work where it makes the most sense • Involve as few as possible • Ensure interoperability for accessing applications.
DP23	H8	<p><i>Statement:</i> Assessment and reward systems must evoke and support desired customer and service-oriented behaviour and adherence to espoused norms and values.</p> <p><i>Rationale:</i> As a strategic focus, an organisation places high value on customers and the service to them, and treasures the norms and values by which business is done. Ensure that the assessment and (monetary) reward systems motivate behaviour that is consistent with these views.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Investigate and reengineer pertinent assessment and reward systems. • Define necessary employee and management training. • Define the necessary information supply and associated systems for supporting desired employee behaviour.
DP24	H11, P11, P30	<p><i>Statement:</i> Support customer centricity.</p> <p><i>Rationale/Motivations:</i></p> <ul style="list-style-type: none"> • Customer data should enable profiling • Determine attractive pricing from customer perspective.

6.4 BPM Patlets to Enhance Self-sufficiency of the SME Manager

The proposed BPM Patlets were derived by cross-mapping the consolidated list of design principles, as listed in Table 6-4, with the ten re-usable BPM Patterns defined in section 5.3.2. The proposed BPM Patlets are included in Table 6-5 to Table 6-14. Through abductive reasoning and synthesis each design principle in Table 6-4 was considered within the context of each BPM Pattern. For example the following was the reasoning for the mapping of DP8, DP17, DP20, DP7 and DP9 onto BPM Patlet 1: Product Leadership:

- *DP8 and DP20* were mapped onto the two entries in the ‘Technology’ block:
 - *DP8*: ‘Increase consistency of behaviour through automation’ is mapped onto Technology: Business process management suite (BPMS).
 - *DP20*: ‘Rules (that are complex or apt to change) are managed in a rule engine’ is mapped onto Technology: Business rule engine.
- *DP17*: ‘IT systems are available at any time or location (and on any device) is mapped onto BPM Drivers to support innovation, agility and process effectiveness.
- *DP7*: ‘Tasks are designed around the outcome and value-adding activities (effectiveness)’ is mapped onto BPM Drivers to support effectiveness.
- *DP9*: ‘Primary processes are not disturbed by implementation of changes’ is mapped onto the concept of agility in BPM Drivers to support agility and Governance: Agile approach.

None of the members of the set of design principles, the ten reusable BPM Patterns or the mapping of the design principles to the reusable BPM Patterns to define BPM Patlets is in a finite state. The expectation is that the design principles, the reusable BPM Patterns and the BPM Patlets will evolve and mature over time.

Table 6-5: BPM Patlet 1: Product Leadership

BPM Patlet 1 – Product Leadership		
Business Model Rationale Create value through product leadership (BM1)	BPM Drivers Innovation, agility and process effectiveness (BD7)	BPM Value Proposition Finance Revenue Up (VP8)
People Team consisting of <ul style="list-style-type: none"> • Business expert • Business analysts • Solution developer 	Governance Method: Agile approach	Technology/Tool For BPM related product leadership: <ul style="list-style-type: none"> • Business rule engine • Business process management suite (BPMS)
Architecture Principles BPM related product leadership DP8: Increase consistency of behaviour through automation DP17: IT systems are available at any time on any location (and any device) DP20: Rules (that are complex or apt to change) are managed in a rule engine		

Generic principle for product leadership

DP7: Tasks are designed around the outcome and value-adding activities (effectiveness)

DP9: Primary processes are not disturbed by implementation of changes

Table 6-6: BPM Patlet 2: Customer Intimacy

BPM Patlet 2 – Customer Intimacy		
Business Model Rationale Create value through customer intimacy (BM2)	BPM Drivers Customer satisfaction (BD1)	BPM Value Proposition Customer convenience: <ul style="list-style-type: none"> • Customer service at any time, place or device (VP10) • Customer centricity (VP11)
People Skills: Think like a customer	Governance Method: Outside-In	Technology/Tool <ul style="list-style-type: none"> • Business analysis tool • Business intelligence tool (Dashboard)
Architecture Principles DP2: Provide a single point of contact for customers DP11: Front-office processes are separated from back-office processes DP13: The status of the customer request is readily available inside and outside the organisation DP14: Capture information once at the source and share it DP15: Data are exchanged in real-time DP23: Assessment and reward systems must evoke and support desired customer and service oriented behaviour and adherence to espoused norms and values DP24: Support customer centricity		

Table 6-7: BPM Patlet 3: Operational Excellence (Efficiency)

BPM Patlet 3 – Operational Excellence Efficiency		
Business Model Rationale Create value through operational excellence (BM3)	BPM Drivers <i>Effectiveness/</i> Efficiency of processes (BD2)	BPM Value Proposition <ul style="list-style-type: none"> • Performance: Responsiveness (VP4) • Performance: Productivity (VP5) • Finance: Cost down (VP9)
People Business analysts	Governance Method: Lean-SixSigma	Technology/Tool Business analysis tool
Architecture Principles DP3: Stock is kept to a minimum DP4: Processes are integrated end-to-end, ensuring a continuous flow with nothing slowing down the value-adding steps DP5: Increase consistency of behaviour through standardisation (<i>Ensure consistent quality</i>) DP6: Management layers are minimised and decision making is pushed down to the lowest level that make sense DP7: Tasks are designed around the outcome and value-adding activities (<i>Eliminate waste</i>) DP14: Capture information once at the source and share it		

DP19: Role clarification and ensure authorisations are role-based
 DP21: Measure performance
 DP22: Minimise handovers

Table 6-8: PM Patlet 4: Operational Excellence (Process Intelligence)

BPM Patlet 4 – Operational Excellence Process Intelligence		
Business Model Rationale Create value through operational excellence (BM3)	BPM Drivers Process Intelligence (BD6)	BPM Value Proposition <ul style="list-style-type: none"> • Performance Measurement: • Process Intelligence for decision making (VP6)
People Specific skills: <ul style="list-style-type: none"> • Analytics • Measurement 	Governance Define Key Performance Indicator (KPI) per process	Technology Business intelligence tool (Dashboard)
Architecture Principles DP14: Capture information once at the source and share it DP15: Data are exchanged in real time DP21: Measure performance		

Table 6-9: BPM Patlet 5: Compliance

BPM Patlet 5 - Compliance		
Business Model Rationale Compliance a prerequisite to create value (BM5)	BPM Drivers <ul style="list-style-type: none"> • Improving quality (BD4) • Reducing risk (BD5) 	BPM Value Proposition Certainty: Compliance (VP2)
People Governance, risk and compliance role	Governance <ul style="list-style-type: none"> • Legislation compliance <ul style="list-style-type: none"> ○ Quality ○ Risk • Include control activities • Measure compliance 	Technology <ul style="list-style-type: none"> • Business analysis tool • Business intelligence tools • Enterprise content management tool (Document management tool)
Architecture Principles DP5: Increase consistency of behaviour through standardisation DP16: Provide communication, collaboration and enterprise content management or document management platform DP18: End-to-end security must be provided using multiple defence strategies DP19: Role clarification and ensure authorisations are role-based DP21: Measure performance		

Table 6-10 BPM Patlet 6: One Time Event (Merger, Acquisition or Transformation)

BPM Patlet 6 – One Time Event (Merger/Acquisition/Transformation)		
Business Model Rationale Create value through a one-time event e.g. <ul style="list-style-type: none"> • Merge or acquisition • Transformation (BM6) 	BPM Drivers Process standardisation, variation and integration (BD8)	BPM Value Proposition <ul style="list-style-type: none"> • Certainty: Standardisation (VP1) • Certainty: Sustainability (VP3)
People <ul style="list-style-type: none"> • Design authority • Catalogue owners 	Governance <ul style="list-style-type: none"> • One logical repository • Change management process 	Technology/Tool Business analysis tool
Architecture Principles DP1: Business units are autonomous therefore create a separate process for each business unit DP4: Processes are integrated end-to-end, ensuring a continuous flow with nothing slowing down the value-adding steps DP5: Increase consistency of behaviour through standardisation		

Table 6-11: BPM Patlet 7: Growth through Replication

BPM Patlet 7 – Growth through Replication		
Business Model Rationale Growth through replication (BM8)	BPM Drivers Process standardisation (BD8.1)	BPM Value Proposition Certainty: Standardisation (VP1)
People Business analyst	Governance Standardise processes	Technology/Tool Business analysis tool
Architecture Principles DP5: Increase consistency of behaviour through standardisation DP12: Channel specific is separated from channel independent (Replication through new channels)		

Table 6-12 BPM Patlet 8: Growth through Coordination

BPM Patlet 8 – Growth through Coordination		
Business Model Rationale Growth through coordination and/or partnerships (BM4)	BPM Drivers Process integration (BD8.3)	BPM Value Proposition Performance: E2E process integration (VP7)
People <ul style="list-style-type: none"> • Business analyst • <i>Skills: Integration</i> 	Governance Integrate data	Technology/Tool Business analysis tool

<p>Architecture Principles</p> <p>DP4: Processes are integrated end-to-end, ensuring a continuous flow with nothing slowing down the value-adding steps</p> <p>DP14: Capture information once at the source and share it</p>

Table 6-13: BPM Patlet 9: Leveraging Economies of Scale

BPM Patlet 9 – Leveraging Economies of Scale		
<p>Business Model Rationale</p> <p>Growth associated with leveraging economies of scale (BM9)</p>	<p>BPM Drivers</p> <p>Process standardisation, variation and integration (BD8)</p>	<p>BPM Value Proposition</p> <ul style="list-style-type: none"> • Certainty: Standardisation (VP1) • Performance: E2E process integration (VP7) • Finance: Cost down (VP9)
<p>People</p> <p>Design authority</p>	<p>Governance</p> <p>Unification (Standardisation and integration)</p>	<p>Technology/Tool</p> <ul style="list-style-type: none"> • Business analysis tool • Enterprise content management tool
<p>Architecture Principles</p> <p>DP5: Increase consistency of behaviour through standardisation</p> <p>DP10: Components are centralised</p> <p>DP11: Front-office processes are separated from back-office processes</p>		

Table 6-14: BPM Patlet 10: Process Enabling Technology

BPM Patlet 10 – Process Enabling Technology		
<p>Business Model Rationale</p> <p>Create value through technology enablement (BM7)</p>	<p>BPM Drivers</p> <p>Process enablement with technology (BD3)</p>	<p>BPM Value Proposition</p> <ul style="list-style-type: none"> • Agility: Business Rule Management (VP12) • Agility: Process Automation (VP13)
<p>People</p> <p>Define roles for access control</p>	<p>Governance</p> <ul style="list-style-type: none"> • Manage business rules • Enterprise Architecture 	<p>Technology</p> <ul style="list-style-type: none"> • Business rule engine • Business process management suite (BPMS)
<p>Architecture Principles</p> <p>DP5: Increase consistency of behaviour through standardisation</p> <p>DP8: Increase consistency of behaviour through automation</p> <p>DP9: Primary processes are not disturbed by implementation of changes</p> <p>DP14: Capture information once at the source and share it</p> <p>DP15: Data are exchanged in real time</p> <p>DP17: IT systems are available at any time on any location (and any device)</p> <p>DP20: Rules (that are complex or apt to change) are managed in a rule engine</p>		

6.5 Expert Opinion as Evaluation of BPM Patlets

Two sets of deliverables were developed as part of Research Sub-Cycle 3 to address the challenge of ensuring that SME managers would be able to use the reusable BPM Patterns in a self-sufficient way: the consolidated list of design principles, as listed in Table 6-4, as well as the proposed BPM Patlets, included in Table 6-5 to Table 6-14. The design principles were incorporated and packaged as part of the BPM Patlets.

The evaluation of the BPM Patlets, including the design principles, was done within the context of the BPM Patlets not being in a finite state and being likely to evolve over time. The objective of the evaluation of the BPM Patlets is to determine whether there is any reason to disqualify them as input for Research Sub-Cycle 4. A BPM expert (senior BPM consultant, industrial engineer with more than 20 years of experience) gave his opinion on the suitability of the BPM Patterns as input towards further research sub-cycles. The evaluation method being used is known as an ‘expert opinion’.

The expert opinion was that the BPM Patlets are considered to be appropriate as input towards the development of the BPM@SME Approach in Research Sub-Cycle 4. The comments from the expert to consider for future research include:

- No completeness check was done on the set of design principles and the ten reusable BPM Patterns. The BPM Patlets are representative but not necessary complete.
- The mapping of the design principles onto the BPM Patlets is partly subjective and mapping by a second person may result in variations.
- The value of the BPM Patlets is in providing guidance.
- The BPM Patlets describe ‘what’ should be done and not ‘how’ it should be done.
- Specific comments from the BPM expert were included in the BPM Patlets and these changes are indicated in italic in the BPM Patlet 3, BPM Patlet 8, BPM Patlet 9 and BPM Patlet 10.

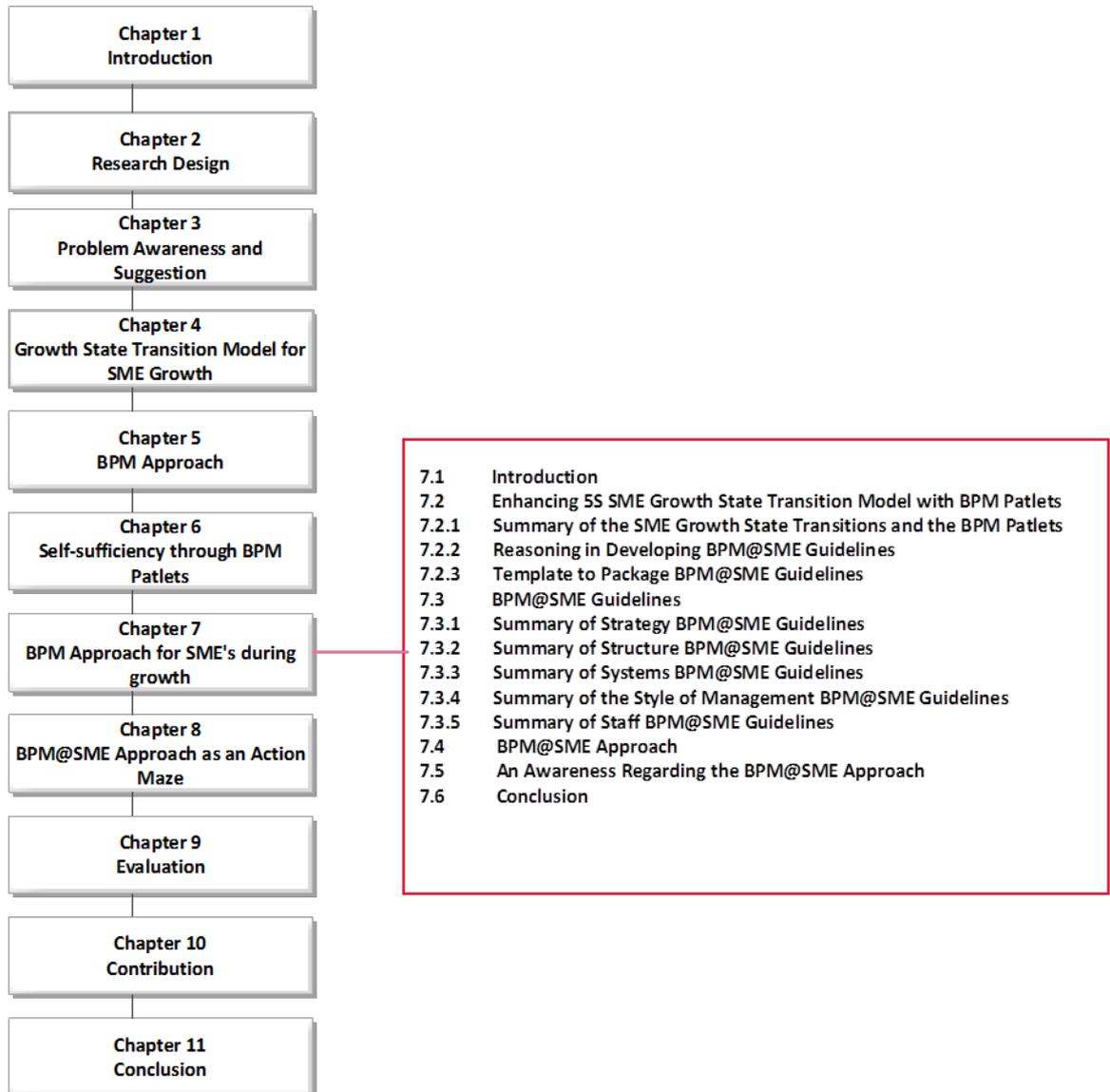
The BPM Patlets were therefore considered to be appropriate as input towards the development of the BPM@SME Approach described in Chapter 7.

6.6 Conclusion

The awareness in Chapter 5, addressing the BPM Approach, was that the reusable BPM Patterns should be enhanced to ensure that the SME manager is self-sufficient in applying them. The suggestion was that the reusable BPM Patterns should be enriched by the addition of design principles to the reusable BPM Patterns. A number of design principles from various sources were therefore consolidated and mapped onto the reusable BPM Patterns resulting in the BPM Patlets presented in this chapter. Scrutiny by an expert, led to the conclusion that the BPM Patlets were appropriate for use in Research Sub-Cycle 4. The suggestion was to map the BPM Patlets and the 5S SME Growth State Transition Model, in Research Sub-Cycle 4, so as to contribute towards a BPM@SME Approach, as discussed in Chapter 7

Chapter 7 : BPM@SME Approach

Chapter 7 Outline



7.1 Introduction

With the *5S SME Growth State Transition Model* developed, as described in Chapter 4, and the *BPM Patlets* defined, as discussed in Chapter 6, the next step was to package these two artefacts as a *BPM@SME Approach*, as envisaged in section 3.6.3. The objective of such a *BPM@SME Approach* is to help the SME manager to benefit from BPM as management approach in a self-sufficient way. The development of the *BPM@SME Approach* was part of the Research Sub-Cycle 4 with an overview of this research sub-cycle included in Figure 7-1.

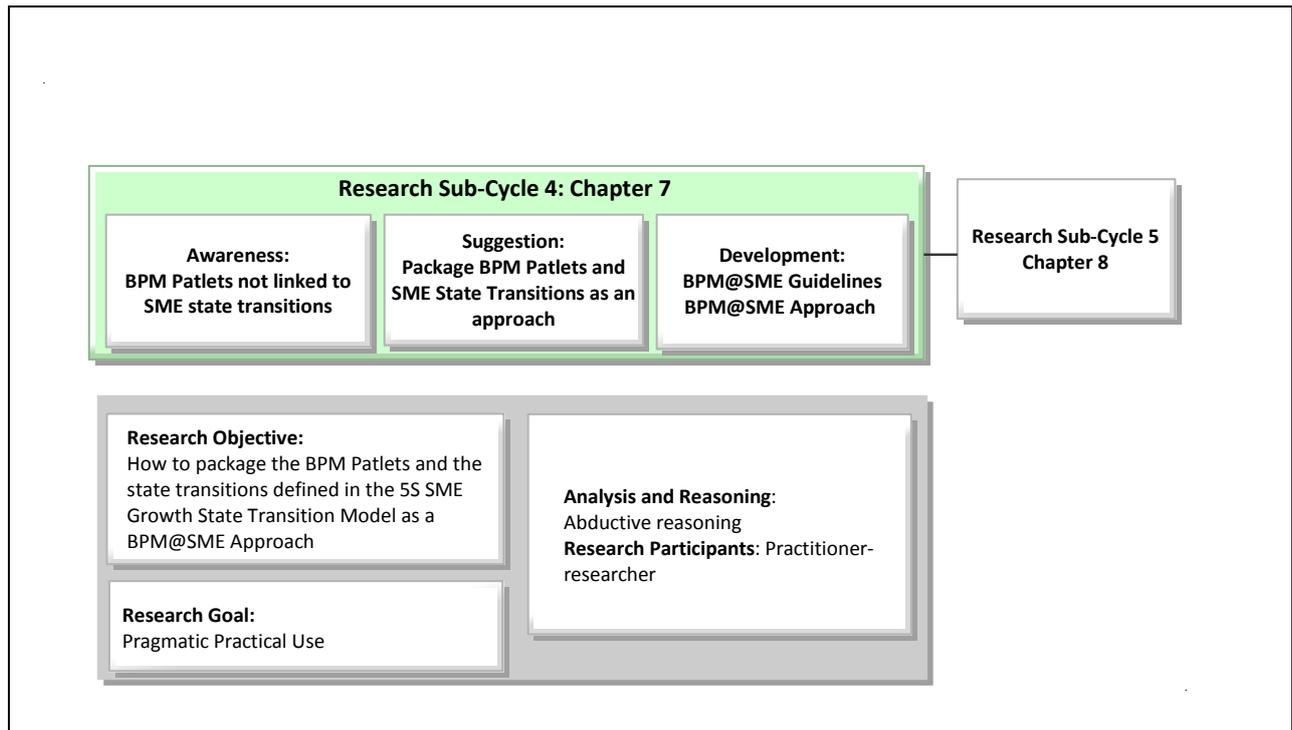


Figure 7-1: Research Sub-Cycle 4

The process of cross-referencing the SME growth state transitions as identified in the *5S SME Growth State Transition Model* and the *BPM Patlets* is included in section 7.2. The *BPM@SME Guidelines* used as part of the proposed *BPM@SME Approach* are discussed in section 7.3. The *BPM@SME Approach* is included in section 7.4. Awareness of the use of the proposed *BPM@SME Approach* is described in section 7.5, followed by the conclusion of the chapter in section 7.6

7.2 Enhancing 5S SME Growth State Transition Model with BPM Patlets

The focus of the *BPM@SME* research was to relate BPM practices to SME growth state transitions, resulting in an approach towards assisting SME managers to benefit from BPM as a management

approach. A summary of the BPM Patlets, as BPM recommended practices, and the SME growth state transitions is included in the section 7.2.1. The reasoning behind relating the SME growth state transitions to the BPM Patlets is discussed and illustrated in section 7.2.2. The template for the packaging of the SME growth state transitions and the BPM Patlets as BPM@SME Guidelines is included in section 7.2.3.

7.2.1 Summary of the SME Growth State Transitions and BPM Patlets

The first step towards the development of the BPM@SME Approach was to cross-reference the growth state transitions, identified as part of the 5S SME Growth State Transition Model described in Chapter 4, to the BPM Patlets discussed in Chapter 6. The following is a summary of the input used to relate the SME growth state transitions and the BPM Patlets, including design principles.

In Table 4-17 five classes of states were identified as part of the 5S Growth State Classification Framework. There are 63 state transitions derived and consolidated as part of the 5S SME Growth State Transition Model with the following distribution of the states per state classification:

- Strategy (Table 4-18) with 11 growth state transitions.
- Structure (Table 4-19) with 7 growth state transitions.
- Systems:
 - Process (Table 4-20) with 5 growth state transitions.
 - Information Systems (Table 4-21) with 9 growth state transitions.
 - Controls (Table 4-22) with 5 growth state transitions.
 - Planning (Table 4-23) with 7 growth state transitions.
- Style of management Table 4-24:
 - Delegation of Authority with 10 growth state transitions.
 - Decision making Style with 3 growth state transitions.
- Staff (Table 4-25) with 6 growth state transitions.

These 63 SME growth state transitions were mapped onto the ten BPM Patterns (Table 5-15 to Table 5-24) and the 24 Design Principles (Table 6-4) and packaged as ten BPM Patlets (Table 6-5 to Table 6-14). The combination of the design principles as reflected per BPM Patlets resulted in 45 entries distributed as follows across the BPM Patlets:

- BPM Patlet 1 with 5 design principles.
- BPM Patlet 2 with 7 design principles.
- BPM Patlet 3 with 9 design principles.
- BPM Patlet 4 with 3 design principles.
- BPM Patlet 5 with 5 design principles.
- BPM Patlet 6 with 3 design principles.
- BPM Patlet 7 with 2 design principles.
- BPM Patlet 8 with 2 design principles.

- BPM Patlet 9 with 2 design principles.
- BPM Patlet 10 with 7 design principles.

There are potentially $63 \times 45 = 2835$ permutations to verify. In order to ensure consistency and completeness, the reasoning method and process of mapping the SME growth state transitions onto the BPM Patlets per design principle is explained in section 7.2.2.

7.2.2 Reasoning in Developing BPM@SME Guidelines

The mapping of the SME growth state transitions onto the BPM Patlets was done per the classification used in the development of the 5S SME Growth State Transition Model, namely strategy, structure, systems, style of management and staff. The results of the mapping are included per class from section 7.3.1 to section 7.3.5. As part of the BPM@SME research the intent was to consider the principle of most appropriate fit to limit the number of design principles per state transition. It would be possible to relate a larger number of design principles per state transition resulting in an overload of information for the SME manager. The mapping of the design principles per state transition should evolve over time as the BPM@SME Guidelines are used by SME managers.

The following steps were followed during the mapping of the SME growth state transitions and the BPM Patlet design principles:

- *Step 1:* The mapping is done by taking each of the 63 growth state transitions.
- *Step 2:* Determine related design principles following one of the following three reasoning paths:
 - *Reasoning path A:* Map the class of growth state and the BPM Patlet and so limit the number of design principles to consider.

For example, in design principle related to ‘S3.3.1 SME Growth Transition: Formalise and institutionalise rules (policies, procedures, standards)’, the design principles were determined by means of the following reasoning. S3.3.1 is part of the class ‘System’ and the sub-class ‘Control’. If ‘Control’ is compared with the ten BPM Patlets (Table 6-5 to Table 6-14) the best fit is ‘BPM Patlet 5: Compliance as Prerequisite to Create Value’. The reasoning is that a control is an example of an action to manage compliance. The potential design principles as listed as part of ‘Compliance as Prerequisite to Create Value (BPM Patlet 5)’ in Table 6-9 are:

- *DP5:* Increase consistency of behaviour through standardisation.
- *DP16:* Provide communication, collaboration and enterprise content management or document management platform.
- *DP18:* End-to-end security must be provided using multiple defence strategies.
- *DP19:* Clarify roles and ensure authorisations are role-based.
- *DP21:* Measure performance.

The best fit design principle for S3.3.1 is ‘DP5: Increase consistency of behaviour through standardisation’. The end result is that the growth state transition S3.3.1 is mapped onto the

‘BPM Patlet 5: Compliance as Prerequisite to Create Value’ and ‘DP5: Increase consistency of behaviour through standardisation’.

- *Reasoning path B*: Map the growth state transition and the BPM Patlet and so limit the number of design principles to consider.

For example, the design principle related to ‘S1.3.2 Geographical expansion is a strategy towards diversification and getting entry to new markets’ was determined by means of the following reasoning. If ‘Geographical expansion’ is compared with the ten BPM Patlets (Table 6-5 to Table 6-14) the best fit is ‘BPM Patlet 7: Growth through Replication’. The reasoning is that the same processes are replicated for each new geographical market. The potential design principles as listed as part of ‘Growth through Replication (BPM Patlet 7)’ in Table 6-11 are:

- *DP5*: Increase consistency of behaviour through standardisation.
- *DP12*: Channel specific is separated from channel independent (Replication through new channels).

The best fit design principle for S1.3.2 is ‘DP5: Increase consistency of behaviour through standardisation’. The end result is that the growth state transition S1.3.2 is mapped onto the ‘BPM Patlet 7: Growth through Replication’ and ‘DP5: Increase consistency of behaviour through standardisation’.

- *Reasoning path C*: Map the growth state transition and the design principle and then derive the relevant BPM Patlet.

For example, the design principle related to ‘S5.3 Define job descriptions based on the processes and ensure clear role clarification’ was determined by means of the following reasoning. If ‘role clarification’ is compared with the design principles (Table 6-4) the best fit is ‘DP19: Clarify roles and ensure authorisations are role based’. DP19 is related to both ‘BPM Patlet 3: Operational Excellence (Efficiency)’ in Table 6-7 and ‘BPM Patlet 5: Compliance as Prerequisite to Create Value’ in Table 6-9. Based on the context of S5.3 as part of ‘Staff’ as the class of state the BPM Patlet 5 was selected to complete the BPM@SME Guideline.

- *Step 3*: Do a completeness check to ensure that all design principles (Table 6-4) are referenced at least once in a BPM@SME Guideline. More than one design principle listed as part of a BPM Patlet may be relevant to a specific growth state transition. Not all of the design principles listed as part of a BPM Patlet may be relevant to a specific growth state transition. If the BPM@SME Guidelines are exactly the same for a number of growth state transitions these growth state transitions are grouped together with an example S3.2.2 to S3.2.6.

7.2.3 Template to Package BPM@SME Guidelines

The example of the BPM@SME Guideline template in Table 7-1 is used to document the BPM@SME Guidelines.

Table 7-1: Example of BPM@SME Guideline.

<p><i>SME Growth Transition</i></p> <p>S1.1.1 Diversification by acquisition is a strategy to gain and/or maintain product leadership in the market.</p>		
<p><i>To Do</i></p> <p>DP1: Separate processes for each business unit DP4: Ensure end-to-end integration of processes DP5: Standardise processes</p>		
<p><i>Create Value through a One Time Event (BPM Patlet 6)</i></p>		
<p><i>Why</i></p> <p>Diversification by acquisition is a strategy to accelerate going to market as a product leader or to gain access to new markets or distribution channels.</p>	<p><i>What</i></p> <p>Standardise processes between the enterprises impacted by the acquisition. Understand and manage variation in processes between the enterprises impacted by the acquisition. Integrate processes to ensure end-to-end integration of processes of the enterprises impacted by the acquisition.</p>	<p><i>Value</i></p> <p>Certainty increases if processes are standardised resulting in more predictable outcomes. Certainty increases if sustainability increases through standardised processes as part of a one-time event such as a merge, acquisition or transformation</p>
DP1	<p><i>Statement:</i> Business units are autonomous so create a separate process for each business unit.</p> <p><i>Rationale/Motivation:</i> Autonomous business units can adapt to changes quickly because they do not need to align with other business units.</p>	
DP4	<p><i>Statement:</i> Processes are integrated end-to-end, ensuring a continuous flow with nothing slowing down the value-adding steps.</p> <p><i>Rationale/Motivation:</i> End-to-end integrated processes strive to deliver the output with minimum delay, which increases customer satisfaction. It further aims to streamline processes and make them as efficient as possible.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Ensure quality at the beginning of the process • Ensure seamless integration of the processes and services • End-to-end integration includes the control of the integrated flow of goods, information, knowledge and financial transactions • Buffers between activities are prevented as much as possible. <p><i>Example:</i> Considering the pattern for a cancellation, it is important first to decide on the eligibility of the cancellation request and then to perform the activities to execute the cancellation, but it is still an integrated process.</p>	
DP5	<p><i>Statement:</i> Increase consistency of behaviour through standardisation.</p> <p><i>Rationale/Motivation:</i> Standard processes are repeatable, predictable, scalable and more efficient. Process standardisation is often required in order to comply with certain legislation or quality standards.</p> <p><i>Key actions:</i></p> <p>Define the standard process based upon current and best practices within the company</p> <p>Ensure adherence to the standard process</p> <p>Reuse IT systems throughout the organisation.</p>	

7.3 BPM@SME Guidelines

The mapping of the BPM Patlets and the relevant design principles onto the SME growth state transitions per class of state is included in section 7.3.1 to section 7.3.5.

7.3.1 Summary of Strategy BPM@SME Guidelines

The mapping of the BPM Patlets and the relevant design principles onto the states related to transitions associated with the strategy of an SME is included in Table 7-2 to Table 7-5.

Table 7-2: Summary of Strategy (Product Leadership) BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
S1.1.1 Diversification by acquisition is a strategy to gain and/or maintain product leadership in the market.	Create Value through a One- Time Event (BPM Patlet 6)	DP1: Separate processes for each business unit DP4: Ensure end-to-end integration of processes DP5: Standardise processes
S1.1.2 Major and frequent product/service innovations is a strategy to gain and/or maintain product leadership in the market through new products.	Create value through product leadership (BPM Patlet 1)	DP8: Identify candidate processes for automation DP17: Determine customer need for IT systems to be available at any time or place or on any device DP20: Manage business rules (initially manually)
S1.1.3 Small and incremental product/service modifications is a strategy to gain and/or maintain product leadership in the market.	Create value through product leadership (BPM Patlet 1)	DP9: Modifications should not disturb primary processes

Table 7-3: Summary of Strategy (Operational Excellence) BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
S1.2.1 Managing the supply-chain upstream and/or downstream is a strategy to gain and/or maintain a competitive advantage in the market. Working closely with suppliers and the distribution network enables an integrated end-to-end service as part of operational excellence.	Growth through Coordination and/or Partnerships (BPM Patlet 8)	DP4: Improve end-to-end integration of processes DP14: Capture information once during the process, at the source

S1.2.2 Identification of a niche product/service to close a gap in the end-to-end supply-chain delivered is a strategy to gain and/or maintain a competitive advantage in the market.	Growth through Coordination and/or Partnerships (BPM Patlet 8)	DP4: Improve end-to-end integration of processes
S1.2.3 Economic production is a strategy to gain/or maintain a competitive advantage in the market. The focus is on efficiency, improving the production/service delivery process eliminating rework and cutting cost.	Create value through operational excellence (BPM Patlet 3)	DP3: Keep stock to a minimum DP7: Design tasks around the outcome and value-adding activities DP21: Measure performance

Table 7-4: Summary of Strategy (Marketing/Distribution Channels) BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
S1.3.1 Expansion of market and distribution channels is a strategy to ensure dominance of distribution channels and the associated competitive advantage in the market.	Growth through Replication (BPM Patlet 7)	DP12: Separate channel specific and channel independent processes.
S1.3.2 Geographical expansion is a strategy towards diversification and gaining entry to new markets.	Growth through Replication (BPM Patlet 7)	DP5: Standardise processes
S1.3.3 Market segmentation with different lines of products/services per market is a strategy for the SME to gain and/or maintain a competitive advantage in the market.	Create value through Customer Intimacy (BPM Patlet 2)	DP24: Ensure customer centricity

Table 7-5: Summary of Strategy (Customer Focus) BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
S1.4.1 Customer preference requires diversification of marketing, products and administrative practices. Scanning customer preference and acting on it is a strategy to gain and maintain the competitive advantage in the market.	Create value through Customer Intimacy (BPM Patlet 2)	DP2: Create a single point of contact for customers DP13: Ensure that the status of the customer request is available DP14: Capture information once at the source DP15: Exchange data in real-time

S1.4.2 High performance enterprises have a stronger awareness of customers and customer needs and it is a strategy of the SME to know and obtain customers so as to become/remain a high performance enterprise.	Create value through Customer Intimacy (BPM Patlet 2)	DP24: Ensure customer centricity
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7.3.2 Summary of Structure BPM@SME Guidelines

The mapping of the BPM Patlets and the relevant design principles onto the SME growth states related to transitions associated with the structure of an SME is included in Table 7-6. (Note: S2.1 is the default state and it is not included as a transition).

Table 7-6: Summary of Structure BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
S2.2 Functional structure S2.3 Product based S2.4 Customer based	Growth Associated with Leveraging Economies of Scale (BPM Patlet 9)	DP11: Separate back-office and front-office processes
S2.5 Decentralised by geographical area	Growth through Replication (BPM Patlet 7)	DP5: Standardise processes
S2.6 Divisional structure	Create Value through a One Time Event (BPM Patlet 6)	DP1: Separate processes per business unit
S2.7 Shared services structure	Growth Associated with Leveraging Economies of Scale (BPM Patlet 9)	DP10 Consider centralisation

7.3.3 Summary of Systems BPM@SME Guidelines

The mapping of the BPM Patlets and the relevant design principles onto the states related to transitions associated with the system (processes, information systems, controls and planning) of an SME is included in Table 7-7 to Table 7-10.

Table 7-7: Summary of System (Process) BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
S3.1.1 The record keeping processes are defined and standardised to keep a record of all transactions as well as all	Compliance a Prerequisite to Create Value (BPM Patlet 5)	DP16: Implement a collaboration platform.

communications.		
S3.1.2 The way of work is reviewed to eliminate inefficiencies and to improve productivity. Redundant activities are identified and removed and then implemented. The level of standardisation of the process is monitored to reduce rework over time. Note: Efficiency refers to how work is being done	Create value through operational excellence (BPM Patlet 3)	DP4: Ensure end-to-end integration of process DP5: Standardise Process DP6: Provide mandate for decision making DP7: Design tasks around outcome and value-adding activities DP21: Measure performance DP22: Minimise handovers
S3.1.3 The way of working is reviewed to ensure all processes are effective, i.e. that what is being done and the outcome of a process are adding value. Ensure that you do not increase the efficiency of a process that is not effective.	Create value through operational excellence (BPM Patlet 3)	DP7: Design tasks around the outcome and value-adding activities
S3.1.4 Processes to consider for specialisation are identified.	Create value through operational excellence (BPM Patlet 3)	DP10: Centralise processes DP11: Separate back-office and front-office processes
S3.1.5 The performance of a business process is monitored, starting with the selection of a key performance indicator (KPI) and measurement of this one KPI. An example would be to measure on time delivery or another example would be to monitor the number of rework requests as a result of quality deviations. KPIs are often related to time, cost or quality.	Create value through operational excellence (Process Intelligence)(BPM Patlet 4)	DP21: Measure performance

Table 7-8: Summary of System (Information Systems) BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
S3.2.1 Reporting is enabled by an information system to track revenue and expenses on a monthly basis.	Create value through operational excellence (BPM Patlet 4)	DP14: Capture information once at the source DP15: Exchange data in real-time DP21: Measure performance
S3.2.2 A financial system is implemented to automate the financial transactions including invoicing and management of expenses together with the	Create Value through Technology Enablement (BPM Patlet 10)	DP4: Ensure end-to-end integration of process

<p>management of creditors and debtors.</p> <p>S3.2.3 A marketing system is implemented to manage customer information and lead management.</p> <p>S3.2.4 A production system or professional services system is implemented with a time sheet system playing an important role in professional services and the management of raw material and batches in production.</p> <p>S3.2.5 A human resource management system is implemented to manage human resources, payroll and compliance with labour legislation.</p> <p>S3.2.6 A logistics or distribution system is implemented to manage delivery of products.</p>		
<p>S3.2.7 A management information system is implemented for information dissemination and retrieval. Relevant and undistorted information reaches decision makers on time.</p>	<p>Create value through operational excellence (BPM Patlet 4)</p>	<p>DP21: Measure performance.</p>
<p>S3.2.8 Coordination of diverse activities is enabled through inter alia collaboration systems, document management or enterprise content management and workflow.</p>	<p>Create value through Technology Enablement (BPM Patlet 10)</p>	<p>DP8: Automate processes</p>
<p>S3.2.9 Information systems are used to better serve markets. Examples are online trading, tracking of orders, social media for marketing and process execution (using workflow, business rule engine and an integration platform).</p>	<p>Create value through Technology Enablement (BPM Patlet 10)</p>	<p>DP13: Ensure status of customer request is available DP14: Capture information once at the source DP15: Exchange data in real time DP17: Ensure IT systems are available at any time, place or on any device DP20: Manage business rules</p>

Table 7-9: Summary of System (Control) BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
<p>S3.3.1 Rules (policies, procedures and standards) are formalised and institutionalised. SME growth is often associated with an increase in staff, and it is important to set the rules and apply the rules consistently to all staff.</p>	<p>Compliance a Prerequisite for Creating Value (BPM Patlet 5)</p>	<p>DP5: Standardise Processes</p>
<p>S3.3.2 Operational controls such as the control of stock are implemented.</p>	<p>Compliance a Prerequisite for Creating Value (BPM Patlet 5)</p>	<p>DP21: Measure performance DP18: End-to-end security</p>
<p>S3.3.3 Financial controls including the performance of sub-units, departments, divisions and products are monitored.</p>	<p>Create value through operational excellence (Process Intelligence) (BPM Patlet 4)</p>	<p>DP14: Capture information once at the source DP21: Measure performance</p>
<p>S3.3.4 Compliance with regulations and quality standards are monitored.</p>	<p>Compliance a Prerequisite for Creating Value (BPM Patlet 5)</p>	<p>DP21: Measure performance</p>
<p>S3.3.5 Ensure that the SME is always ready for a due diligence appraisal whether it is to support a business plan to attract funding, whether it is undertaken by a prospective shareholder or whether it is part of the evaluation of the SME as a supplier on a large contract. A due diligence appraisal establishes the assets and liabilities of a company and evaluate its commercial potential. Well-established policies, procedures and rules as well as operational and financial controls contribute towards a positive outcome of a due diligence appraisal.</p>	<p>Compliance a Prerequisite for Creating Value (BPM Patlet 5)</p>	<p>DP21: Measure performance</p>

Table 7-10: Summary of System (Planning) BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
<p>S3.4.1 Cash is managed to make provision for the investments required to enable growth. Cash forecasting is based on the financial plan (the budget) as well as the actual financial results.</p> <p>S3.4.2 The processes for planning, scheduling and coordination are defined and implemented. The allocation of resources to complete specific work is known as scheduling. Coordination is the synchronisation and integration of activities, responsibilities, and command and control structures to ensure efficient completion of work.</p> <p>S3.4.3 A long-term vision is in place to ensure that the tactical and operational plans are driven by the strategic vision.</p> <p>S3.4.4 Both operational and strategic plans are defined for marketing, production, human resources and finance.</p> <p>S3.4.5 An operating budget to support strategies is in place and is used to manage operations.</p> <p>S3.4.6 Capital expenditure is planned well in advance.</p> <p>S3.4.7 A marketing forecast is available.</p>	<p>Create value through operational excellence (Process Intelligence) (BPM Patlet 4)</p>	<p>DP21: Measure performance</p>

7.3.4 Summary of Style of Management BPM@SME Guidelines

The mapping of the BPM Patlets and the relevant design principles to the states related to transitions associated with the style of management (delegation of authority, decision making style) of an SME is included in Table 7-11 and Table 7-12.

Table 7-11: Summary of Style of Management (Delegation of Authority) BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
<p>S4.1.1 The SME manager supervised the employees directly.</p> <p>S4.1.2 Supervisors are responsible for the supervision of employees</p> <p>S4.1.3 A functional structure results in delegation of authority to functional managers.</p> <p>S4.1.4 A divisional structure results in delegation of authority to divisional managers.</p>	<p>Create value through operational excellence (Efficiency) (BPM Patlet 3)</p>	<p>DP6: Provide mandate for decision making</p> <p>DP19: Role clarification</p>
<p>S4.1.5 Delegation of authority is managed by setting objectives for managers and measure performance against the objectives.</p> <p>S4.1.6 Delegation of authority is managed by putting a process in place to escalate exceptions</p>	<p>Create value through operational excellence (Process Intelligence) (BPM Patlet 4)</p>	<p>DP21: Measure performance</p>
<p>S4.1.7 Delegation of authority includes authority to promote direct workers, dismiss direct workers, add new products or services, select new equipment and approve unbudgeted expenditure.</p> <p>S4.1.8 Delegation of day-to-day operating authority is given with the necessary mandate.</p> <p>S4.1.9 Strategy-making power (acquisitions, diversification and vision) is centralised.</p> <p>S4.1.10 The formal definition of reporting relationships is visible and the lines of authority are specified in organisational chart.</p>	<p>Create value through operational excellence (Process Intelligence) (BPM Patlet 4)</p>	<p>DP6: Provide mandate for decision making</p> <p>DP19: Role Clarification</p>

Table 7-12: Summary of Style of Management (Decision making Style) BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
S4.2.1 Intuitive decision making is replaced with an understanding of the decision making process to make more informed decisions.	Compliance a Prerequisite to Create Value (BPM Patlet 5)	DP5: Standardise Process
S4.2.2 Specialists are appointed to make decisions on the basis of expertise and analysis of information	Create value through operational excellence (Process Intelligence) (BPM Patlet 4)	DP21: Measure performance
S4.2.3 Participation by employees in the decision - making process is promoted with an associated increase in the level of motivation of employees. Communication and change management are in place.	Create value through operational excellence (Efficiency) (BPM Patlet 3)	DP6: Provide mandate for decision making

7.3.5 Summary of the Staff BPM@SME Guidelines

The mapping of the BPM Patlets and the relevant design principles onto the states related to transitions associated with staff of an SME is included in Table 7-13.

Table 7-13: Summary of Staff BPM@SME Guidelines

SME Growth State Transition	BPM Patlet	Design Principle
S5.1 An incentive scheme is included as part of the remuneration package. S5.2 A performance management process is defined and implemented. S5.6 The culture and values of the SME are protected as the SME grows.	Create value through Customer Intimacy (BPM Patlet 2)	DP23: Rewards systems support desired behaviour
S5.3 Job descriptions are based on the processes and clear role clarification is ensured.	Compliance a Prerequisite to Create Value (BPM Patlet 5)	DP19: Role clarification
S5.4 A training and development programme is implemented for employees.	Compliance a Prerequisite to Create Value (BPM Patlet 5)	DP5: Standardise processes.

S5.5 Communication and change management are in place.	Compliance a Prerequisite to Create Value (BPM Patlet 5)	DP16: Implement a collaboration platform
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7.4 BPM@SME Approach

With the 5S SME Growth State Transition Model defined in Table 4-18 to Table 4-25 and the BPM@SME Guidelines, summarised in Table 7-2 to Table 7-13 and described in Appendix B: it is possible to describe the BPM@SME Approach to assist SME managers to benefit from BPM. The BPM@SME Approach consists of the following steps:

- *Step 1:* The SME manager, with or without the assistance of an SME coach, completes the assessment based on the 5S SME Growth State Transition Model. An SME coach, also known as a SME mentor using coaching as a method, provides business development guidance and assistance to the SME manager when facing challenges. As an example, the assessment of the processes as part of the SME as System is included in Table 7-14. The SME manager indicates whether an SME growth state and associated transition are currently applicable to the SME, whether it is an envisioned future state transition or whether the state and transition are not at the moment applicable to the SME. If the SME is unsure about the meaning of the listed state transition it is possible to open the related BPM@SME Guideline. The S3.1.3 BPM@SME Guideline for the state transition S3.1.3 is included in Table 7-15.

Table 7-14: SME Assessment of the Processes as part of the SME as System

SME Assessment of the Processes as part of the SME as a System (S3.1) Indicate per state (S3.1.1 to S3.1.5) whether it is the current state, potential future state or not applicable to the SME.	Current State	Future State	Not applicable
S3.1 Processes A business process describes the work that is being done in a business. As the SME grows it is important to define, standardise, align and optimise the processes overtime. In order to identify opportunities for optimisation, the initial step is to measure the performance of the processes.			
S3.1.1 The record keeping processes are defined and standardised to keep a record of all transactions as well as all communications.	x		
S3.1.2 The way of work is reviewed to eliminate inefficiencies and to improve productivity. Redundant activities are identified and removed and then implemented The level of standardisation of the process is monitored to reduce rework over time. Note: Efficiency refers to how work is being done			x
S3.1.3 The way of working is reviewed to ensure all processes are effective, i.e. that what is being done and the outcome of a process are adding value. Ensure that you do not increase the efficiency of a process that is not effective.	x		
S3.1.4 Processes to consider for specialisation are identified.		x	
S3.1.5 The performance of a business process is monitored, starting with the selection of a key performance indicator (KPI) and measurement of this one KPI.		x	

An example would be to measure on time delivery or another example would be to monitor the number of rework requests as a result of quality deviations. KPIs are often related to time, cost or quality.			
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Table 7-15: S3.1.3 BPM@SME Guideline

<i>SME Growth Transition</i>		
S3.1.3 The way of working is reviewed to ensure all processes are effective, i.e. that what is being done and the outcome of a process are adding value. Ensure that you do not increase the efficiency of a process that is not effective.		
<i>To Do</i>		
DP7: Design tasks around the outcome and value-adding activities		
<i>Create value through operational excellence (BPM Patlet 3)</i>		
<i>Why</i> The value of product leadership should result in an upward trend in financial revenue.	<i>What</i> Design tasks around the outcome and value-adding activities to ensure effectiveness.	<i>Value</i> Create value through effectiveness of the product or service.
DP7	<p><i>Statement:</i> Tasks are designed around the outcome and value-adding activities.</p> <p><i>Rationale/Motivation:</i> If workers are made responsible for the delivery of the outcome they feel more involved and tend to take more responsibility for their work, which increases effectiveness, quality and efficiency. It also increases their job satisfaction.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Remove activities that do not add value • Minimise activities that do not contribute directly to the final product • Design tasks around the outcome and not a function • Give autonomy to workers over when and how they are going to perform the task. 	

- *Step 2:* The ‘current to do list’ is compiled on the basis of the outcome of the assessment. As illustration the result of the assessment indicated in Table 7-14 and the BPM@SME Guidelines in Table 7-15 and Table 7-16 is the ‘current to do list’ included in Table 7-17.

Table 7-16: S3.1.1 BPM@SME Guideline

<p><i>SME Growth Transition</i></p> <p>S3.1.1 The record keeping processes are defined and standardised to keep a record of all transactions as well as all communications.</p>		
<p><i>To Do</i></p> <p>DP16: Implement a collaboration platform.</p>		
<p><i>Compliance a Prerequisite for Creating Value (BPM Patlet 5)</i></p>		
<p><i>Why</i></p> <p>Compliance is a prerequisite for creating value. The value is in certainty due to standardisation as well as performance improvement through end-to-end process integration.</p>	<p><i>What</i></p> <ul style="list-style-type: none"> • Record keeping is crucial for compliance such as: <ul style="list-style-type: none"> ○ Financial statutory compliance ○ Quality compliance ○ Safety compliance ○ Labour law compliance ○ Broad-based Black Economic Empowerment • Keep record of communication. • Define and implement controls to measure and manage statuses of compliance. Allocate responsibility and accountability for compliance. Use an enterprise content management or document management system. 	<p><i>Value</i></p> <p>Certainty increases through compliance.</p>
<p>DP16</p>	<p><i>Statement:</i> Provide communication, collaboration and enterprise content management or document management platform.</p> <p><i>Rationale/Motivation:</i> This allows finding and retrieving documents from one location and sharing them among workers ensuring that the necessary security and archiving measures are in place.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Leverage a new communication culture • Collaboration must be user-friendly, simple, effective and efficient • Subscribe or implements a document management system such as Dropbox or MS Sharepoint • The file transfer service must be easy to integrate • Ensure support for large files. 	

Table 7-17: Example of 'Current To Do' List

SME Growth State Transition	To Do	Key Actions
S3.1.1 The record keeping processes are defined and standardised to keep a record of all transactions as well as all communications.	DP16: Implement a collaboration platform.	Leverage a new communication culture
		Collaboration must be user-friendly, simple, effective and efficient
		Subscribe to or implements a document management system such as Dropbox or MS Sharepoint
		The file transfer service must be easy to integrate
		Ensure support for large files
S3.1.3 The way of working is reviewed to ensure all processes are effective, i.e. that what is being done and the outcome of a process are adding value. Ensure that you do not increase the efficiency of a process that is not effective.	DP7: Design tasks around the outcome and value-adding activities	Remove activities that do not add value
		Minimise activities that do not contribute directly to the final product
		Design tasks around the outcome and not a function
		Give autonomy to workers over when and how they are going to perform the task.

- *Step 3:* The ‘future to do list’ is compiled on the basis of the outcome of the assessment. As illustration the result of the assessment in Table 7-14 and the BPM@SME Guidelines in Table 7-18 and Table 7-19 is the ‘future to do list’, included in Table 7-20.

Table 7-18: S3.1.4 BPM@SME Guideline

<i>SME Growth Transition</i>		
S3.1.4 Processes to consider for specialisation are identified.		
<i>To Do</i>		
DP10: Centralise processes		
DP11: Separate back-office and front-office processes		
<i>Create value through operational excellence (BPM Patlet 3)</i>		
<i>Why</i>	<i>What</i>	<i>Value</i>
Value is created through economies of scale. The value is in certainty due to standardisation as well as performance improvement through end-to-end process integration.	Centralised specialised processes as a start towards shared services. Specialisation usually starts with back -office support processes.	Certainty increases with standardisation. Performance improves with end-to-end integration.
DP10	<p><i>Statement:</i> Components are centralised.</p> <p><i>Rationale/Motivation:</i> Centralisation can benefit from economies of scale, it eases standardisation and is easier to manage.</p> <p><i>Key Actions:</i> The going-in position is to centralise components, unless requirements dictate a decentralised approach.</p>	
DP11	<p><i>Statement:</i> Front-office processes are separated from back-office processes.</p> <p><i>Rationale/Motivation:</i> Front-office processes focus on customer intimacy and require different skills from back-office processes which focus on operational excellence and re-use.</p> <p><i>Key Action:</i></p> <ul style="list-style-type: none"> • Clearly define the processes, the disengagement and the different logic of the front-office and back-office processes • Improve access to information by customer-facing staff. 	

Table 7-19: S3.1.5 BPM@SME Guideline

<p><i>SME Growth Transition</i></p> <p>S3.1.5 The performance of a business process is monitored, starting with the selection of a key performance indicator (KPI) and measurement of this one KPI. An example would be to measure on time delivery or another example would be to monitor the number of rework requests as a result of quality deviations. KPIs are often related to time, cost or quality.</p>		
<p><i>To Do</i></p> <p>DP21: Measure performance</p>		
<p><i>Create value through operational excellence (Process Intelligence)(BPM Patlet 4)</i></p>		
<p><i>Why</i></p> <p>The value is improved performance visible through performance measurement.</p>	<p><i>What</i></p> <p>Monitor performance</p>	<p><i>Value</i></p> <p>Value is created though operational excellence</p>
<p>DP21</p>	<p><i>Statement:</i> Measure performance.</p> <p><i>Rationale/Motivation:</i> Measure performance in order to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> Define a control for each process Reduce cost of financial transactions Measure performance against the control Do strategic planning as a control mechanism Prepare a budget as a control mechanism Ensure accuracy of management information. 	

Table 7-20: Example of 'Future To Do' List

SME Growth State Transition	To Do	Key Actions
S3.1.4 Processes to consider for specialisation are identified.	DP10: Centralise processes	The going-in position is to centralise components, unless requirements dictate a decentralised approach
	DP11: Separate back-office and front-office processes	Clearly define the processes, the disengagement and the different logic of the front-office and back-office processes
		Improve access to information by customer-facing staff.
S3.1.5 The performance of a business process is monitored, starting with the selection of a key performance indicator (KPI) and measurement of this one KPI. An example would be to measure on time delivery or another example would be to monitor the number of rework requests as a result of quality deviations. KPIs are often related to time, cost or quality.	DP21: Measure performance	<ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Ensure accuracy of management information

- *Step 4:* Identify the key actions that are relevant for the SME and prioritise those activities. There are two options for the SME manager. The first option is to focus first on the current state and manage it as an initiative within the current financial period. The actions from the future list are then prioritised and included in the budget for the next financial period. A second option is to consolidate the key actions across both the current and the future lists and to identify the actions relevant to the current financial period and those to be planned for the next budget period. The benefit of the consolidation of the actions is that one action may contribute towards more than one state transition and such an action could then be a higher priority. As an illustration the actions, from both Table 7-17 and Table 7-20, relevant to the SME are identified and prioritised in Table 7-21. The prioritisation is done on the basis of the current financial period and the next budget period. It is important to include the planning for the next financial period as part of the budget preparation for the next financial period. Prioritisation could be based on other criteria as well. It is important to filter the set of key actions per period to a manageable number. Some of the BPM@SME Guidelines may not list key actions as part of the description of the design principle. In such cases include the design principle as an indication of the action recommended.

Table 7-21: Identification of Prioritisation of Key Actions

Key Actions	Prioritisation
Leverage a new communication culture	Not priority
Collaboration must be user-friendly, simple, effective and efficient	Not priority
Subscribe to or implements a document management system such as Dropbox or MS Sharepoint	Current budget period
The file transfer service must be easy to integrate	Not priority
Ensure support for large files.	Not priority
Remove activities that do not add value	Next budget period
Minimise activities that do not contribute directly to the final product	Not priority
Design task around the outcome and not a function	Not priority
Give autonomy to workers over when and how they are going to perform the task.	Not priority
The going-in position is to centralise components, unless requirements dictate a decentralised approach	Not priority
Clearly define the processes, the disengagement and the different logic of the front-office and back-office processes	Next budget period
Improve access to information by customer-facing staff.	Current budget period
Define a control for each process	Next budget period
Reduce cost of financial transactions	Not priority
Measure performance against the control	Next budget period
Do strategic planning as a control mechanism	Current budget
Prepare a budget as a control mechanism	Current budget
Ensure accuracy of management information.	Next budget period

- *Step 5:* The SME manager focuses on the priority actions per budget period, with or without the assistance of an SME coach. The key actions identify ‘what’ should be done, but not necessarily ‘how’ it should be done. In South Africa an SME manager may approach SME incubators providing SME coaching assistance such as the Industrial Development Corporation, the Small Enterprise Development Agency (SEDA), the Innovation Hub part of the Gauteng Department of Economic Development or Fetola a South African enterprise development specialist consultancy. As an illustration the SME manager will focus on the following actions on the basis of the prioritisation in Table 7-21:
 - The current budget period:
 - Subscribe to or implements a document management system such as Dropbox or MS Sharepoint
 - Improve access to information by customer facing staff
 - Do strategic planning as a control mechanism

- Prepare a budget as a control mechanism
- o The next budget period:
 - Remove activities that do not add value
 - Clearly define the processes the disengagement and the different logic of the front-office and back-office processes
 - Define a control for each process
 - Measure performance against the control
 - Ensure accuracy of management information.

7.5 An Awareness Regarding the BPM@SME Approach

As part of the reflection during the development phase of Research Sub-Cycle 4 the following observations were made:

- The SME managers could follow the BPM@SME approach and by means of selection get to a list of BPM related actions to consider in assisting the SME through the transitions associated with growth.
- The volume of information could be intimidating.
- Cross-referencing the material between the 5S SME Growth State Transition Model and the BPM@SME Guidelines is not user-friendly.
- Keeping track of the selections through the process is time-consuming.

To address these issues, it was suggested to consider the development of a user-friendly, non-intimidating interactive platform for the SME manager to apply the BPM@SME Approach described in section 7.4.

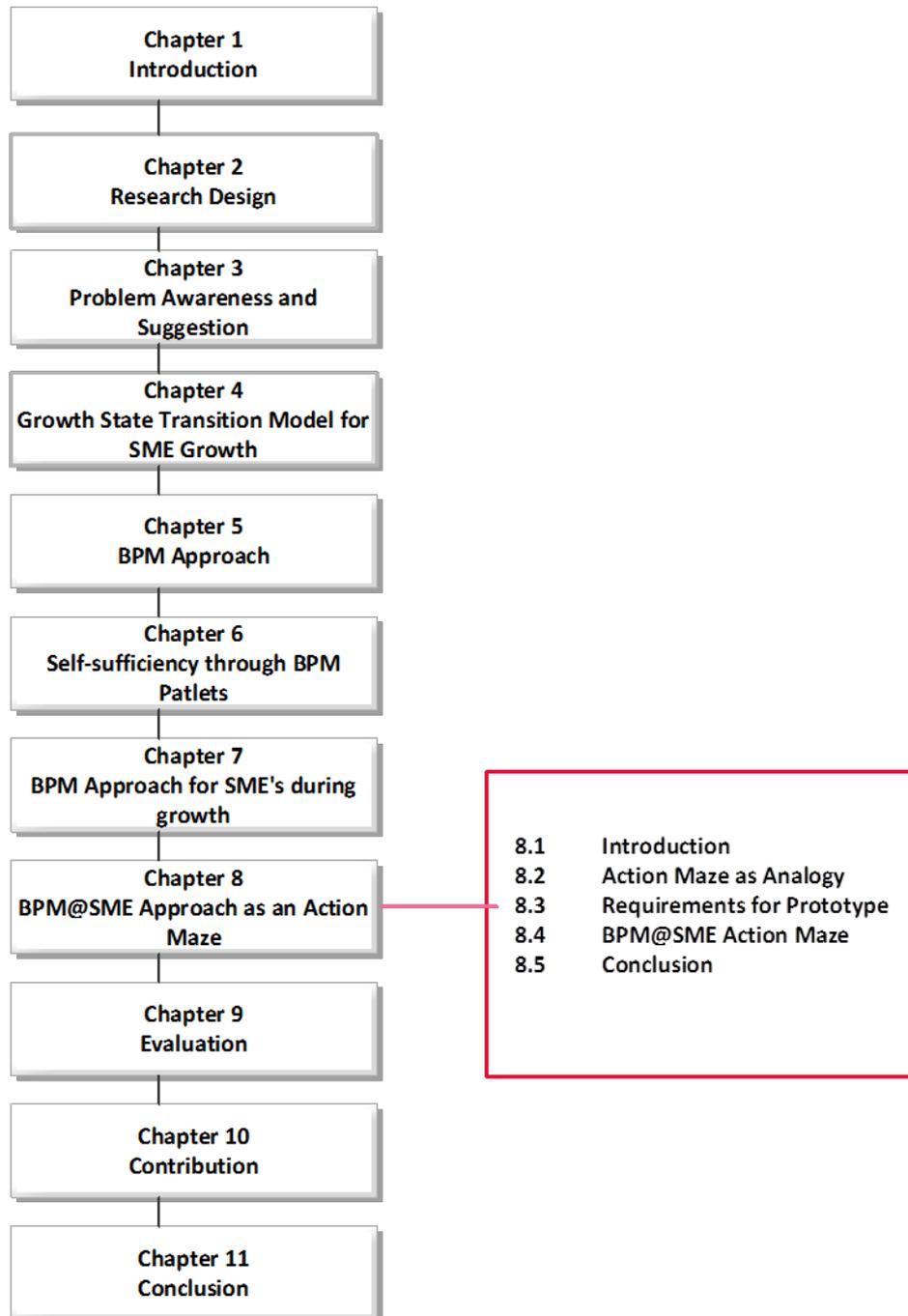
7.6 Conclusion

In this chapter, the BPM Patlets, defined in Chapter 6, and the SME state transitions, defined as part of the 5S SME State Transition Model in Chapter 4, were successfully mapped to 40 BPM@SME Guidelines. The definition of the BPM@SME Approach highlighted the steps to be followed by the SME manager to benefit from the 5S SME Growth State Transition assessment and the BPM@SME Guidelines. The restriction identified was, however, that the BPM@SME Approach is not suitable for a sequential document-based environment.

In Chapter 8 the objective is to find an alternative way of packaging the 5S SME Growth State Transition assessment and the BPM@SME Guidelines so as to create a user-friendly, non-intimidating environment for the SME manager to apply the BPM@SME Approach. The proposal is to package the 5S SME Growth State Transition assessment and the BPM@SME Guidelines as an action maze to ensure a user-friendly and non-intimidating experience when using the BPM@SME Approach.

Chapter 8 : BPM@SME Action Maze

Chapter 8 Outline



8.1 Introduction

The objective of Research Sub-Cycle 5 is to package the content of the BPM@SME Approach in a more user-friendly and less intimidating way. The analogy of an action maze [Arneil & Holmes, 2009] is used with a definition and example included in section 8.2. The functionality required to package the BPM@SME Approach as an action maze is listed in section 8.3 and the BPM@SME Action Maze prototype is included in section 8.4.

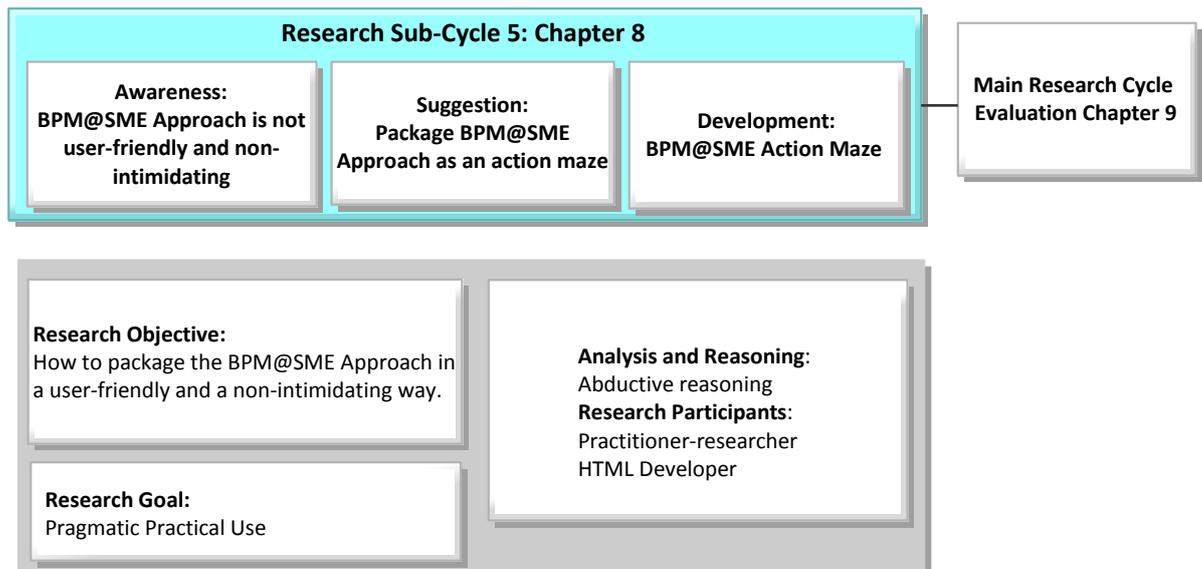


Figure 8-1: Research Sub-Cycle 5

8.2 Action Maze as Analogy

The approach to helping SME managers and mentors to benefit from the BPM@SME Approach is based on the concept of an action maze. An *action maze* is a kind of interactive case-study where the user is presented with a situation and a number of proposed options, for a course of action to deal with the situation. On choosing one of the options, the resulting situation is then presented, again with a set of options. Working through this branching tree is like negotiating a maze, hence the name 'action maze'. Action mazes can be used for many purposes, including problem-solving, diagnosis, procedural training, and surveys or questionnaires [Arneil & Holmes, 2009]. The outcome of the prototype is similar to the outcome of the product Quandary from the company Half Baked Potatoes and more information is available at the following websites:

- <http://www.halfbakedsoftware.com/quandary.php>
- http://www.halfbakedsoftware.com/quandary_tutorials_examples.php

- http://www.crsol.com/knowledge_center/pfat/perffact.htm

As an illustration of the concept of an action maze an example by Christensen/Roberts Solutions, using Quandary as an application is included in Figure 8-2. The example is based on the implementation of a diagnostic tool to help you *enhance performance in the workplace* by asking a series of questions and generating a checklist of steps to take in order to solve the problem.

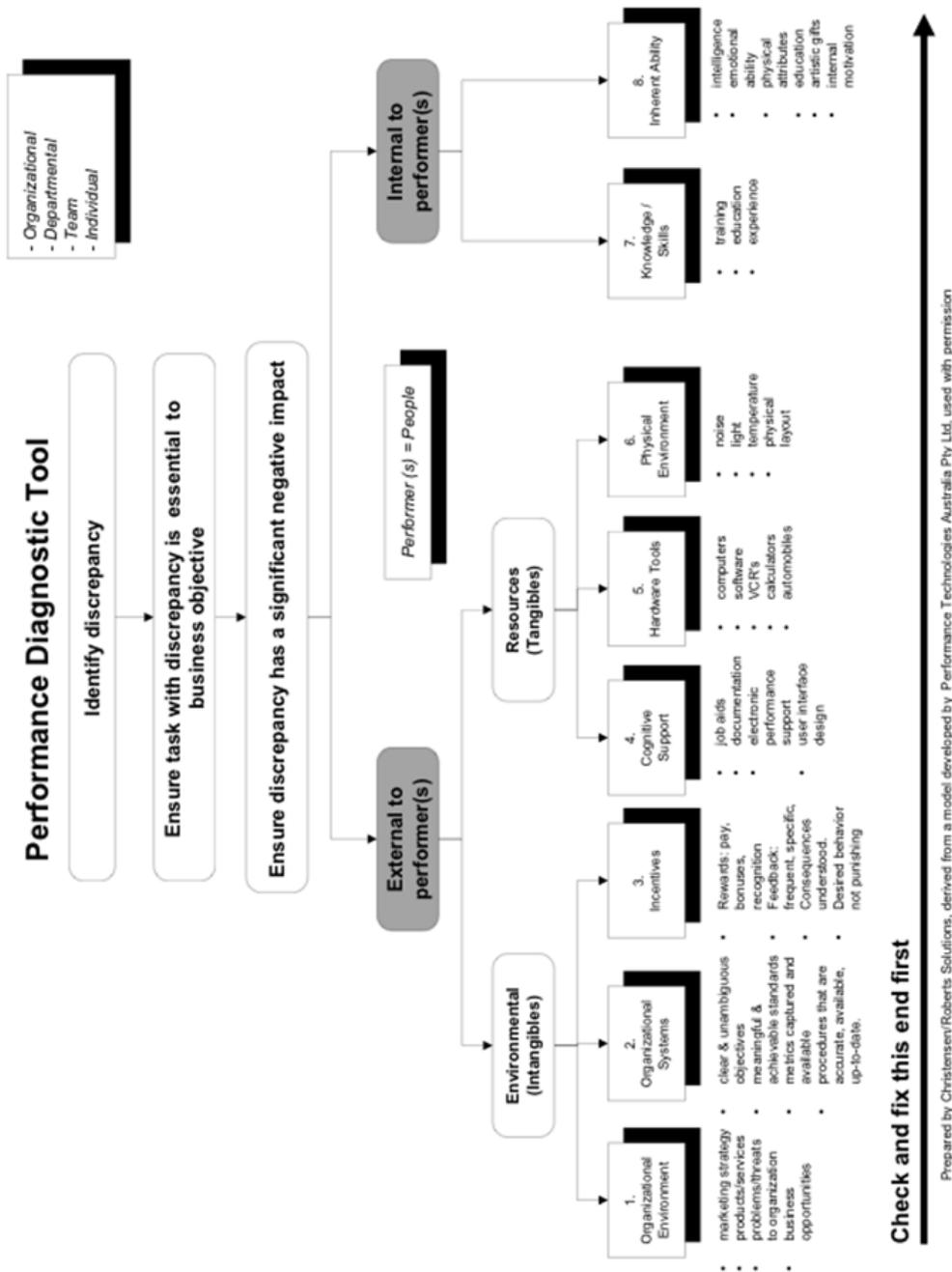


Figure 8-2: Action Maze - Performance Diagnostic Tool

The functionality included in this example of a diagnostic tool is as follows and is illustrated in the figures as referenced:

- *Provide information on the tool:* Performance Factors Analysis Tool Screen (Screen1 – see Figure 8-3).
- *Ask a question and give options to select as an answer:* Identification (Screen 2 - Figure 8-4).
- *Show more detail:* Impact and Cost of the discrepancy (Screen 3 - Figure 8-4 and text below figure).
- *Show the results:* Results (Screen 4 and 5 – see Figure 8-6 and Figure 8-7).

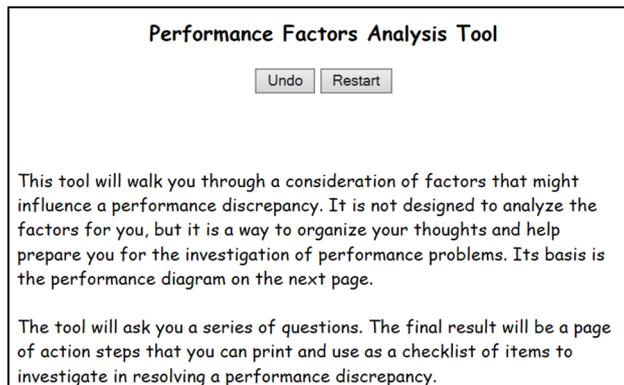


Figure 8-3: Screen 1

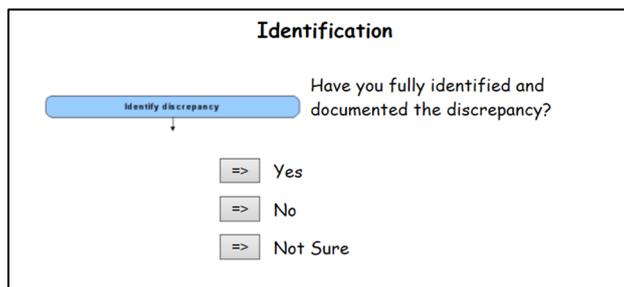


Figure 8-4: Screen 2

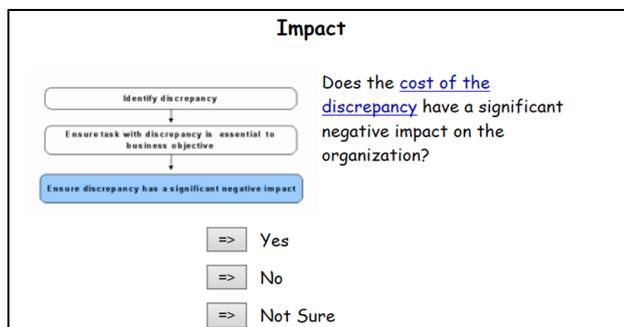


Figure 8-5: Screen 3

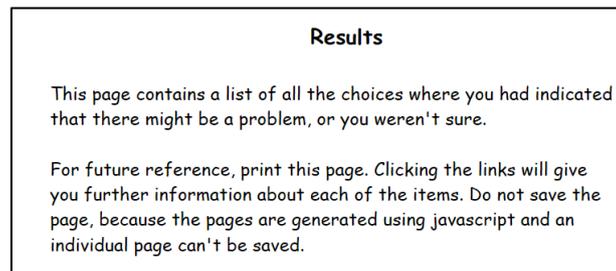


Figure 8-6 : Screen 4

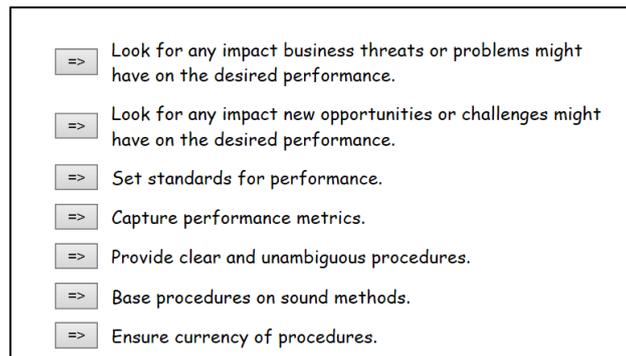


Figure 8-7: Screen 5

8.3 Requirements for Prototype

The functionality required for the five steps of the BPM@SME Approach (section 7.4) can be summarised as:

1. Complete assessment through the selection of given option.
2. List the selected current 'To Do' actions.
3. List the selected future 'To Do' actions.
4. Prioritise the activities through the selection of an option.
5. List or print the final list of activities.

Converting the BPM@SME Approach (including the 5S SME Growth State Transition Assessment and the BPM@SME Guideline) into the BPM@SME Action Maze, the following functionalities were identified as additional requirements for the action maze:

- Selecting an option from a list.
- Listing the results of the options selected.
- Printing the list.

Based on the functionality of the diagnostic tool (section 8.2) the following functionality was added onto the requirement for the BPM@SME Action Maze:

- Display information.

- Display more information if required.

Two additional features were included that may assist the SME manager or SME mentor to make a more informed decision about the prioritisation, namely:

- Display all state transitions impacted by a BPM Patlet
- Display all state transition impacted by a Design Principles.

The description of the prototype action maze developed on the basis of on these lists of required features required is included in section 8.4.

8.4 BPM@SME Action Maze

The prototype was developed by a HTML developer and the complete version of the prototype is available on the following website: www.eonsaway.co.za/amaze.

To illustrate the content, the remainder of this section provide a selection of screens from the prototype action maze:

- Entry screen in Figure 8-8
- Assessment screen in Figure 8-9
- Show more detail screen in Figure 8-10
- Results screen in Figure 8-11
- Display state transitions per BPM Patlet in Figure 8-12
- Display state transitions per design principle in Figure 8-13



Action Maze



Figure 8-8: BPM@SME Action Maze Entry Screen

S1.1 Product leadership as differentiator in the market

The SME is offering a unique or superior product to the market. It is important for the SME to gain and/or maintain the product leadership in the market.

S1.1.1 Diversification by acquisition is a strategy to gain and/or maintain product leadership in the market.

Select an Option ▾

Details

- Current State
- Future State
- Not Applicable

Select an Option ▾

product/service innovations is a strategy to gain and/or maintain market through new products.

Figure 8-9: BPM@SME Action Maze Assessment Screen

S1.1.1 Details ✕

SME Growth Transition

S1.1.1 Diversification by acquisition is a strategy to gain and/or maintain product leadership in the market.

To Do

- DP1: Separate processes for each business unit
- DP4: Ensure end-to-end integration of processes
- DP5: Standardise processes

Create Value through a One Time Event (BPM Patlet 6)

<i>Why</i>	<i>What</i>	<i>Value</i>
------------	-------------	--------------

<i>Why</i>	<i>What</i>	<i>Value</i>
Diversification by acquisition is a strategy to accelerate going to market as a product leader or to get access to new markets or distribution channels.	Standardise processes between the enterprises impacted by the acquisition. Understand and manage variation in processes between the enterprises impacted by the acquisition. Integrate processes to ensure end to end integration of processes of the enterprises impacted by the acquisition.	Certainty increases if processes are standardised resulting in more predictable outcomes. Certainty increases if sustainability increases through standardised processes as part of a one-time event such as a merge, acquisition or transformation
DP1	<p><i>Statement:</i> Business units are autonomous therefore create a separate process for each business unit.</p> <p><i>Rationale/Motivation:</i> Autonomous business units can adapt to changes quickly because they do not need to align with other business units.</p>	

Close
Print

Figure 8-10: BPM@SME Action Maze - Show More Detail Screen

Your Assessment Results:

S1.1.1 *Current* To Do's:

- **DP1:** Separate processes for each business unit
- **DP4:** Ensure end-to-end integration of processes
- **DP5:** Standardise processes

S1.1.2 *Current* To Do's:

- **DP1:** Separate processes for each business unit
- **DP4:** Ensure end-to-end integration of processes
- **DP5:** Standardise processes

S1.1.3 *Future* To Do's:

- **DP1:** Separate processes for each business unit
- **DP4:** Ensure end-to-end integration of processes
- **DP5:** Standardise processes

Close

Print

17 of 24 - Clipboard

Figure 8-11: BPM@SME Action Maze - Results Screen

BPM Patlet 2

Create value through Customer Intimacy

Relevant SME Transitions:

S1.1.3 Small and incremental product/service modifications is a strategy to gain and/or maintain product leadership in the market.

S1.4.1 Customer preference requires diversification of marketing, products and administrative practices, Scanning customer preference and acting on it is a strategy to gain and maintain the competitive advantage in the market.

S1.4.2 High performance enterprises have a stronger awareness of customers and customer needs and it is a strategy of the SME to know and obtain customers to become/remain a high performance enterprise.

Figure 8-12: BPM@SME Action Maze - Display State Transitions per BPM Patlet

Relevant SME Transitions:

S1.1.1 Diversification by acquisition is a strategy to gain and/or maintain product leadership in the market.

S1.3.2 Geographical expansion is a strategy towards diversification and getting entry to new markets.

S3.1.2 Review the way of work to eliminate inefficiencies and to improve productivity. Check for and remove redundant activities and then implement and monitor the level of standardisation of the process to reduce rework over time. Note: Efficiency is referring to how work is being done.

S3.3.1 Formalise and institutionalise rules (policies, procedures and standards). SME growth is often associated with an increase in staff, and it is important to set the rules and apply the rules consistently to all staff.

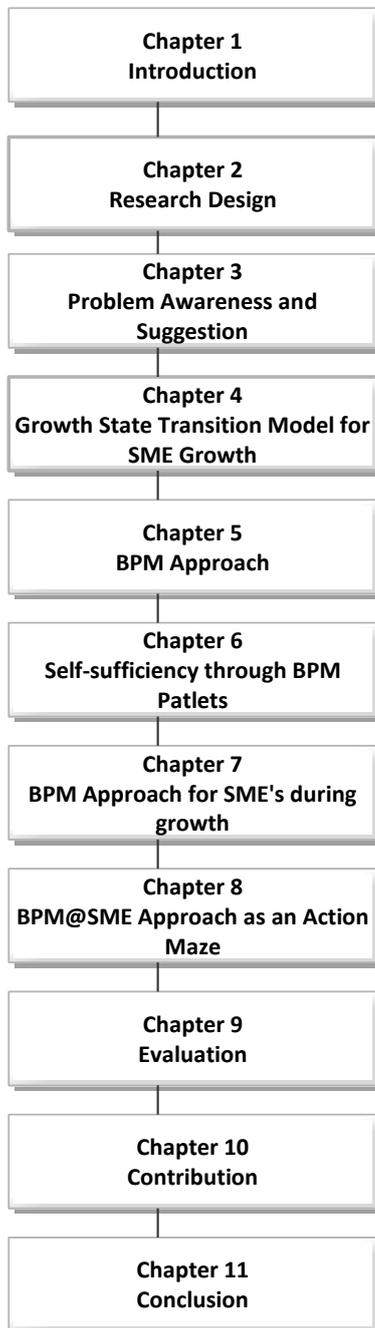
Figure 8-13: BPM@SME Action Maze - Display State Transitions per Design Principle (DP5)

8.5 Conclusion

In Chapter 8 the fifth research cycle is described. The research objective of the Research Sub-Cycle 5 was to develop a prototype so as to package the BPM@SME Approach (including the 5S SME Growth State Transition Assessment and the BPM@SME Guideline) in such a way that the BPM@SME Approach is more user-friendly and less intimidating. The BPM@SME Action Maze prototype is available at www.eonsaway.co.za/amaze. The evaluation of the BPM@SME Approach and the BPM@SME Action Maze are discussed in Chapter 9.

Chapter 9 : BPM@SME Evaluation

Chapter 9 Outline



- 9.1 Introduction
- 9.2 Evaluation Method and Scope
 - 9.2.1 Evaluation Participants
 - 9.2.2 Formal Evaluation Process
 - 9.2.3 What was Expected from Experts
- 9.3 Evaluation of the BPM@SME Approach
 - 9.3.1 Artefact to be Evaluated
 - 9.3.2 Observations and Reflection after Briefing of Experts
 - 9.3.3 Expert Opinion of BPM@SME Approach
 - 9.3.4 Additional Comments
 - 9.3.5 Observations and Reflection based on the Evaluation of the BPM@SME Approach
- 9.4 Conclusion

9.1 Introduction

The evaluation of the artefacts designed by the BPM@SME research has been done as part of the first three research sub-cycles as depicted in Figure 9-1. The evaluation of the 5S SME Growth State Transition Model was discussed in sections 4.3 and 4.4. A discussion of the evaluation of the BPM Canvas™ Framework is found in sections 5.5 and 5.6. In section 6.5 the expert opinion of the BPM Patlets is included. The focus of Chapter 9 is the evaluation of the BPM@SME Approach from the perspective of SME mentors (also referred to as coaches) sharing their expert opinion.

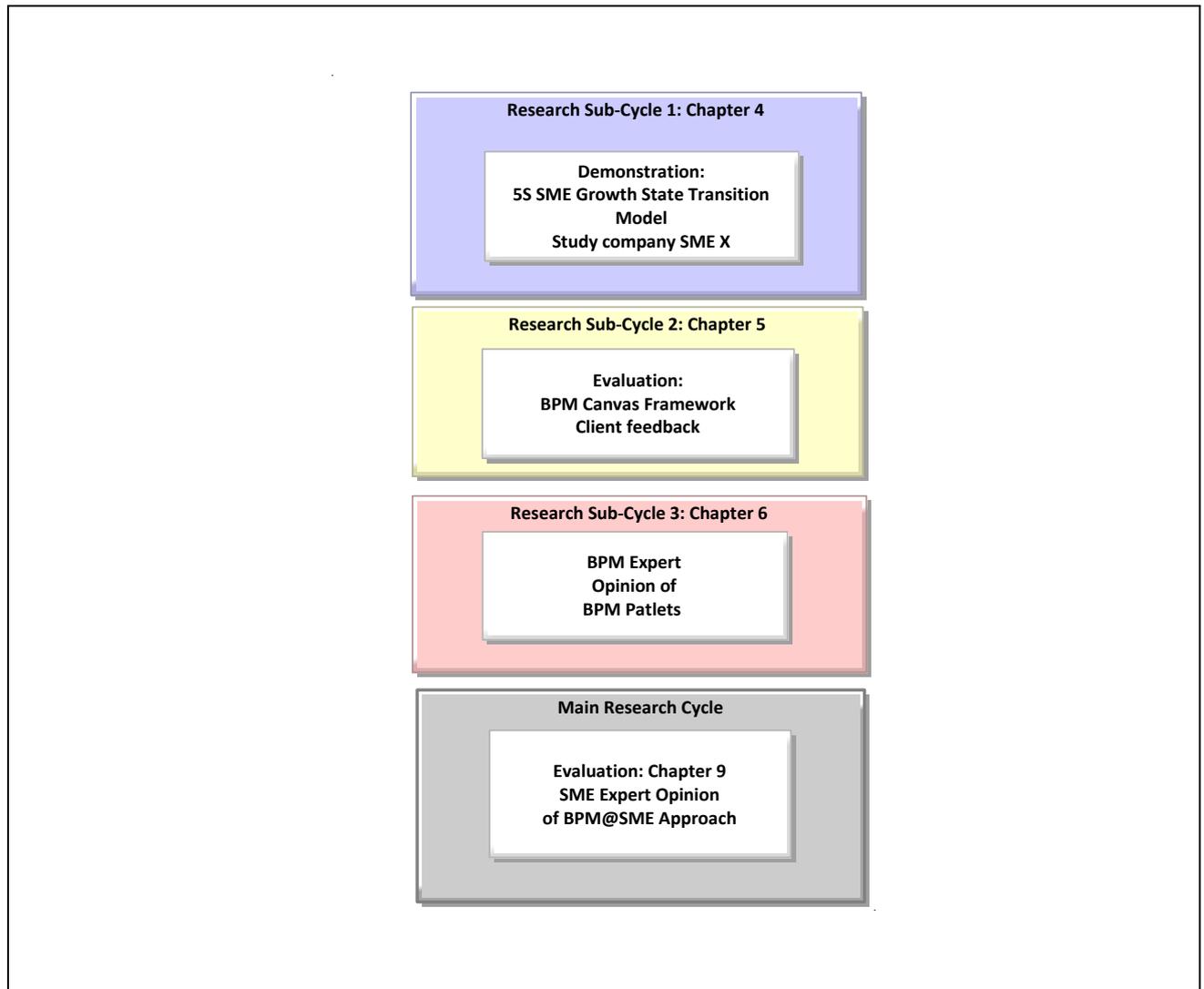


Figure 9-1: Evaluation of the BPM@SME Research Artefacts

The process followed for the evaluation of the BPM@SME Approach is discussed in section 9.2. The outcome of the formal evaluation process as well as observations and reflections are presented in section 9.3. Section 9.4 concludes Chapter 9.

9.2 Evaluation Method and Scope

Expert opinion was used as evaluation method in the evaluation of the BPM@SME Approach as artefact. *Expert opinion* refers to the method of consulting an individual expert or a group of experts to draw on the experience of the expert(s) to assist in problem identification, clarification of issues and/or the evaluation of a products or an artefact [Poulson et al., 1996]. Expert opinion is often used to identify potential problems with products before release for more comprehensive evaluation or use, but can be used at any stage of design or development. It is, however, important to ensure that the experts consulted have no prior involvement in the design of the product to be evaluated, as otherwise it will be difficult to receive impartial views.

9.2.1 Evaluation Participants

For the formal evaluation process, two experts in the field of SME management, mentorship and/or coaching, with exposure to business process management, were consulted to draw on their experience to evaluate and comment on the BPM@SME Approach. One expert had specific experience in the information technology related industry and the other expert has been involved in a broader set of industries. None of the experts have been involved in the design or development of the BPM@SME Approach.

In addition some comments shared during an informal discussion with the Founder and Director of a company that specialises in supporting accelerated growth for individual SMEs, are included as part of the additional opinion and view sections (section 9.3.4). The third expert is an ‘enterprise and supplier development’ specialist with 30 years cross-sector experience supporting SME growth. The expert works in a range of sectors, with small and medium organisations and the company support SMEs with a national team of over 50 specialist consultants and mentors.

9.2.2 Formal Evaluation Process

The formal expert opinion evaluation process consisted of two sessions, i.e. a briefing session per individual expert and a combined final evaluation session. There was also one informal discussion with a third expert.

The briefing session took two hours per expert and was conducted in December 2015. The objective of the briefing session was to share the research design and the individual research artefacts with the experts. Based on the views and opinions of the experts adjustments were made to the packaging of the 5S SME Growth State Transition Model.

The experts were required to prepare for the evaluation session, with the preparation time estimated not to exceed two hours. The two experts then each received an evaluation pack to be used as input for their preparation for the evaluation session. The following information was shared in the evaluation pack:

- A description and overview of the BPM@SME research to provide context to the artefacts to be evaluated.
- A discussion of the evaluation process including information on the evaluation methods, participants selected to provide an expert opinion, the artefacts to be evaluated and the expected contribution of an expert.
- A summary of the observation and reflection based on the individual discussions during the briefing sessions.
- Six questions to be answered as part of the final evaluation session.
- The content of Table 4-18 to Table 4-25 in the format of an assessment instrument.
- The set of BPM@SME Guidelines included in Appendix B .
- Hyperlinks were provided between the assessment statements and the BPM@SME Guidelines to make it easier to navigate between the two sets of tables.

The final evaluation session took place in March 2016. This formal evaluation session followed a structured approach, with two experts completing a questionnaire during the same session. The session was scheduled with duration of one and a half hours. In order to ensure that the same information was shared with both experts a single session was scheduled to answer specific questions. The experts were allowed to ask questions and the discussion was facilitated as a single session to ensure that both experts based their opinion on the same information as shared either in the evaluation pack or during the discussion. The experts each completed their own questionnaire. It was interesting that the discussions were not about the specific questions included in the questionnaire but about the broader context of SMEs in South Africa.

The informal session with a third expert took place in March 2016 focusing on an explorative discussion on the way forward to make the outcome of the BPM@SME research available to the broader SME community in South Africa.

9.2.3 Expectation from Experts

The objective of the final evaluation session was for the experts to give feedback, based on their expertise, of the potential value and usability of the BPM@SME Approach (1) to the SME mentor or coach and (2) to the SME manager.

A questionnaire was designed to get the opinion of the experts regarding:

- The reality of the problem statement and the constraints.
- The value of the BPME@SME artefacts.
- The potential target audience for the different artefacts of the BPM@SME research.

The expectation was that an expert would give an opinion or view for each of the questions stated per category as included in the section 9.3.3. The categories covered in the questionnaire were:

- Field of expertise of the experts.
- Opinion regarding the problem statement, the identified gap and constraints.
- Opinion regarding the 5S SME Growth State Transition as assessment instrument.
- Opinion of the BPM@SME Guidelines.
- Opinion of the BPM@SME Action Maze prototype.
- Opinion of the value of the BPM@SME Approach for the SME domain.
- Additional opinions and views.

9.3 Evaluation of the BPM@SME Approach

9.3.1 Artefact to be Evaluated

The artefact to be evaluated was the BPM@SME Approach, as presented in Chapter 7 and Chapter 8. The purpose of the BPM@SME Approach is to provide an assessment instrument and guidelines to assist SME managers (directly or via an SME mentor or coach), during the typical transitions of SME growth, to benefit from BPM as a management approach.

The following two research artefacts are referenced, but since these artefacts have already been evaluated in previous cycles the evaluation of these artefacts themselves were excluded from this final evaluation cycle:

- The 5S SME Growth State Transition Model (section 4.3) as assessment instrument, evaluated through a demonstration.
- The evaluation of the BPM Patlets (section 6.5) to determine whether there is any reason to disqualify the BPM Patlets as input for Research Sub-Cycle 4 to develop the BPM@SME Approach. A BPM expert (senior BPM consultant, industrial engineer with more than 20 years of experience) gave his opinion on the suitability of the BPM Patlets as input towards further research sub-cycles.

9.3.2 Observations and Reflection after Briefing of Experts

The objective of the briefing of the SME experts was to share information about the BPM@SME research. It was important to provide the context of the research and the expectation from SME experts, allowing the experts to decide whether they are comfortable to provide an expert opinion as part of the evaluation of the BPM@SME Approach. Even during these individual briefing sessions important observations resulted in the following reflection regarding the BPM@SME research:

- Both experts highlighted that, within South Africa, SME mentors or coaches would benefit from a BPM@SME Approach to use as part of their interaction with the SMEs.

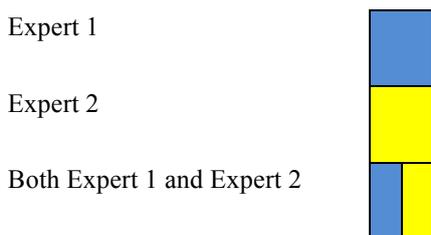
- Both experts recommended that the initial focus should be on the roll-out of the BPM@SME Approach to the SME mentors or coaches in South Africa. Making the BPM@SME Approach available to SME managers should be part of a second phase.
- In order to enhance the value of the BPM@SME Approach, the experts recommended the packaging of the 5S SME Growth State Transition Model as an assessment instrument.
- Even for non-BPM purposes there was interest in the 5S SME Growth State Transition Model as it could contribute towards the mentoring and coaching of SME management. It was mentioned that available assessment instruments (for non-BPM purposes) are often not based on a theoretical foundation, and that the 5S SME Growth State Transition Model as assessment could be used for other assessment purposes as well.

These reflections were based on informal observations during the informal individual briefing sessions. The two SME experts didn't have any other involvement with one another outside the context of the BPM@SME research. These informal observations were echoed as part of the formal evaluation as discussed in Section 9.3.3.

9.3.3 Expert Opinion of BPM@SME Approach

The formal evaluation consisted of answering the questions in the questionnaire and sharing their opinion in the open ended questions. The responses by each of the experts to each of the questions in the questionnaire are presented in section 9.3.3.1 to section 9.3.3.6.

Expert 1 had specific experience in the information technology related industry and Expert 2 has been involved in a broader set of industries. Both experts were SME managers and understood the typical challenge of SME growth. The responses from the two experts were coded with different graphical patterns in the result tables, namely:



9.3.3.1 Field of Expertise of the Experts

To get an indication of the level of expertise of the experts involved in the evaluation, each expert were ask to indicate their experience with regards to SMEs and business management concepts. The respective responses are reflected in Table 9-1.

Table 9-1: Level of Expertise

Indicate your level of expertise per area.				
	<1 Year	1-3 Years	3-5 Years	>5 Years
SME management				
SME mentor or coach				
Business management concepts				

9.3.3.2 Opinion regarding Problem Statement, Identified Gap and Constraints

To get an indication on whether the problem statement and the objective of the research is a reflection of reality, the set of questions, with responses, as presented in Table 9-2 was posed.

Table 9-2: Opinion regarding Problem Statement, Identified Gap and Constraints

Indicate on the rating scale your opinion regarding the following statements related to the problem statement, identified gap and the listed constraints				
	Strongly Disagree	Disagree	Agree	Strongly Agree
There is an expectation in South Africa that SME growth will result in job creation.				
SME growth in South Africa is limited.				
Job creation through SME growth is lower than envisioned in South Africa.				
A lack of business skills is a contributing factor to limited SME growth in South Africa.				
Awareness of business process management as business skill is limited within the South African SME domain.				
SME resource poverty is a reality in South Africa.				
Due to SME resource poverty SMEs are reliant on self-sufficiency or SME mentors or coaches in South Africa				
<p>Comments:</p> <p><i>Expert 1:</i></p> <ul style="list-style-type: none"> Resource poverty includes lack of time, money and expertise. Resource poverty forces self-sufficiency, but access to mentors and coaches are also limited. Access to government agencies is unaffordable and limited and the skill of coaches is low. An understanding to what extent SME formation is being driven by a political agenda and BEE Scorecard is important in the South African BEE domain. <p><i>Expert 2:</i></p> <ul style="list-style-type: none"> The political drive to develop SMEs is often based on people who wants jobs rather than being an entrepreneur – hence failure. This leads to asking the question, ‘Can SME development occur in a political environment rather than a business environment?’. Typical SME mentors in South Africa do not have the business skill either. 				

9.3.3.3 Opinion regarding the 5S SME Growth State Transition Assessment

To determine the percentage of SME managers and the percentage of SME mentors or coaches that could complete and benefit from the 5S SME Growth State Transition Assessment, with or without assistance (such as online help, training, facilitation), the set of questions, with responses, as presented in Table 9-3 was posed.

Table 9-3: Opinion Regarding the 5S SME Growth State Transition Assessment

Indicate on the rating scale your opinion regarding the statements related to the assistance required to benefit from the 5S SME Growth State Transition Assessment					
	0%	25%	50%	75%	100%
SME managers could complete and benefit from the 5S SME Growth State Transition Assessment without assistance.					
SME managers could complete and benefit from the 5S SME Growth State Transition Assessment with assistance.					
SME mentors or coaches could complete and benefit from the 5S SME Growth State Transition Assessment without assistance.					
SME mentors or coaches could complete and benefit from the 5S SME Growth State Transition Assessment with assistance.					
Comments: <i>Expert 1:</i> <ul style="list-style-type: none"> SMEs might require a facilitated process to benefit from the 5S SME Growth State Transition Assessment as a tool, mediated by a mentor/coach. <i>Expert 2:</i> <ul style="list-style-type: none"> Mentors do not typically have the skills to be true business mentors (in South Africa). 					

9.3.3.4 Opinion of the BPM@SME Guidelines

The objective of the set of questions, with responses, as presented in Table 9-4 was to determine the most relevant content of the BPM@SME Guidelines for the SME manager and the SME mentors or coaches.

Table 9-4: Opinion of the BPM@SME Guidelines

Indicate on the rating scale your opinion regarding the statements related to the value of the content of the BPM@SME Guidelines for the SME managers and the SME mentors or coaches respectively.					
	0%	25%	50%	75%	100%
**Linking the selected SME Growth State Transition to the TO DO actions is relevant to the SME managers.					
***The BPM Patlet information is relevant to the SME manager.					
The BPM Design Principle Detail information is relevant to the SME manager.					

*Linking the selected SME Growth State Transition to the TO DO actions is relevant to the SME mentors or coaches.						
The BPM Patlet information is relevant to the SME mentors or coaches.						
The BPM Design Principle Detail information is relevant to the SME mentors or coaches.						
<p>Notes: Expert 1: question marked with a * was not completed Expert 1: the comment marked with ** is related to the question marked with ** Expert 1: the comment marked with *** is related to the question marked with ***</p> <p>Comments: <i>Expert 1:</i></p> <ul style="list-style-type: none"> **State transition may be less important than having a guide to what actions are required in pursuit of desired outcomes. ***Comment second statement – Use of patterns in design thinking would provide useful solutions defined in a previous context to be adjusted for own use. <p><i>Expert 2:</i></p> <ul style="list-style-type: none"> Relevancy is based on real need opposed to perceived need. 						

9.3.3.5 Opinion of the Value of the BPM@SME Approach

The objective of the set of statements presented in Table 9-5 was to get an indication of the potential value of the BPM@SME Approach for the SME managers or the SME mentors of coaches.

9.3.3.6 Opinion of the BPM@SME Action Maze Prototype

The objective of the set of statements presented in Table 9-6 was to determine if the functionality offered by the BPM@SME Action Maze would make the BPM@SME Approach more attractive for the SME manager, or the SME mentor or coach in comparison with a sequential document format.

Table 9-5: Opinion of the Value of the BPM@SME Approach

Indicate based on your opinion the potential value of the BPM@SME Approach (whether via self-sufficiency or with involving a mentor or coach).			
	Areas of Potential Value		
	Expert 1 SME Manager	Expert 1 SME Mentor/Coach	Expert 2 – Both for SME Manager and the SME Mentor/Coach
Create awareness of the SME Growth State Transitions associated with SME growth.			
Create awareness of BPM as management approach.			
5S SME Growth State Transition assessment to identify priority transitions per SME.			
Identification of the ‘what’ BPM actions to support the priority transitions identified for the SME.			
Understanding of the BPM related problem, solution and design principles as foundation for the ‘what’ actions.			
Comments: <i>Expert 1:</i> <ul style="list-style-type: none"> Value is as guide and framework for actions in pursuit of desired outcomes, rather than knowing any theoretical underpinnings. <i>Expert 2:</i> <ul style="list-style-type: none"> The value depends on level of the person. Do not want too much detail as it may lead to confusion. Keep the content practical. 			

Table 9-6: Opinion of the Action Maze Prototype

Indicate based on your opinion the Action Maze functionality that would make the use of the BPM@SME Approach more attractive for the SME manager or the SME mentor or coach.		
	Action Maze Value-adding Functionality	
Online navigation to see more detail if option is selected.		
Online assessment with digital tracking of the selected states.		
Navigation from the BPM Patlets to the SME growth state transitions associated with the selected BPM Patlet		
Navigation from the Design Principles to the SME growth state transitions associated with the selected Design Principle.		
Printing of the selected ‘To Do’ list as selected during the assessment (shopping basket principle).		
Printing of the selected ‘To Do’ list including the detail descriptive information.		
Comments: <i>Expert 2:</i> <ul style="list-style-type: none"> Consider graphics for the BPM@SME Action Maze 		

9.3.4 Additional Comments

The two experts involved in the formal evaluation exercise added the following comments in the space provided for additional comments and views:

- The question is whether the 5S SME Growth State Transition Assessment could be used to give some direction to define a SME growth strategy if no growth strategy is in place? The assumption is that a growth strategy should be in place prior to completion of the 5S SME Growth State Transition Assessment.
- The second question is whether it is possible to associate an SME growth state transition with a specific SME stage of growth, referring back to the expectation, from SME managers and SME mentors or coaches, to use SME growth stage models as discussed in 3.3.

In an informal discussing with the third expert the following were highlighted:

- In South Africa resource poverty is a reality with a specific constraint the resources to enable processes with an integrated information system platform. This statement was made in the context of the SMEs involved in the programmes run by the third expert, typically not having the finances to purchase integrated ERP and/or CRM systems.
- SME managers are expecting a clear indication of the level of maturity for example the SME is level 1 or level 2 or level 3. She is typically classifying the SME maturity level according to stage, the problem associated with the SME growth stage models as discussed in section 3.3.1.
- The BPM@SME Approach could be hosted on a portal available for knowledge sharing among SME managers and SME mentors and coaches.

9.3.5 Observations and Reflection based on the Evaluation of the BPM@SME Approach

The opinion of the experts taking part in the formal evaluation process contributed towards the following observations and reflections related to the BPM@SME research:

- Limited SME growth, the lack of business skills to grow SMEs, resource poverty, limited awareness of BPM as management approach and the role of the SME mentor or coach are all a reality in the SME community in South Africa.
- Although some SME managers would benefit from the 5S SME Growth State Assessment a phased approach is recommended, starting with knowledge transfer of the 5S SME Growth State Assessment to the SME mentors or coaches.
- Although there would be some interest from SME managers in the BPM Patlets the SME mentors or coaches would benefit more by having access to the BPM-related information.
- There is a difference in the opinion of the value of the BPM@SME Approach with the one expert more interested in the value of BPM-related perspective and the other expert more interested in the value of the SME-related perspective.

- The experts shared the opinion that the BPM@SME Action Maze would make the BPM@SME Approach more attractive for the SME manager, or the SME mentor or coach in comparison with a sequential document format.
- Some SMEs would first have to define a SME growth strategy, but the 5S SME Growth State Transition Assessment could be rephrased to contribute towards the formulation of a growth strategy.
- All three experts, being part of the formal and the informal evaluation mentioned the expectation from SME managers of a SME growth stage model with some form of prediction of actions per stage and an assessment to determine the stage of SME growth. Considering the criticism of SME growth stage models discussed in section 3.3.1 it is important to create awareness of the difference between the concept of a 'stage' and a 'state'.

9.4 Conclusion

The outcome of the evaluation of the BPM@SME Approach, based on expert opinion, confirmed the problem statement, namely that an approach to assist SME managers to benefit from BPM as management approach is lacking. The reality of resource poverty in the South African SME domain was also confirmed. It was found that the BPM@SME Approach was a useful and well-grounded instrument to address the problem to assist SME managers to benefit from BPM as management approach.

Introduction to the content described in the BPM@SME Approach, specifically via a digital platform, would make using the content and the assessment more attractive for SME managers, as well as SME mentors or coaches.

From the evaluation, there is a clear indication that the initial target market for the BPM@SME Approach should be the SME mentors or coaches, and not necessarily the SME managers. It was also found that although there would be a number of SME managers that would benefit directly from having access to the BPM@SME Approach, on paper or on a digital portal, the majority of SME managers would need assistance from a mentor or coach to benefit from the BPM@SME Approach.

Chapter 10 : Summary of Contributions

10.1 Introduction

Hevner et al. [2004] mention that new and interesting contributions are the ultimate assessment of research. The final step of the Main Research Cycle is the discussion of the contributions of the BPM@SME research, as illustrated in Figure 10-1.

This chapter summarises the main contributions of the research. The framework for the discussion of the contribution is discussed in section 10.2. In section 10.3 the individual contributions are presented per design artefact. The conclusion of the chapter is included in section 10.4.

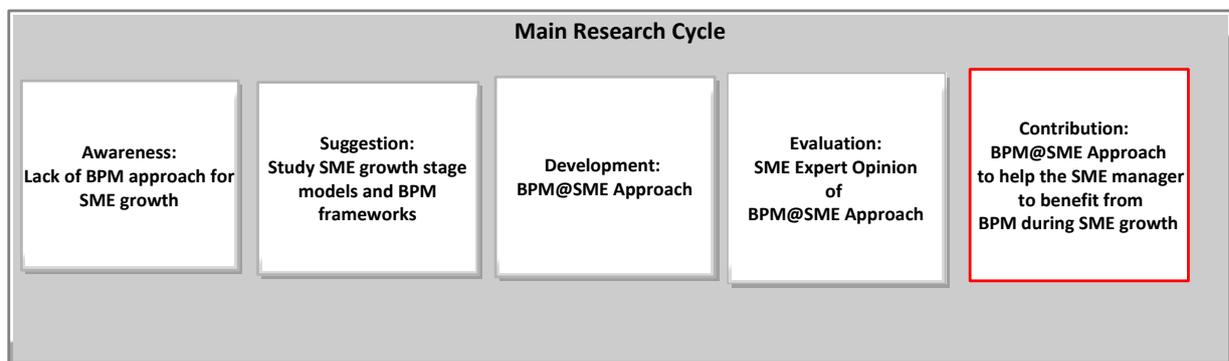


Figure 10-1: Main Research Cycle – Contribution

10.2 Classification Framework for the Description of the Contributions

Three classification frameworks are used to describe the contribution of the BPM@SME research, namely the classification of the knowledge contributions in design science research by Iivari [2007], the knowledge contribution framework by Gregor and Hevner [2013] and the type of contribution as described by Hevner et al. [2004].

According to Iivari [2007] knowledge contributions in design science research can be grouped into three main classes:

- *Conceptual knowledge:* The identification of the essential elements in a research domain and the relationships between the elements contributes to conceptual knowledge. Frameworks and models are classified as conceptual knowledge.

- *Descriptive knowledge*: The description of the area of research to get a better understanding and to provide explanation is referred to as descriptive knowledge. Theories and hypotheses together with observational facts are examples of descriptive knowledge.
- *Prescriptive knowledge*: The artefacts that contribute to the knowledge that relates to how to achieve a given end in an effective manner is referred to as prescriptive knowledge. Methods, instruments, patterns, guidelines and prototypes are classified as prescriptive knowledge.

Gregor and Hevner [2013] described the following DSR contributions as part of a knowledge contribution framework:

- *Improvement*: A new solution for a known problem is referred to as an improvement. The goal of this type of DSR is to develop better solutions in the form of more efficient and effective processes, services, products, technologies, ideas, etc. The context of an improvement is that of a low solution maturity combined with a high application domain maturity.
- *Invention*: New solutions for new problems are referred to as an invention. This type of DSR refers to a clear divergence from the accepted ways of doing and thinking. The context of an invention is that of a low solution maturity combined with a low application domain maturity.
- *Exaptation*: The extension of known solutions to a new problem is referred to as an exaptation. The goal of this type of DSR is to ‘exapt’ (adapt) effective artefacts in related problem areas to a new problem context. The context of an improvement is that of a high solution maturity combined with a low application domain maturity.
- *Routine design*: A known solution is used to address a known problem. Routine design is not normally considered as a research contribution because existing knowledge is applied to a familiar domain in a routine way. The context of an improvement is that of a high solution maturity combined with a high application domain maturity.

Hevner et al. [2004] differentiate between the contribution of the design artefact itself and the extension or improvement of the foundation of the design science knowledge base with the following definitions:

- *Contribution to scientific knowledge*: The scientific knowledge base is composed of foundations and methodologies including frameworks and models. Adding frameworks and models to the content of the scientific knowledge base for further research and practice is considered as a scientific research contribution.
- *Product contribution*: A design artefact that produces significant practical value by solving an important, previously unsolved problem in the business environment is considered a research contribution. Such a design artefact is classified as a product contribution.

10.3 Contribution of the BPM@SME Research per Design Artefact

The contribution is described per design artefact. The design artefacts are related to one another. The BPM CanvasTM Framework together with the WIN Approach was used to define the BPM Patterns (part

of the BPM CanvasTM Framework design artefact), which are in turn used as input to define the BPM Patlets. The BPM Patlets together with the growth state transitions listed in the 5S SME Growth State Transition Model were used to define the BPM@SME Guidelines. The 5S SME Growth State Transition Assessment is a variation of the 5S SME Growth State Transition Model. Both the BPM@SME Guidelines and the 5S SME Growth State Transition Assessment are used within the BPM@SME Approach. The BPM@SME Action Maze is a digital and automated version of the BPM@SME Approach.

For the classification of the contribution of the BPM@SME design artefacts, a design artefact is classified as (1) a 'contribution to scientific knowledge' or a 'product contribution', (2) a 'conceptual knowledge' or a 'prescriptive knowledge' contribution, and (3) a contribution as an 'improvement' or an 'exaptation'. The other classification options as described in section 10.2 are not applicable to the BPM@SME research design artefacts.

The contribution per design artefact is described by referring to the type of artefact, as defined in section 2.5.6, a recapitulation of the contribution and the classification of the contribution:

- *BPM CanvasTM Framework and WIN Approach*: The contribution of the BPM CanvasTM Framework and the WIN Approach is twofold: (1) the definition of BPM patterns being reused in the BPM@SME research, and (2) the utilisation by the corporate world of the framework and the approach to develop a BPM Roadmap, as illustrated in Figure 10-2:
 - *BPM CanvasTM Framework*: The BPM CanvasTM Framework, as discussed in section 5.3, is a framework that can be used to develop a BPM roadmap. The BPM CanvasTM Framework is considered an improvement as it is a new solution to an identified problem, i.e. a BPM framework sensitive to the identified problem of SME resource poverty in South Africa. The BPM CanvasTM Framework is contributing towards conceptual knowledge since it addresses the identification of the essential elements in the BPM domain and the relationships between the elements. The BPM CanvasTM is classified as a contribution to scientific knowledge since it adds to the scientific body of knowledge by addressing the lack of a BPM framework that is sensitive for resource poverty.
 - *WIN Approach*: The WIN Approach, as discussed in section 5.4, is a method describing how to use the BPM CanvasTM Framework. The WIN Approach is seen as an improvement to the existing body of knowledge. Since the WIN Approach is an example of a method artefact, it contributes to prescriptive knowledge. The WIN Approach is classified as a scientific contribution accompanying the BPM CanvasTM Framework.

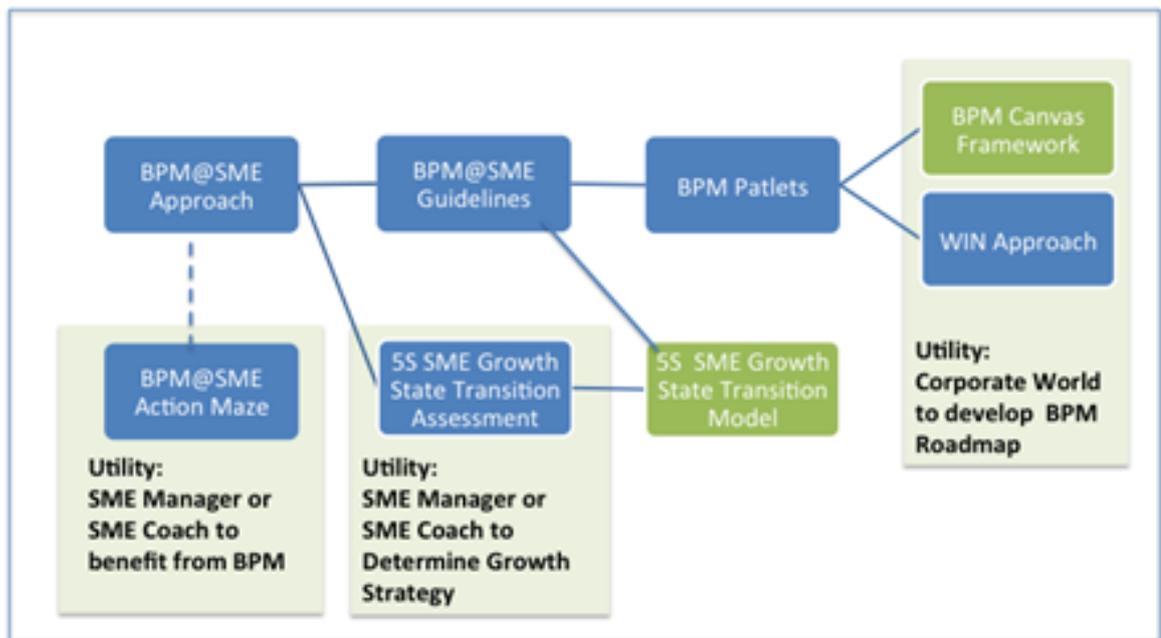


Figure 10-2: Utilisation of the BPM@SME Research Design Artefacts

- *BPM Patlets*: A patlet is a summary of the problem and the solution to the problem. The BPM Patlets, as defined in section 6.4, are summaries of problems being addressed by BPM and the associated BPM related solutions. The BPM Patlets are considered a contribution to prescriptive knowledge as it describes how to achieve a given end in an effective manner. The BPM Patlets is classified as a product contribution since it provides practical guidance to benefit from BPM as management approach. The contribution is seen as an exaptation as it is an extension of an existing solution to a new problem. The new problem is that a number of SMEs in South Africa is constraint by resource poverty. The solution is that BPM Patterns are packaged in such a way that a SME manager could benefit from the BPM Patlets without major investment in BPM.
- *5S SME Growth State Transition Model and the 5S SME Growth State Transition Assessment*: The 5S SME Growth State Transition Model and the 5S SME Growth State Transition Assessment are similar, with the latter allowing for adding the state (current/future/not applicable) per SME growth state transition. The 5S SME Growth State Transition Model, as discussed in section 4.2.5, is describing the state transitions associated with SME growth. The 5S SME Growth State Transition Assessment, a variation in presentation of the 5S SME Growth State Transition Model, is an instrument to define the current growth state and the future growth state of the SME. A further contribution is that the 5S SME Growth State Transition Model and Assessment are also valuable to the SME manager or coach to assist with the development of a SME growth strategy, as indicated in Figure 10-2:
 - *5S SME Growth State Transition Model*: The 5S SME Growth Transition model is considered an improvement to the existing body of knowledge. It is contributing towards conceptual knowledge since it addresses the identification of the essential elements associated with SME growth and transitions related to strategy, structure, systems, style of management and staff. The 5S SME

Growth State Transition Model is further classified as a scientific knowledge since it is an alternative to the SME growth ‘stage’ models, considering the criticism related to the concept of ‘stages’, as discussed in section 3.3.1.

- *5S SME Growth State Transition Assessment*: The 5S SME Growth Transition Assessment is considered an exaptation of the 5S SME Growth State Model as solution for the problem of utility by SME managers. This assessment instrument is contributing to prescriptive knowledge since it describes how to identify the growth state transitions of a specific SME. The 5S SME Growth State Transition Assessment is classified as a product contribution since it provides a practical instrument to assist the SME manager to identify the relevant SME growth state transition.
- *BPM@SME Guidelines*: The BPM@SME Guidelines, described in section 7.3, are bringing two domains together namely, SME growth and BPM. The guidelines associate the SME growth state transitions with a typical transformation pattern addressed by a BPM related solution. The BPM@SME Guidelines are considered an improvement since it provides a solution in the form of BPM@SME Guidelines to the identified problem of a lack of an approach for SME managers to benefit from BPM as management approach. The guidelines are contributing to prescriptive knowledge since it describes the relevant BPM actions to consider per SME growth state transition. The BPM@SME Guidelines are classified as a product contribution since it provides practical actions for the SME manager to benefit from BPM during SME growth.
- *BPM@SME Approach*: The BPM@SME Approach to assist SME managers to benefit from BPM, as described in section 7.4, aims to describe the method that the SME manager or SME coach should follow from the assessment of the growth state transition relevant to the SME and prioritisation of the BPM related actions. The BPM@SME Approach is considered an improvement since it is a new BPM approach specifically for the identified problem of SME growth. The BPM@SME Approach, as an example of a method artefact, contributes to prescriptive knowledge. The BPM@SME Approach is classified as a scientific contribution since it adds to the scientific body of knowledge by addressing the lack of a BPM approach to assist SME managers to benefit from BPM.

The BPM@SME Approach is the primary contribution of the BPM@SME research since this design artefact satisfies the research objective to develop an approach to assist the SME manager to benefit from BPM.

- *BPM@SME Action Maze*: The objective of the BPM@SME Action Maze prototype, as described in Chapter 8, was to package the BPM@SME Approach in a user-friendly and non-intimidating way. An action maze is a known solution and the BPM@SME Action Maze is therefore classified as an exaptation. As indicated in Figure 10-2, the SME manager or SME coach would use the BPM@SME Action Maze to benefit from BPM as management approach. The BPM@SME Action Maze contributes to prescriptive knowledge guiding the SME manager or SME coach in a user-friendly and non-intimidating way to complete the assessment of the growth state transitions and to select and prioritise the BPM action steps. The BPM@SME Action Maze is classified as a product contribution

since it provides a practical digital and automated solution for the SME manager or SME coach to apply the BPM@SME Approach.

10.4 Conclusion

This chapter provided a summary of the contributions made by the BPM@SME research. The BPM@SME research addressed the gap identified, namely to develop a BPM approach to assist SME managers, in South Africa, to benefit from BPM as management approach. Within the South African domain resource poverty is a constraint and it was considered during the development of such a BPM approach for SMEs.

The BPM@SME research contributes to the conceptual and scientific knowledge base through the BPM CanvasTM Framework as well as the 5S SME Growth State Transition Model. The contribution to the product and prescriptive knowledge base includes design artefacts such as the WIN Approach the BPM@SME Patlets, the 5S SME Growth State Transition Assessment, the BPM@SME Guidelines, the BPM@SME Approach and the BPM@SME Action Maze.

The contribution towards utility is not limited to the BPM@SME Approach answering the research question within the context of SMEs only. It also includes the use of the BPM CanvasTM Framework together with the WIN Approach to develop a BPM Roadmap for larger enterprises, as well as the 5S SME Growth State Transition Assessment to be used by a SME manager or SME coach to develop a strategy for SME growth.

Chapter 11 : Conclusion

11.1 Introduction

The purpose of this chapter is to conclude the BPM@SME research, to reflect on the BPM@SME research from various perspectives and to provide suggestions for further research.

The BPM@SME research is presented in eleven chapters. The overall research design is presented in Chapter 2. The problem statement and suggestion for a solution are included in Chapter 3 and are positioned as the first cycle of the design science research iterative approach. Chapter 3 includes a literature review of the research domains of SMEs, SME growth stage models and BPM approaches.

There are five research sub-cycles that constitute the development of the BPM@SME Approach, each with its own research process starting with an awareness of a problem, followed by a suggestion for a solution and then by the development and a form of evaluation of the artefact. Research Sub-Cycle 1, focusing on the development of the SME Growth State Transition Model, is described in Chapter 4. Chapter 5 focuses on Research Sub-Cycle 2 describing the BPM CanvasTM Framework. Research Sub-Cycle 3 is concerned with ensuring self-sufficiency in using the BPM CanvasTM Framework by packaging BPM Patlets as described in Chapter 6. The artefacts, described in Chapter 4, Chapter 5 and Chapter 6, are prerequisites for starting with Research Sub-Cycle 4, discussed in Chapter 7, with the outcome the BPM@SME Approach. The fifth and the last research sub-cycle is described in Chapter 8 with the user-friendly and unintimidating packaging of the BPM@SME Approach as an action maze prototype, referred to as the BPM@SME Action Maze.

The overall evaluation of the artefacts is included in Chapter 9, followed by a classification of the contributions made by the study in Chapter 10. There are two appendices included as part of the BPM@SME research thesis, namely Appendix A (BPM CanvasTM Roadmap Report Template) and Appendix B (BPM@SME Guidelines).

A summary of the research findings is included in section 11.2 and the research contribution is summarised in section 11.3. The reflection on the BPM@SME research followed in section 11.4, with sub-sections for scientific reflection, research design reflection and personal reflection. Section 11.5 includes recommendations for future research and the final word is found in section 11.6.

11.2 Summary of the Research Findings

The objective of the BPM@SME research reported on in this thesis *was to propose, develop, package and evaluate a BPM Approach that can be used to help SME managers (in South Africa) during typical transitions of SME growth, to benefit from BPM as a management approach.*

Six sub-objectives were identified to support the main research objective. The findings are discussed per sub-objective:

1. *To assess the current SME growth stage model and BPM approach landscape:* The study, as presented in Chapter 3, found that the SME growth stage models could not be used to derive the growth transitions due to the critique that the SME growth stage models tend to assume that all SMEs pass inexorably through each stage. A second finding was that no BPM Approach sensitive towards the resource poverty of SMEs in South Africa was available.
2. *To derive typical SME growth state transitions using SME growth stage models as the source:* The study, as presented in Chapter 4, found that the SME growth state transitions as defined in the 5S SME Growth State Transition Model could be used as the *typical transitions of SME growth* referred to in the research question. A further finding was that utility increases if the 5S SME Growth State Transition Model was packaged as an assessment instrument.
3. *To develop, package and evaluate a BPM approach supportive of the reality of SME resource poverty:* The study, as presented in Chapter 5, found that the BPM CanvasTM Framework and the WIN Approach can successfully be used by larger companies to develop a BPM Roadmap. However, applying the BPM CanvasTM Framework and the WIN Approach to develop an SME BPM Roadmap was not sensitive towards SME resource poverty. A further finding was that the BPM Patterns, a component of the BPM CanvasTM Framework, had the potential to provide the foundation for a BPM approach supportive of the reality of SME resource poverty.
4. *To ensure self-sufficiency in using the BPM approach, with the developed research artefact being the BPM Patlets:* The study, as presented in Chapter 6, found that enriching the BPM Patterns with design principles resulted in BPM Patlets. From a BPM approach perspective the finding was that the BPM Patlets were both sensitive towards SME resource poverty and supportive of self-sufficiency of the SME manager.
5. *To package the BPM Patlets, cross-referencing the SME growth state transitions from the 5S SME Growth State Transition Model:* The study, as presented in Chapter 7, found that it was possible to cross-reference the relevant design principles, described as part of the BPM Patlets, to the relevant SME growth state transition, included in the 5S SME Growth State Transition Model. The outcome of this cross-reference was named the BPM@SME Guidelines. A further finding was that by completing the 5S SME Growth State Transition Assessment and then, based on the outcome of the assessment, selecting the relevant BPM@SME Guidelines, the SME manager got guidance on how to benefit from BPM as management approach during SME growth. This approach was named the BPM@SME Approach. The main finding of the study was that this BPM@SME Approach satisfies the research objective, namely to develop a *BPM Approach that can be used to help SME managers (in South Africa) during typical transitions of SME growth, to benefit from BPM as a management approach*. However the BPM@SME Approach was found intimidating and not user-friendly when presented in a sequential document.

6. *To package the BPM@SME Approach in a user-friendly, non-intimidating way:* The study, as presented in Chapter 8, found that an action maze, also known as an interactive case study, could be more user-friendly and less intimidating for the SME manager. The BPM@SME prototype illustrates the potential packaging of the BPM@SME Approach as an action maze.

11.3 Summary of Research Contribution

A summary of the contributions of the BPM@SME research presented in this thesis is provided in Table 11-1.

Table 11-1: Summary of Research Contribution

Contribution per Design Artefact	Scientific Knowledge / Product Contribution	Conceptual / Prescriptive Knowledge Contribution	Improvement / Exaptation
BPM Canvas™ Framework a BPM framework supportive of the reality of SME resource poverty (through the BPM pattern component)	Scientific knowledge	Conceptual	Improvement
WIN Approach a contribution accompanying the BPM Canvas™ Framework	Scientific knowledge	Prescriptive	Improvement
BPM Patlets towards self-sufficiency in using BPM patterns	Product	Prescriptive	Exaptation
5S SME Growth State Transition Model to address the ‘stage’ related criticism of SME growth stage models	Scientific knowledge	Conceptual	Improvement
5S SME Growth State Transition Assessment to enhance utility of the 5S SME Growth State Transition Model	Product	Prescriptive	Exaptation
BPM@SME Guidelines to provide the relevant BPM Patlet information per SME growth state transition	Product	Prescriptive	Improvement
BPM@SME Approach to address the lack of a BPM Approach for SMEs interested in growth	Scientific knowledge	Prescriptive	Improvement
BPM@SME Action Maze a more friendly and less intimidating interactive online solution to benefit from the BPM@SME Approach	Product	Prescriptive	Exaptation

11.4 Reflection on the BPM@SME Research

This section represents a reflection on the research from three perspectives. A scientific reflection is included in section 11.4.1. A reflection of the research design follows in section 11.4.2. A personal reflection is presented in section 11.4.3.

11.4.1 Scientific Reflection

The objective of the BPM@SME research was to propose a BPM Approach that could be used to help SME managers (in South Africa) during typical transitions of SME growth, to benefit from BPM as a management approach. Scientifically there are three areas of contribution to the scientific knowledge base, namely (1) providing the SME Growth State Transition Model as alternative to the SME growth stage models, (2) developing a BPM framework and BPM Patlets to provide a BPM framework to be supportive of the reality of SME resource poverty, and (3) bringing the domain of SME growth and the domain of BPM together to develop an approach to assist SME managers to benefit from BPM.

Considering that BPM is well positioned to provide solutions to add value during periods of change and transitions, the suggestion was to determine the typical transitions associated with SME growth. The assumption was that the SME growth stage models would be the source for these growth transitions. However, it was not to be due to the criticism of the SME growth stage models assuming that all SMEs pass inexorably through each stage. The scientific contribution was to develop a 5S SME Growth State Transition Model replacing the concept of stages with the concept of state transitions.

A second reality was the impact of resource poverty on SME growth in South Africa. The second challenge was to find a BPM framework supportive of SME resource poverty. The search to find a suitable framework was not successful. A second contribution was therefore the BPM CanvasTM Framework accompanied by the WIN Approach. It was found that the BPM CanvasTM Framework and WIN Approach, scientific contributions, could be successfully utilised in the larger organisation, but it was not a suitable solution as a BPM framework supportive of SME resource poverty. However the development of BPM Patlets, as an extension of one of the components from the BPM CanvasTM Framework, was found to address the requirement of self-sufficiency.

The BPM@SME Approach satisfied the research objective of the BPM@SME research, and with the BPM@SME Action Maze as final deliverable provides a user-friendly and non-intimidating way to benefit from BPM to support SME growth.

11.4.2 Research Design Reflection

The question is whether design science research (DSR) was the most appropriate research design option for the BPM@SME research. The research design reflection in Table 11-2 is against the criteria for research to be considered suitable for DSR [Baskerville & Pries-Heje, 2010; Hevner et al., 2004], as discussed in section 2.4. The BPM@SME research involved several sub-cycles, each with circumscription and lessons that influenced subsequent sub-cycles. The initial suggestion, based on the assumption that growth transitions would be available in existing SME growth stage models and that there would be a BPM framework available to cross-reference, would have resulted in only doing the main research cycle. Using DSR allows for the journey through the additional research sub-cycles to get

to the solution for the research objective. DSR was found to be a suitable research approach for the BPM@SME research, since it allowed for learning through iterative development to find a suitable set of solutions to satisfy the main research objective.

Table 11-2: Reflection against DSR Criteria

Context	Guideline
Artefact	The BPM@SME research produces viable artefacts, focusing on how to do something, including the 5S SME Growth State Transition Model and Assessment, the BPM Canvas™ Framework and the WIN Approach, the BPM Patlets, the BPM@SME Guidelines, the BPM@SME Approach and the BPM@SME Action Maze. The artefact types include methods, models, frameworks, patterns and a prototype.
Business problem	The business problem addressed was the lack of an approach to assist SME managers to benefit from BPM as management approach during SME growth.
Utility evaluation	The evaluation methods include a demonstration of the 5S SME Growth State Transition Model, client feedback of the BPM Canvas™ Framework and the WIN Approach, expert opinion of the BPM Patlets and the BPM@SME Approach and the BPM@SME Action Maze a prototype of the BPM@SME Approach.
Contribution	<ul style="list-style-type: none"> • The 5S SME Growth State Transition Model and Assessment contributes to solving the criticism that the SME growth stage models tend to assume that all SMEs pass inexorably through each stage. • The BPM Canvas™ Framework, WIN Approach and BPM Patlets contribute towards a BPM framework supportive and sensitive of SME resource poverty in South Africa. • The BPM@SME Guidelines, BPM@SME Approach and the BPM@SME Action Maze contribute by providing an approach to assist SME managers to benefit from BPM as management approach during SME growth.
Rigorous method	The development of the 5S SME Growth State Transition Model, the BPM Canvas™ Framework and the BPM Patlets were based on extensive literature study. The 5S SME Growth State Transition Model also considers the review of documents of an SME company. A focus group of an SME company contributes to the BPM Canvas™ Framework. Analogy as reasoning method was used for the development of the BPM Canvas™ Framework and the development of the BPM@SME Action Maze. Synthesis as analysis method was extensively used for the SME Growth State Transition Model, the BPM Patlets and the BPM@SME Guidelines. State transition analysis was used to define the 5S SME Growth State Transition Model.
Existing theories and knowledge	The 5S SME Growth State Transition Models draws from existing SME growth stage models. The BPM Canvas™ Framework was based on an analogy of the existing work by Osterwalder and Pigneur [2010] and the BPM@SME Action Maze was developed through the analogy of the action maze by Arneil and Holmes [2009]. The BPM Canvas™ Framework draws on existing BPM knowledge and the BPM Patlets draws on existing design principle knowledge. Knowledge of a practical character of the experts and the practitioner-researcher were instrumental in designing the solution to the problem.
Communication	The problem of the SME growth stage models was communicated to the academia and practitioners in the form of a peer-reviewed article by Jacobs et al. [2011]. The BPM Canvas™ Framework is used to develop a BPM Roadmap for larger companies and it is part of a short course presented at a university [Enterprises University of Pretoria, 2014].

11.4.3 Personal Reflection

The value of the BPM@SME research is not only in the outcome of the study but it also taking part in the journey. Reflecting on the outcome of the research I'm referring back to the motivation behind the research objective. From the pragmatic practitioner perspective, as part of an SME providing BPM consulting services typically to the corporate market segment, there were three questions that played an important role in the definition of the research objective, namely:

- As practitioner I'm working for an SME that needs to invest in enterprise and supplier development as part of the BEE legislation in South Africa. The question is whether it would be possible for us as SME to provide BPM services to SMEs as contribution to the growth of SMEs in South Africa. A further question was to determine how BPM as management approach should be packaged for SMEs.
- The second question was why we as an SME, although BPM experts, didn't explicitly invest in BPM for more than 10 years. The typical shoemaker's children didn't wear shoes scenario applies. A further question was whether we as SME intuitively did apply BPM knowledge during this period, and whether it would assist to package a BPM approach for SMEs if I better understood what we as SME actually did regarding BPM since starting out in 2001.
- A third question was that BPM as approach is a large investment even for the corporate world. The typical BPM approach used by large corporates didn't assist with finding a BPM approach for SMEs. The question is whether the opposite would be valid, namely making the BPM@SME solution available for large corporates, and whether there would be a more affordable solution available for the corporate world as well.

My personal reflection as practitioner looking back at the questions are as follows :

- Regarding the first question the BPM@SME Approach is a value-adding contribution for SMEs and therefore we, as an SME, could offer it as a service to SMEs in South Africa as part of enterprise and supplier development as defined by the BEE codes. Even if the value is initially only to create awareness of the state transitions in SME growth and of BPM as management approach to assist with these transitions, the ultimate goal is that it will contribute to breaking systemic poverty in South Africa by running and growing more sustainable SMEs. Even if this BPM@SME research could help to create one additional job opportunity through SME growth then it would be a positive outcome for the BPM@SME research.
- As part of the second cycle a demonstration was used to illustrate that the SME state transition model is valid using the records of an SME. The outcome was that the perception that the shoemaker's children did not wear shoes was incorrect. As SME we as company did apply BPM principles and this practitioner knowledge were incorporated into the BPM@SME Approach.
- The BPM CanvasTM was evaluated as BPM framework within the corporate market. It was well accepted as BPM framework together with the WIN Approach to derive a BPM Roadmap. The value of the BPM CanvasTM Framework was therefore not only of value in providing a BPM framework

with the specific BPM patterns required for this BPM@SME research, it also closed a gap in the BPM space to develop a BPM Roadmap for larger companies.

11.5 Recommendations for Future Research

During the BPM@SME research a number of opportunities for further research were identified including:

- Ten SME growth stage models, representing the majority of concepts found in the 104 growth stage models, were identified for inclusion in the detailed state transition analysis. An in-depth analysis of all 104 models was identified as further research.
- From the evaluation of the 5S SME Growth State Transition Model by the SME experts, two research possibilities were tabled:
 - Although the SME growth stage models do have criticism there is an expectation from the SME coaches and managers to use a model to predict transitions associated with a specific stage of SME growth.
 - The question is whether the 5S SME Growth State Transition Model could be used for other purposes, and not only to identify the transition that would indicate the areas of contribution through BPM as management approach.
- The content of the accelerators used as part of the BPM CanvasTM Framework as well as the design principles incorporated as part of the BPM Patlets should evolve over time and through further research.
- The BPM Patlets are only addressing ‘what’ to do and not ‘how’ to do it. The existing BPM knowledge base do have knowledge available to expand the BPM Patlets to address the ‘how’ aspect as well.
- Further observation of SME growth would assist to mature the BPM@SME Guidelines relating SME growth state transitions with the BPM practices as defined in the BPM Patlets.
- Making the BPM@SME Approach available to the SME community in South Africa through one or more SME forums, platforms or portals is being discussed. Refinement and completion of the BPM@SME Action Maze is required, although it may be addressed as routine design and not necessary as further research.

11.6 In Conclusion

The use of the BPM@SME Approach through the BPM@SME Action Maze has the potential to contribute towards SME growth in South Africa. The constraint of resource poverty in South Africa is a reality and the low level of business skills is contributing to limited SME growth and the resultant small number of job opportunities created by SMEs in South Africa. The BPM@SME research is a step towards fulfilling the need to increase the level of business skills of SME managers. It is envisioned that making the BPM@SME Approach available to SME managers and SME coaches could assist to at least

create awareness of the transition associated with SME growth and the role of BPM as management approach to manage these transitions.

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Appendix A: BPM Canvas™ Roadmap Report Template

Template for the outcome of WIN Approach and the BPM Canvas™ Framework

Business Process Management Roadmap Report

Date

Version

A.1 Background and Overview

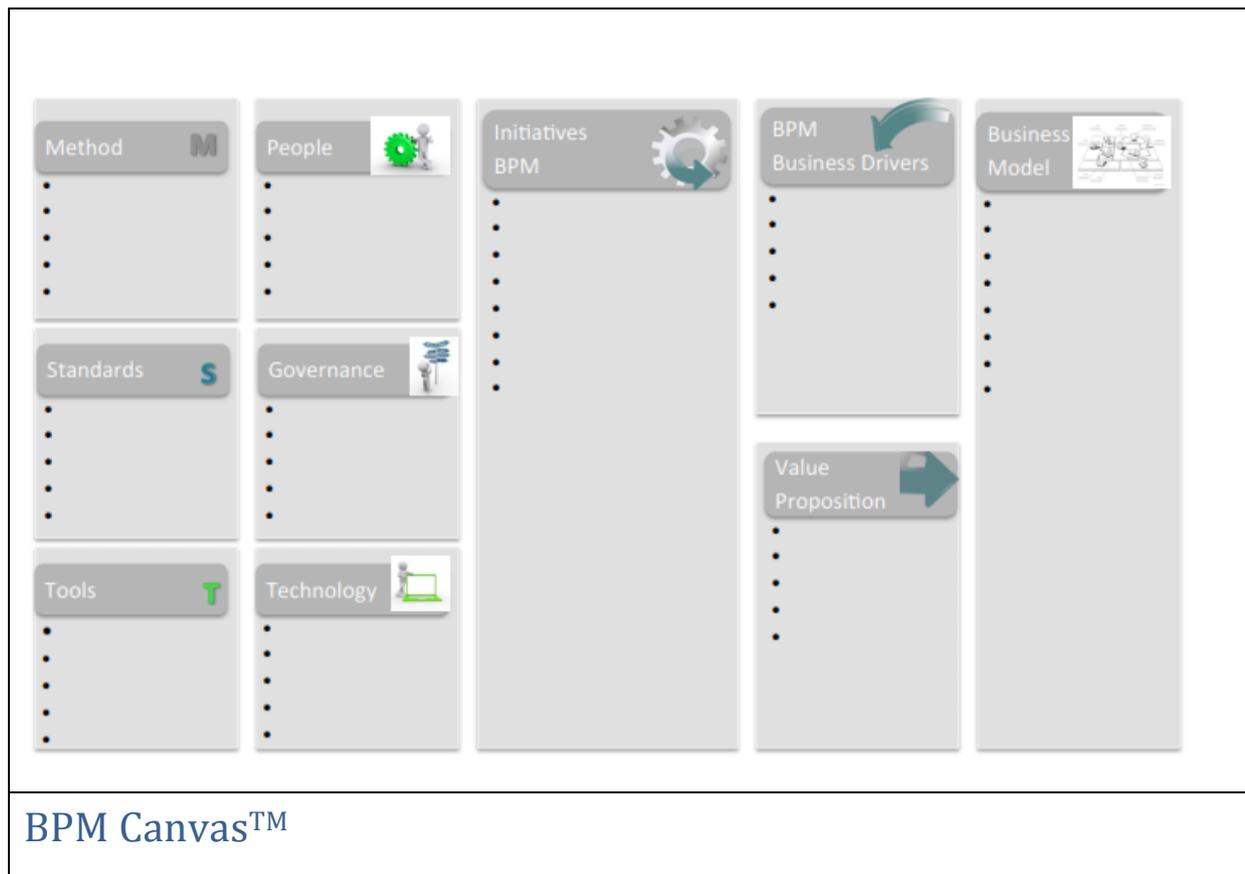
The purpose of this report is to

This BPM Roadmap Report includes

-
-
-

The BPM Canvas™ framework and WIN approach is used to provide structure during the workshops to define the BPM Roadmap. An overview of the BPM Canvas™ Framework and WIN Approach is included in Annexure A of this document.

A summary of the outcome of the BPM Canvas™ workshop is depicted in the following diagram:



A.2 BPM Definition

There are a number of definitions available which describe Business Process Management (BPM). The BPM statement of direction is aligned with the following definition of BPM by Forrester:

“BPM is a broad framework of methods, approaches, techniques and technologies that support organizational change, value optimization and ongoing performance improvement.

BPM is not a narrow technical approach, Forrester regards BPM as including a wide range of improvement methods such as Lean and Six Sigma, along with customer-centric (outside-in) engagement approaches and organizational change management – each one of these levers ties back to a flexible and adaptable enterprise architecture that implements an evolving business strategy.

Such an all-encompassing approach can help focus on strategic priorities, as well as opportunities to both differentiate the value proposition, and sharpen the competitive edge.”

A.3 WHY BPM?

The Business Model and/or Strategic Intent (section A3.1) determines the BPM drivers (section A3.2) and the associated BPM value proposition (section A3.3).

A.3.1 Business Model

A business model describes the rationale of how an organisation creates, delivers and captures value (economic, social, or other forms of value). The process of business model construction is part of business strategy and the development of an operating model. During the workshop it was agreed that the following areas are important from the business model perspective:

(Examples to be replaced.....)

- **Customer satisfaction** – in order to ensure the satisfaction of customers, it was agreed that operational efficiency is critical. Inefficiencies on the operations side can lead to either losing business (existing customers) or to not gaining new customers.
- **End-to-End across stakeholders** – it is important for business to maintain good relationships with all stakeholders. This includes not only customers, but also partners, suppliers and shareholders.
-

A.3.2 Business Drivers

A BPM driver is “a situation, strategy or goal that motivates management to support business process change.” The following BPM drivers were identified as being relevant to the environment, considering the areas highlighted as part of the business model in section A3.1:

(Examples to be replaced.....)

- Customer satisfaction – the industry has become increasingly competitive and without the support and loyalty of customers, the business will not survive. Effective and efficient business processes, which deliver exceptional results to their customers, is critical.
- **BPM Driver: Customer satisfaction.**
-
- Process optimisation – to support the drive for customer satisfaction, it will be crucial to optimise the processes to a level where a consistent, reliable service is delivered. Process measurement including monitoring to understand the level of performance, as well as adherence to compliance is important.
- **BPM Driver: Optimisation both effectiveness and efficiency.**
-

A.3.3 Value Proposition

The BPM value proposition is the promise of value to be delivered by BPM and a belief from the management of value that will be experienced by supporting a BPM initiative. The following areas were identified during the workshop as being the key aspects to deliver value to the business through BPM initiatives:

(Examples to be replaced.....)

- **Customer-driven processes (solution based):** The design of processes should incorporate the needs of the customer. There needs to be visibility of the SLA’s and structured process and performance frameworks. Monitoring should reflect the bottlenecks in the process, adherence to SLA’s and, as a result, the value derived will be compliance.
- **Enterprise Architecture:** The alignment of business processes with enabling systems is crucial for the success of the company.
-

A.4 WHAT best practices are available?

The following are best practices that could benefit.....

-
-
-

A.5 WHERE are _____ on the journey towards BPM Maturity

Assessing the BPM readiness is an integral part of understanding where the organisation is today and where it aspires to go in its overall BPM journey. BPM maturity assessments typically assess the ability of an enterprise to support BPM, both with respect to BPM capabilities and the capability of the enterprise processes to deliver business results. We used the Process Enterprise Maturity Model (PEMM) that was developed by Michael Hammer. (The result of the workshop is available in A3 format).

There are two frameworks, one for assessing any particular business process and another for assessing the maturity of the enterprise as a whole. The Enterprise Capabilities framework includes the following components: leadership, culture, expertise and governance. The Process Enablers framework includes design, metrics, performers, owner and infrastructure.

The following two diagrams are a summary of the outcome of the PEMM maturity assessment. The green indicate 80% true in the company and the yellow between 20% and 80% true. The red cells indicate less than 20% true.

Enterprise BPM Maturity Assessment

Level 4														
Level 3														
Level 2														
Level 1														
	Awareness	Alignment	Behaviour	Style	Teamwork	Customer Focus	Responsibility	Attitude towards Change	People	Methodology	Process Model	Accountability	Integration	
	Leadership				Culture				Expertise		Governance			

Process BPM Maturity Assessment

Level 4													
Level 3													
Level 2													
Level 1													
	Purpose	Context	Documentation	Knowledge	Skills	Behaviour	Identity	Activities	Authority	Information Systems	Human Resource Systems	Definition	User
	Design		Performers			Owner			Infrastructure		Metrics		

The overall rating for both the process enablers as well as the enterprise enablers are level 0 based on the rating allocated per enabler by the representatives at the BPM Canvas™ workshop. The processes were evaluated from an overall perspective and not per individual process. The overall rating is determined by the lowest strength per enabler.

In order to achieve a level 1 rating for the Enterprise Enablers the following areas should be improved to achieve a 80% and more when evaluated for the <20% rating at this stage:

(Example to be replaced.....)

- Leadership Alignment
- Expertise Methodology

and the following enablers should move from 20%-80% rating to a >80% rating:

(Example to be replaced.....)

- Leadership Awareness
- Governance Accountability
- Governance Integration.

In order to achieve a level 1 rating for the Process Enablers the following areas should improve from <20% to more than 80%:

(Example to be replaced.....)

- Design Context
- Infrastructure Information Systems
-

and the following enablers should be improved to be recognized as >80% true:

(Example to be replaced.....)

- Design Purpose

-
-

It is important to note that a company should not plan to go from the current state to perfection in one swoop. It is journey with several steps to move to a high performance process driven organization.

A.6 Industry Solutions

The following solutions available in the industry should be considered:

(Example to be replaced.....)

Methods:

- Outside-In of Steve Towers
-

Standards

- BPMN as process modelling notation
-

Tools

- Business Process Analysis Tools
- BPMS technology

.....

A.7 Internal Capability

A BPM Centre of Excellence (BPM CoE, BPM Group, Process Team or BPM Office) is an important organizational mechanism that has been widely adopted by enterprises aiming at institutionalizing BPM initiatives and perpetuating their benefits throughout the organization in a more centralized approach. As part of the BPM internal capability focus areas are included regarding the people component, the governance component and the technology component.

A.7.1 People

(Examples to be replaced

To realise the benefits of BPM the following focus areas, related to the people component, are included in the BPM CoE roadmap to establish an internal BPM capability:

- Define the roles and responsibilities of the BPM function and the BPM COE.
- Enable the relevant people with the necessary BPM skills and training to enhance their BPM capability.
-

A.7.2 Governance

(Examples to be replaced)

As part of the governance structures of the BPM Centre of Excellence, the following areas are included in the BPM CoE Roadmap to establish the internal BPM capability

- The services to be delivered by the BPM CoE including repository management, quality assurance and change management/version control.
- The definition and review of the enterprise model based on the reference models.
- The definition of the BPM method.
- The definition of the BPM standards including the notation.
-
-

A.7.3 Technology

There are various technologies available to support the implementation of initiatives relating to a BPM roadmap. There are a number of categories in which these tools are evaluated by research analysts such as Gartner and Forrester.

Company x is currently using

(Examples to be replaced.....)

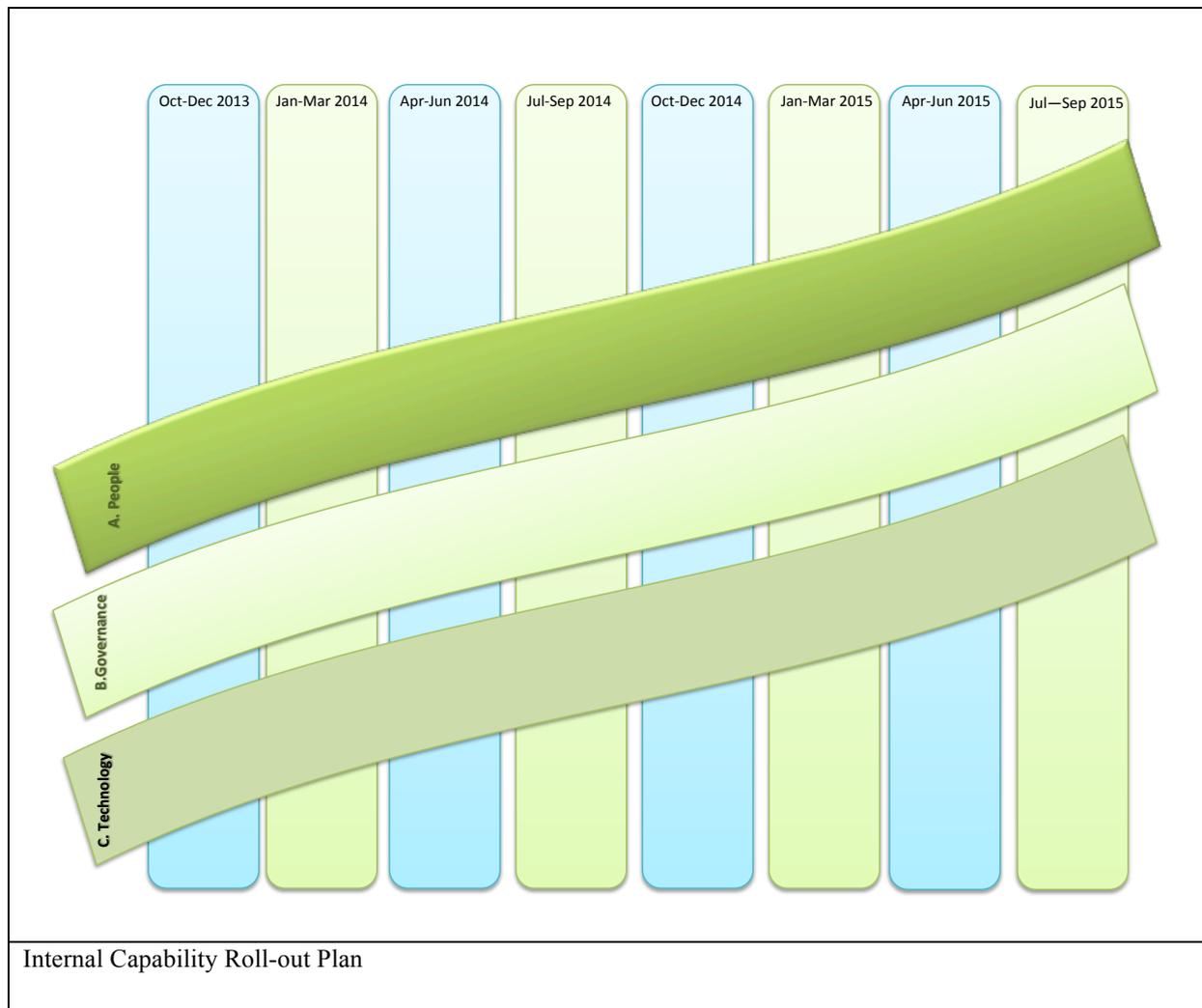
- ARIS as Business Process Analysis Tool
-

Company x should consider technology such as:

- Business Intelligence tool for dashboards. The performance of processes needs to be measured and the results made available to users in the form of a dashboard.
- The selection of a business process management suite (BPMS) is positioned for the 2015 period. The purpose would be to automate certain of the key processes.
-

A.7.4 Internal Capability Roll-out Plan

The following diagram indicates the Internal Capability Roll-out Plan for the next 2 years



The BPM CoE roadmap consists of initiatives relating to 3 categories, namely:

- People – indicating the initiatives planned for the definition of aspects relating to the ‘people’ requirements to implement the BPM roadmap within the organisation.
- Governance – this represents the specific governance to be defined for BPM including the method, BPM CoE processes, services catalogue.
- Technology – Technology plays an important role in the support of BPM initiatives. This is represented by indicating the requirements with regards to tools and technology identified during the workshop.

A.8 Initiatives

There are a number of initiatives which are either currently running or starting within the immediate future, in which BPM will play a major role. These include:

Appendix B: BPM@SME Guidelines

B.1 S1.1.1

<i>SME Growth Transition</i>	
S1.1.1 Diversification by acquisition is a strategy to gain and/or maintain product leadership in the market.	
<i>To Do</i>	
DP1: Separate processes for each business unit DP4: Ensure end-to-end integration of processes DP5: Standardise processes	
<i>Create Value through a One Time Event (BPM Patlet 6)</i>	
<i>Why</i> Diversification by acquisition is a strategy to accelerate going to market as a product leader or to get access to new markets or distribution channels.	<i>What</i> <ul style="list-style-type: none"> Standardise processes between the enterprises impacted by the acquisition. Understand and manage variation in processes between the enterprises impacted by the acquisition. Integrate processes to ensure end to end integration of processes of the enterprises impacted by the acquisition.
	<i>Value</i> <ul style="list-style-type: none"> Certainty increases if processes are standardised resulting in more predictable outcomes. Certainty increases if sustainability increases through standardised processes as part of a one-time event such as a merge, acquisition or transformation
DP1	<i>Statement:</i> Business units are autonomous therefore create a separate process for each business unit. <i>Rationale/Motivation:</i> Autonomous business units can adapt to changes quickly because they do not need to align with other business units.
DP4	<i>Statement:</i> Processes are integrated end-to-end, ensuring a continuous flow with nothing slowing down the value-adding steps. <i>Rationale/Motivation:</i> End-to-end integrated processes strive to deliver the output with a minimum delay, which increases customer satisfaction. It further aims to streamline processes and make them as efficient as possible. <i>Key actions:</i> <ul style="list-style-type: none"> Ensure quality at the beginning of the process Ensure seamless integration of the processes and services End-to-end integration includes the control of the integrated flow of the goods, information, knowledge and financial transactions Buffers between activities are prevented as much as possible. <i>Example:</i> Considering the pattern for a cancellation it is important to first decide on the eligibility of the cancellation request and then to perform the activities to execute the cancellation, but it is still an integrated process.
DP5	<i>Statement:</i> Increase consistency of behaviour through standardisation. <i>Rationale/Motivation:</i> Standard processes are repeatable, predictable, scalable and more efficient. Process standardisation is often required in order to comply with certain legislation or quality standards. <i>Key actions:</i>

	<ul style="list-style-type: none">• Define the standard process based upon current and best practices within the company• Ensure adherence to the standard process• Reuse IT systems throughout the organisation.
--	---

B.2 S1.1.2

<p><i>SME Growth Transition</i></p> <p>S1.1.2 Major and frequent product/service innovations is a strategy to gain and/or maintain product leadership in the market through new products.</p>		
<p><i>To Do</i></p> <p>DP8: Identify candidate processes for automation DP17: Determine customer need for IT systems to be available at any time, place or on any device DP20: Manage business rules (initially manually)</p>		
<p><i>Create value through product leadership (BPM Patlet 1)</i></p>		
<p><i>Why</i></p> <p>If growth is through major and frequent product innovation then innovation, agility and/or effectiveness of processes play a role to gain and maintain product leadership.</p>	<p><i>What</i></p> <ul style="list-style-type: none"> Automate repetitive tasks to increase consistent behaviour. Ensure the client can access information and initiate transactions at any time, at any place and on any device. Consider a rule engine to manage complex rules. 	<p><i>Value</i></p> <p>Product leadership should result in the upward trend of financial revenue.</p>
<p>DP8</p>	<p><i>Statement:</i> Increase consistency of behaviour through automation. <i>Rationale/Motivation:</i> Automated tasks are more efficient in time and costs, and less error-prone than manual tasks. <i>Key Actions:</i></p> <ul style="list-style-type: none"> Redesign then automate Identify routine tasks as it required relatively little specific knowledge and can be automated fairly easily. <p><i>Example:</i> Consider electronic-based workflows for human resource processes. Processes are supported by a Business Process Management System (BPMS).</p>	
<p>DP17</p>	<p><i>Statement:</i> IT systems are available at any time on any location (and any device). <i>Rationale/Motivation:</i> Customers and employees perform their work at various locations at various times and with various devices and they expect to be supported notwithstanding the scenario. <i>Key Actions:</i></p> <ul style="list-style-type: none"> Consider cloud based software Strong authentication services are available to ensure secure access Support devices commonly used to access online services Support mobile devices Implementation of Web standards. <p><i>Example:</i> Order transactions must be completely executed through the internet.</p>	
<p>DP20</p>	<p><i>Statement:</i> Rules (that are complex or apt to change) are managed in a rule engine. <i>Rationale/Motivation:</i> Business rules can be used by end users, it can be re-used and changes are easier than hard coded rules.</p>	

B.3 S1.1.3

<p><i>SME Growth Transition</i></p> <p>S1.1.3 Small and incremental product/service modifications is a strategy to gain and/or maintain product leadership in the market.</p>		
<p><i>To Do</i></p> <p>DP9: Modifications should not disturb primary processes</p>		
<p><i>Create value through product leadership (BPM Patlet 1)</i></p>		
<p><i>Why</i></p> <p>If product leadership is through small and incremental product modification then innovation, agility and/or effectiveness of processes play a role to gain and maintain product leadership.</p>	<p><i>What</i></p> <p>Changes to processes and supporting information systems should be done based on business needs.</p>	<p><i>Value</i></p> <p>Product leadership should result in the upward trend of financial revenue.</p>
<p>DP9</p>	<p><i>Statement:</i> Primary processes are not disturbed by implementation of changes. Only in response to business needs are changes to IT systems made.</p> <p><i>Rationale/Motivation:</i> Primary business processes are the core of the organisation and disturbances in these have a major impact on the organisation. Organisations change continuously and frequent disturbances are unacceptable. Change management will foster a culture where the information systems change in response to the needs of the business rather than having the business change to in response to information system changes. Unintended effects on business due to information system changes will be minimised.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Document the business need • Develop and implement a change management process to manage information system changes • New processes and systems should not be deployed until it has been tested and approved • Downtime of applications should be minimised and deployment should preferably be performed outside business hours • Understand the capabilities offered by solutions that are available for the SME. 	

B.4 S1.2.1

<p><i>SME Growth Transition</i></p> <p>S1.2.1 Managing the supply-chain upstream and/or downstream is a strategy to gain and/or maintain a competitive advantage in the market. Working closely with suppliers and the distribution network enables an integrated end-to-end service as part of operational excellence.</p>		
<p><i>To Do</i></p> <p>DP4: Improve end-to-end integration of processes DP14: Capture information once, during the process, at the source</p>		
<p><i>Growth through Coordination and/or Partnerships (BPM Patlet 8)</i></p>		
<p><i>Why</i></p> <p>Growth is through coordination and/or partnerships.</p>	<p><i>What</i></p> <p>Integrate processes end-to-end.</p>	<p><i>Value</i></p> <p>The value is related to performance as a result of integration.</p>
<p>DP4</p>	<p><i>Statement:</i> Processes are integrated end-to-end, ensuring a continuous flow with nothing slowing down the value-adding steps. <i>Rationale/Motivation:</i> End-to-end integrated processes strive to deliver the output with a minimum delay, which increases customer satisfaction. It further aims to streamline processes and make them as efficient as possible. <i>Key actions:</i></p> <ul style="list-style-type: none"> • Ensure quality at the beginning of the process • Ensure seamless integration of the processes and services • End-to-end integration includes the control of the integrated flow of the goods, information, knowledge and financial transactions • Buffers between activities are prevented as much as possible. <p><i>Example:</i> Considering the pattern for a cancellation it is important to first decide on the eligibility of the cancellation request and then to perform the activities to execute the cancellation but it is still an integrated process.</p>	
<p>DP14</p>	<p><i>Statement:</i> Capture information once at the source and share it. <i>Rationale/Motivation:</i> Unnecessary intermediate layers are prevented and the performance and reliability of the data increases and the potential of errors decreases as well as the overhead cost. The risk of inconsistencies if data is maintained in multiple places is eliminated. <i>Key Actions:</i></p> <p>Consider electronic forms</p> <ul style="list-style-type: none"> • Acquire data from the only authoritative source application • The source application for all types of data is known • Replication of data is only considered if properly motivated and managed and the replicated data is never updated. Data are not replicated before it is 100% correct • Check if data is not already available before it is captured a second time • Bring downstream information needs upstream • Life-cycle management for all information in place • Data are stored and exchanged electronically. <p><i>Example:</i> Accurate and up-to-date financial information.</p>	

B.5 S1.2.2

<p><i>SME Growth Transition</i></p> <p>S1.2.2 Identification of a niche product/service to close a gap in the end-to-end supply-chain delivered is a strategy to gain and/or maintain a competitive advantage in the market.</p>		
<p><i>To Do</i></p> <p>DP4: Improve end-to-end integration of processes</p>		
<p><i>Growth through Coordination and/or Partnerships (BPM Patlet 8)</i></p>		
<p><i>Why</i></p> <p>Growth is through coordination and/or partnerships.</p>	<p><i>What</i></p> <p>If the strategy is to identify a niche market between competition the analysis of an end-to-end integrated process may assist to identify these opportunities.</p>	<p><i>Value</i></p> <p>The value is related to performance as a result of integration.</p>
<p>DP4</p>	<p><i>Statement:</i> Processes are integrated end-to-end, ensuring a continuous flow with nothing slowing down the value-adding steps.</p> <p><i>Rationale/Motivation:</i> End-to-end integrated processes strive to deliver the output with a minimum delay, which increases customer satisfaction. It further aims to streamline processes and make them as efficient as possible.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Ensure quality at the beginning of the process • Ensure seamless integration of the processes and services • End-to-end integration includes the control of the integrated flow of the goods, information, knowledge and financial transactions • Buffers between activities are prevented as much as possible. <p><i>Example:</i> Considering the pattern for a cancellation it is important to first decide on the eligibility of the cancelation request and then to perform the activities to execute the cancellation but it is still an integrated process.</p>	

B.6 S1.2.3

<p><i>SME Growth Transition</i></p> <p>S1.2.3 Economic production is a strategy to gain/or maintain a competitive advantage in the market. The focus is on efficiency, improving the production/service delivery process, to eliminate rework and to cut cost.</p>		
<p><i>To Do</i></p> <p>DP3: Keep stock to a minimum DP7: Design tasks around the outcome and value-adding activities DP21: Measure performance</p>		
<p><i>Create value through operational excellence (BPM Patlet 3)</i></p>		
<p><i>Why</i></p> <p>Growth is through operational excellence. Economic production is a prerequisite. Value is related to either improved performance related to responsiveness and/or productivity.</p>	<p><i>What</i></p> <p>Save cost, eliminate non-value-adding activities and measure performance to identify opportunities for improvement.</p>	<p><i>Value</i></p> <p>Financial performance benefit from reduced cost.</p>
<p>DP3</p>	<p><i>Statement:</i> Stock is kept to a minimum. (In professional services time is the same as stock) <i>Rationale/Motivation:</i> Keeping stock at a minimum saves costs since unnecessary investment, storage and transport is prevented. It also allows quality problems to be detected and solved quickly. <i>Key Action:</i> Products must enable delivery under different labels.</p>	
<p>DP7</p>	<p><i>Statement:</i> Tasks are designed around the outcome and value-adding activities. <i>Rationale/Motivation:</i> By making workers responsible for the delivery of the outcome they feel more involved and tend to take more responsibility for their work, which increases effectiveness, quality and efficiency. It also increases their job satisfaction. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Remove activities that do not add value • Minimise activities that do not contribute to the final product directly • Design task around the outcome and not a function • Give autonomy to workers over when and how they are going to perform the task. 	
<p>DP21</p>	<p><i>Statement:</i> Measure performance. <i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information. 	

B.7 S1.3.1

<p><i>SME Growth Transition</i></p> <p>S1.3.1 Expansion of market and distribution channels is a strategy to ensure dominance of distribution channels and the associated competitive advantage in the market.</p>		
<p><i>To Do</i></p> <p>DP12: Separate channel specific and channel independent processes.</p>		
<p><i>Growth through Replication (BPM Patlet 7)</i></p>		
<p><i>Why</i></p> <p>Growth is through the expansion of distribution channels. A new distribution channel could involve a new channel such as internet or mail.</p>	<p><i>What</i></p> <p>Differentiate between channel specific and channel independent processes. Standardise channel independent processes. Define a standard process per channel specific process.</p>	<p><i>Value</i></p> <p>Certainty of delivery increases if processes are replicated across different distribution channels.</p>
<p>DP12</p>	<p><i>Statement:</i> Channel-specific is separated from channel-independent.</p> <p><i>Rationale/Motivation:</i> A lot of business activity is independent of the channel (telephone, mail, Internet, office) through which customers are contacted and can be shared for multiple channels. The data should be available independent of the channel.</p> <p><i>Key Actions:</i></p> <p>Applications must enable multi-channel access.</p>	

B.8 S1.3.2

<p><i>SME Growth Transition</i></p> <p>S1.3.2 Geographical expansion is a strategy towards diversification and getting entry to new markets.</p>		
<p><i>To Do</i></p> <p>DP5: Standardise processes</p>		
<p><i>Growth through Replication (BPM Patlet 7)</i></p>		
<p><i>Why</i></p> <p>Growth is through replication of the business at a new geographical location.</p>	<p><i>What</i></p> <p>Define a standard process and implement it at all geographical locations.</p>	<p><i>Value</i></p> <p>Certainty of delivery increases if processes are replicated across different geographical locations.</p>
<p>DP5</p>	<p><i>Statement:</i> Increase consistency of behaviour through standardisation. <i>Rationale/Motivation:</i> Standard processes are repeatable, predictable, scalable and more efficient. Process standardisation is often required in order to comply with certain legislation or quality standards. <i>Key actions:</i></p> <ul style="list-style-type: none"> • Define the standard process based upon current and best practices within the company • Ensure adherence to the standard process • Reuse IT systems throughout the organisation. 	

B.9 S1.3.3

<i>SME Growth Transition</i>		
S1.3.3 Market segmentation with different lines of products/services per market is a strategy for the SME to gain and/or maintain a competitive advantage in the market.		
<i>To Do</i>		
DP24: Ensure customer centricity		
<i>Create value through Customer Intimacy (BPM Patlet 2)</i>		
<i>Why</i>	<i>What</i>	<i>Value</i>
Growth is via market segmentation and pushing different lines of products per market.	Determine the market segments and lines of products per market based on customer profiling. Define processes to scan customer preferences and to build the customer profile.	Customer convenience increases if the product is available based on customer preference.
DP24	<i>Statement:</i> Support customer centricity. <i>Rationale/Motivations:</i> Customer data should enable profiling. <i>Key actions:</i> Determine attractive pricing from customer perspective.	

B.10 S1.4.1

<i>SME Growth Transition</i>		
S1.4.1 Customer preference requires diversification of marketing, products and administrative practices, Scanning customer preference and acting on it is a strategy to gain and maintain the competitive advantage in the market.		
<i>To Do</i>		
DP2: Create a single point of contact for customers DP13: Ensure that the status of the customer request is available DP14: Capture information once at the source DP15: Exchange data in real-time		
<i>Create value through Customer Intimacy (BPM Patlet 2)</i>		
<i>Why</i>	<i>What</i>	<i>Value</i>
Customer preference requires diversification of marketing, products and administrative practices.	Ensure processes contribute towards customer satisfaction. Think like a customer.	Customer convenience increase if a service or product is available at any time, and any place and if relevant through any device. Customer convenience increases if the process is designed from a customer perspective.
DP2	<p><i>Statement:</i> Provide a single point of contact for customers.</p> <p><i>Rationale/Motivation:</i> It is much more customer friendly when the customer can direct all his/her communication to a single point, is services directly, and does not have to contact multiple people. It also ensures that consistent information is provided to the customer. It is more efficient to dedicate resources to handling customer contacts and prevent interruptions in operational activities.</p>	
DP13	<p><i>Statement:</i> The status of the customer request is readily available inside and outside the organisation.</p> <p><i>Rationale/Motivation:</i> Customers want to know when to expect a response to their request and it is also important to manage service levels internally.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Administrate and change the customer requests centrally • Customer purchase or payment must always be confirmed • Customers must be informed about the status of their request • Ensure the up-to-date status is available for customers electronically at any time, at any place with any device • Use electronic-based workflows for all customer contacts. <p><i>Example:</i> First retrieve the required communication, define the content and format of the notification and then handle the genuine communication e.g. sending the e-mail. Data about customer claim behaviour must be captured actively.</p>	
DP14	<p><i>Statement:</i> Capture information once at the source and share it.</p> <p><i>Rationale/Motivation:</i> Unnecessary intermediate layers are prevented and the performance and reliability of the data increases and the potential of errors decreases as well as the overhead cost. The risk of inconsistencies if data is maintained in multiple places is eliminated.</p> <p><i>Key Actions:</i> Consider electronic forms.</p> <ul style="list-style-type: none"> • Acquire data from the only authoritative source application • The source application for all types of data is known • Replication of data is only considered if properly motivated and managed and the replicated 	

	<p>data is never updated. Data are not replicated before it is 100% correct</p> <ul style="list-style-type: none"> • Check if data is not already available before it is captured a second time • Bring downstream information needs upstream • Life-cycle management for all information in place • Data are stored and exchanged electronically. <p><i>Example:</i> Accurate and up-to-date financial information.</p>
DP15	<p><i>Statement:</i> Data are exchanged in real-time</p> <p><i>Rationale/Motivation:</i> Users expect the most recent data as input for their processes. Decisions made based on old data have a lower accuracy and may lead to errors and/or inconsistencies.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • All changes to data are processes immediately. • Batch processes are prevented or kept to the batch size is reduced as far as possible.

B.11 S1.4.2

<i>SME Growth Transition</i>		
S1.4.2 High performance enterprises have a stronger awareness of customers and customer needs and it is a strategy of the SME to know and obtain customers to become/remain a high performance enterprise.		
<i>To Do</i>		
DP24: Ensure customer centricity		
<i>Create value through Customer Intimacy (BPM Patlet 2)</i>		
<i>Why</i> SME growth requires that the SME obtain customers.	<i>What</i> High performance enterprises tend to have a stronger awareness of customers and customer needs. Define processes to scan customer preferences and to build the customer profile.	<i>Value</i> Customer convenience increases if the process is designed from a customer perspective accommodating the customer profile.
DP24	<i>Statement:</i> Support customer centricity. <i>Rationale/Motivations:</i> Customer data should enable profiling. Determine attractive pricing from customer perspective.	

B.12 S2.2

Note: S2.1 is not considered a state transition, but the default state of a simple informal structure. S2.3 and S2.4 are considered part of the functional structure based on product based or customer based departments.

<i>SME Growth Transition</i>		
S2.2 Functional structure: There are separate departments or functions (i.e. engineering, marketing, production, personnel). It is most appropriate to small companies which have few products and locations and which exist in a relatively stable environment. There is a differentiation between back office and front office departments.		
<i>To Do</i>		
DP11: Separate back-office and front-office processes		
<i>Growth Associated with Leveraging Economies of Scale (BPM Patlet 9)</i>		
<i>Why</i>	<i>What</i>	<i>Value</i>
Growth is associated with a larger back-office and the related functional organisational structure.	Classify and separate processes as back office and front office processes. Ensure integration between back office and front office processes.	The value is in certainty due to standardisation of processes per functional department.
DP11	<p><i>Statement:</i> Front-office processes are separated from back-office processes.</p> <p><i>Rationale/Motivation:</i> Front-office processes are focusing on customer intimacy and require different skills from back-office processes that are focusing on operational excellence and re-use.</p> <p><i>Key Action:</i></p> <ul style="list-style-type: none"> Clearly define the processes the disengagement and the different logic of the front-office and back-office processes Improve access to information by customer facing staff. 	

B.13 S2.5

<i>SME Growth Transition</i>		
<p>S252 Decentralised by geographical area: Some businesses organise their activity according to geographical area. This is common in large multinational companies but it might also be appropriate for medium-sized businesses, for example a group of taxi firms, a small retail chain or a fast-food chain with several branches. Organising by area means each site can operate according to local demand but still be directed by business policy. Sometimes logistics relating to shipping, resources and staff make geographical structure the best choice.</p>		
<i>To Do</i>		
DP5: Standardise processes		
<i>Growth through Replication (BPM Patlet 7)</i>		
<i>Why</i>	<i>What</i>	<i>Value</i>
Growth is through replication of the business at a decentralised or new geographical location.	Define a standard process and implement it at all decentralised or geographical locations.	Certainty of delivery increases if processes are replicated across different decentralised or geographical locations.
DP5	<p><i>Statement:</i> Increase consistency of behaviour through standardisation. <i>Rationale/Motivation:</i> Standard processes are repeatable, predictable, scalable and more efficient. Process standardisation is often required in order to comply with certain legislation or quality standards. <i>Key actions:</i></p> <ul style="list-style-type: none"> • Define the standard process based upon current and best practices within the company • Ensure adherence to the standard process • Reuse IT systems throughout the organisation. 	

B.14 S2.6

<i>SME Growth Transition</i>	
S2.6 Divisional structure: There are separate groups for similar products, markets or geographic regions. There is a degree of difference among organisational divisions in terms of their overall goals, marketing and production methods and decision making styles. The divisions are managed with managers being responsible for their own resources. Divisions are likely to be seen as profit centres and may be seen as strategic business units for planning and control purposes.	
<i>To Do</i>	
DP1: Separate processes per business unit	
<i>Create Value through a One Time Event (BPM Patlet 6)</i>	
<i>Why</i> Introducing new product groups is a one-time event. One option is to create a new division per product group.	<i>What</i> Standardisation of processes across product divisions could still add value. However it is important to allow flexibility per product group and to be able consider such a product division as a separate business unit for potential future mergers or acquisitions.
<i>Value</i> Certainty through sustainability, the business unit would be able to function on its own.	
DP1	<i>Statement:</i> Business units are autonomous therefore create a separate process for each business unit. <i>Rationale/Motivation:</i> Autonomous business units can adapt to changes quickly because they do not need to align with other business units.

B.15 S2.7

<i>SME Growth Transition</i>		
S2.7 Shared services structure: Shared services is the provision of a service by one part of an organisation or group where that service had previously been found in more than one part of the organisation or group. Thus the funding and resourcing of the service is shared and the providing department/division effectively becomes an internal service provider.		
<i>To Do</i>		
DP10: Consider centralisation		
<i>Growth Associated with Leveraging Economies of Scale (BPM Patlet 9)</i>		
<i>Why</i>	<i>What</i>	<i>Value</i>
Growth is associated with leveraging economies of scale.	Standardise and integrate processes. Leveraging economies of scale could be implemented as a shared service typically using a centralised structure.	Certainty increases with standardisation. Performance improves with end-to-end-integration.
DP10	<p><i>Statement:</i> Components are centralised.</p> <p><i>Rationale/Motivation:</i> Centralisation can benefit from economies of scale, it eases standardisation and it is easier to manage.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> The going in position is to centralise components, unless requirements dictate a decentralised approach. 	

B.16 S3.1.1

<p><i>SME Growth Transition</i></p> <p>S3.1.1 Record keeping processes to keep record of all transactions as well as all communications are defined and standardised.</p>		
<p><i>To Do</i></p> <p>DP16: Implement a collaboration platform.</p>		
<p><i>Compliance a Prerequisite to Create Value (BPM Patlet 5)</i></p>		
<p><i>Why</i></p> <p>Compliance is a prerequisite to create value. The value is in certainty due to standardisation as well as performance improvement through end-to-end process integration.</p>	<p><i>What</i></p> <ul style="list-style-type: none"> • Record keeping is crucial for compliance such as: • Financial statutory compliance • Quality compliance • Safety compliance • Labour law compliance • Broad-based Black Economic Empowerment • Keep record of communication. • Define and implement controls to measure and manage statuses of compliance. Allocate responsibility and accountability for compliance. Use an enterprise content management or document management system. 	<p><i>Value</i></p> <p>Certainty increases through compliance.</p>
<p>DP16</p>	<p><i>Statement:</i> Provide communication, collaboration and enterprise content management or document management platform.</p> <p><i>Rationale/Motivation:</i> This allows finding and retrieving documents from one location and sharing them between workers ensuring that the necessary security and archiving measures are in place.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Leverage a new communication culture • Collaboration must be user-friendly, simple, effective and efficient • Subscribe or implements a document management system such as Dropbox or MS Sharepoint • The file transfer service must be easy to integrate • Ensure support for large files. 	

B.17 S3.1.2

<p><i>SME Growth Transition</i></p> <p>S3.1.2 The way of work to eliminate inefficiencies and to improve productivity is reviewed. Redundant activities are identified, removed and changes are implemented to monitor the level of standardisation of the process to reduce rework over time. Note: Efficiency is referring to how work is being done.</p>		
<p><i>To Do</i></p> <p>DP4: Ensure end-to-end integration of process DP5: Standardise Process DP6: Provide mandate for decision making DP7: Design tasks around outcome and value-adding activities DP21: Measure performance DP22: Minimise handovers</p>		
<p><i>Create value through operational excellence (BPM Patlet 3)</i></p>		
<p><i>Why</i></p> <p>Eliminate inefficiencies and improve productivity. Value is related to either improved performance related to responsiveness and/or productivity. Financial performance benefit from reduced cost.</p>	<p><i>What</i></p> <ul style="list-style-type: none"> • The implementation of best practices towards efficiency and the avoidance of error. • Create an awareness and understanding of process capabilities. • Improve the efficiency of process through integration. • Improve efficiency through standardisation. • Push decision making to lowest realistic level. • Eliminate non value adding activities. • Put measurements in place. • Minimise handover of work from one person to another. <p><i>How</i></p> <ul style="list-style-type: none"> • Consider Lean/Six Sigma as a method. • Consider a business analysis tool to define the business process. 	<p><i>Value</i></p> <p>Create value through operational excellence.</p>
<p>DP4</p>	<p><i>Statement:</i> Processes are integrated end-to-end, ensuring a continuous flow with nothing slowing down the value-adding steps. <i>Rationale/Motivation:</i> End-to-end integrated processes strive to deliver the output with a minimum delay, which increases customer satisfaction. It further aims to streamline processes and make them as efficient as possible. <i>Key actions:</i></p> <ul style="list-style-type: none"> • Ensure quality at the beginning of the process • Ensure seamless integration of the processes and services • End-to-end integration includes the control of the integrated flow of the goods, information, knowledge and financial transactions • Buffers between activities are prevented as much as possible. • <i>Example:</i> Considering the pattern for a cancellation it is important to first decide on the eligibility of the cancellation request and then to perform the activities to execute the cancellation but it is still an integrated process. 	
<p>DP5</p>	<p><i>Statement:</i> Increase consistency of behaviour through standardisation. <i>Rationale/Motivation:</i> Standard processes are repeatable, predictable, scalable and more efficient.</p>	

	<p>Process standardisation is often required in order to comply with certain legislation or quality standards.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Define the standard process based upon current and best practices within the company • Ensure adherence to the standard process • Reuse IT systems throughout the organisation.
DP6	<p><i>Statement:</i> Management layers are minimised and decision making is pushed down to the lowest level that make sense.</p> <p><i>Rationale/Motivation:</i> Elimination of management layers minimizes overhead costs. In addition giving the mandate for decision making at a lower level tend to change behaviour with people taking more responsibility for their work resulting in an increase in quality and efficiency.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Create self-directed teams throughout the organisations with as few as possible management layers • People who perform the actual work should have responsibility for making decisions • Provide accurate management information.
DP7	<p><i>Statement:</i> Tasks are designed around the outcome and value-adding activities.</p> <p><i>Rationale/Motivation:</i> By making workers responsible for the delivery of the outcome they feel more involved and tend to take more responsibility for their work, which increases effectiveness, quality and efficiency. It also increases their job satisfaction.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Remove activities that do not add value • Minimise activities that do not contribute to the final product directly • Design task around the outcome and not a function • Give autonomy to workers over when and how they are going to perform the task.
DP21	<p><i>Statement:</i> Measure performance.</p> <p><i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information.
DP22	<p><i>Statement:</i> Minimise handovers.</p> <p><i>Rationale/Motivation:</i> Any transfer of work between systems, people or systems and people add to the complexity of the work.</p> <p><i>Key Action:</i></p> <ul style="list-style-type: none"> • Perform the work where it makes the most sense • Involve as few as possible • Ensure interoperability for accessing applications.

B.18 S3.1.3

<i>SME Growth Transition</i>		
S3.1.3 The way of work is reviewed to ensure all processes are effective, i.e. that what is being done and the outcome of a process is adding value. Ensure that you do not increase the efficiency of a process that is not effective.		
<i>To Do</i>		
DP7: Design tasks around the outcome and value-adding activities		
<i>Create value through operational excellence (BPM Patlet 3)</i>		
<i>Why</i>	<i>What</i>	<i>Value</i>
The value of product leadership should result in the upwards trend of financial revenue.	Design tasks around the outcome and value-adding activities to ensure effectiveness.	Create value through effectiveness of the product or service.
DP7	<p><i>Statement:</i> Tasks are designed around the outcome and value-adding activities.</p> <p><i>Rationale/Motivation:</i> By making workers responsible for the delivery of the outcome they feel more involved and tend to take more responsibility for their work, which increases effectiveness, quality and efficiency. It also increases their job satisfaction.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Remove activities that do not add value • Minimise activities that do not contribute to the final product directly • Design task around the outcome and not a function • Give autonomy to workers over when and how they are going to perform the task. 	

B.19 S3.1.4

<p><i>SME Growth Transition</i></p> <p>S3.1.4 Processes to consider for specialisation are identified.</p>		
<p><i>To Do</i></p> <p>DP10: Centralise processes DP11: Separate back-office and front-office processes</p>		
<p><i>Create value through operational excellence (BPM Patlet 3)</i></p>		
<p><i>Why</i></p> <p>Value is created through economies of scale. The value is in certainty due to standardisation as well as performance improvement through end-to-end process integration.</p>	<p><i>What</i></p> <p>Centralised specialised processes as a start towards shared services. Specialisation usually starts with back office support processes.</p>	<p><i>Value</i></p> <p>Certainty increases with standardisation. Performance improves with end-to-end integration.</p>
<p>DP10</p>	<p><i>Statement:</i> Components are centralised. <i>Rationale/Motivation:</i> Centralisation can benefit from economies of scale, it eases standardisation and it is easier to manage. <i>Key Actions:</i> The going in position is to centralise components, unless requirements dictate a decentralised approach.</p>	
<p>DP11</p>	<p><i>Statement:</i> Front-office processes are separated from back-office processes. <i>Rationale/Motivation:</i> Front-office processes are focusing on customer intimacy and require different skills from back-office processes which are focusing on operational excellence and re-use. <i>Key Action:</i> Clearly define the processes the disengagement and the different logic of the front-office and back-office processes Improve access to information by customer facing staff.</p>	

B.20 S3.1.5

<i>SME Growth Transition</i>	
S3.1.5 The performance of a business process is monitored, starting with the selection of a key performance indicator (KPI) and measurement of this one KPI. An example is to measure on time delivery or another example is to monitor the number of rework requests as a result of quality deviations. KPIs are often related to time, cost or quality.	
<i>To Do</i> DP21: Measure performance	
<i>Create value through operational excellence (Process Intelligence)(BPM Patlet 4)</i>	
<i>Why</i> The value is improved performance visible through performance measurement.	<i>What</i> Monitor performance
<i>Value</i> Value is created though operational excellence	
DP21	<p><i>Statement:</i> Measure performance. <i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information.

B.21 S3.2.1

<p><i>SME Growth Transition</i></p> <p>S3.2.1 Reporting is enabled by an information system to track revenue and expenses on a monthly basis.</p>		
<p><i>To Do</i></p> <p>DP14: Capture information once at the source DP15: Exchange data in real-time DP21: Measure performance</p>		
<p><i>Create value through operational excellence (BPM Patlet 4)</i></p>		
<p><i>Why</i></p> <p>The value is improved performance visible through performance measurement.</p>	<p><i>What</i></p> <p>Report on revenue and expenses.</p>	<p><i>Value</i></p> <p>Value is created though operational excellence.</p>
<p>DP14</p>	<p><i>Statement:</i> Capture information once at the source and share it. <i>Rationale/Motivation:</i> Unnecessary intermediate layers are prevented and the performance and reliability of the data increases and the potential of errors decreases as well as the overhead cost. The risk of inconsistencies if data is maintained in multiple places is eliminated. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Consider electronic forms • Acquire data from the only authoritative source application • The source application for all types of data is known • Replication of data is only considered if properly motivated and managed and the replicated data is never updated. Data are not replicated before it is 100% correct • Check if data is not already available before it is captured a second time • Bring downstream information needs upstream • Life-cycle management for all information in place • Data are stored and exchanged electronically. <p><i>Example:</i> Accurate and up-to-date financial information.</p>	
<p>DP15</p>	<p><i>Statement:</i> Data are exchanged in real-time <i>Rationale/Motivation:</i> Users expect the most recent data as input for their processes. Decisions made based on old data have a lower accuracy and may lead to errors and/or inconsistencies. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • All changes to data are processes immediately. • Batch processes are prevented or kept to the batch size is reduced as far as possible. 	
<p>DP21</p>	<p><i>Statement:</i> Measure performance. <i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information. 	

B.22 S3.2.2 – S3.2.6

<p><i>SME Growth Transition</i></p> <p>S3.2.2 A financial system is implemented to automate the financial transactions including invoicing and management of expenses together with the management of creditors and debtors.</p> <p>S3.2.3 A marketing system is implemented to manage customer information and lead management.</p> <p>S3.2.4 A production system or professional services system is implemented with a time sheet system playing an important role in professional services and the management of raw material and batches in production.</p> <p>S3.2.5 A human resource management is implemented to manage human resources, payroll and compliance with labour legislation.</p> <p>S3.2.6 A logistics or distribution is implemented to manage delivery of products.</p>		
<p><i>To Do</i></p> <p>DP4: Standardise Process</p>		
<p><i>Create Value through Technology Enablement (BPM Patlet 10)</i></p>		
<p><i>Why</i></p> <p>Value is created through technology enablement.</p>	<p><i>What</i></p> <p>Define the financial, marketing and production processes. Select and implement systems to support the financial, marketing and production processes</p> <p><i>How:</i></p> <p>Consider cloud and subscription based technology solutions.</p>	<p><i>Value</i></p> <p>Agility is increased with information technology.</p>
<p>DP4</p>	<p><i>Statement:</i> Processes are integrated end-to-end, ensuring a continuous flow with nothing slowing down the value-adding steps.</p> <p><i>Rationale/Motivation:</i> End-to-end integrated processes strive to deliver the output with a minimum delay, which increases customer satisfaction. It further aims to streamline processes and make them as efficient as possible.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Ensure quality at the beginning of the process • Ensure seamless integration of the processes and services • End-to-end integration includes the control of the integrated flow of the goods, information, knowledge and financial transactions • Buffers between activities are prevented as much as possible. <p><i>Example:</i> Considering the pattern for a cancellation it is important to first decide on the eligibility of the cancellation request and then to perform the activities to execute the cancellation but it is still an integrated process.</p>	

B.23 S3.2.7

<i>SME Growth Transition</i>		
S3.2.7 A management information system is implemented for information dissemination and retrieval. Relevant and undistorted information reach decision makers on time.		
<i>To Do</i>		
DP21: Measure performance.		
<i>Create value through operational excellence (BPM Patlet 4)</i>		
<i>Why</i> The value is improved through better decision making based on available process intelligence.	<i>What</i> Management information systems provide information for dissemination and retrieval. <i>How:</i> Create a dashboard. Create a standard for management accounts.	<i>Value</i> Value is created through operational excellence
DP21	<p><i>Statement:</i> Measure performance.</p> <p><i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information. 	

B.24 S3.2.8

<p><i>SME Growth Transition</i></p> <p>S3.2.8 Coordination of diverse activities is enabled through inter alia collaboration systems, document management or enterprise content management and workflow</p>		
<p><i>To Do</i></p> <p>DP8: Automate processes</p>		
<p><i>Create value through Technology Enablement (BPM Patlet 10)</i></p>		
<p><i>Why</i></p> <p>Coordinate diverse activities and increase consistency of behaviour through automation.</p>	<p><i>What</i></p> <p>Automate the standard processes.</p> <p><i>How:</i></p> <p>Consider cloud and subscription based technology solutions.</p>	<p><i>Value</i></p> <p>Value is created through technology enablement.</p>
<p>DP8</p>	<p><i>Statement:</i> Increase consistency of behaviour through automation.</p> <p><i>Rationale/Motivation:</i> Automated tasks are more efficient in time and costs, and less error-prone than manual tasks.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Redesign then automate • Identify routine tasks as it required relatively little specific knowledge and can be automated fairly easily. <p><i>Example:</i> Consider electronic-based workflows for human resource processes. Processes are supported by a Business Process Management System (BPMS).</p>	

B.25 S3.2.9

<i>SME Growth Transition</i>		
S3.2.9 Information systems is used to better serve markets. Examples are online trading, tracking of orders, social media for marketing and process execution (using workflow, business rule engine and an integration platform).		
<i>To Do</i>		
DP13: Ensure status of customer request available DP14: Capture information once at the source DP15: Exchange data in real-time DP17: Ensure IT systems are available at any time, place or on any device DP20: Manage business rules		
<i>Create value through Technology Enablement (BPM Patlet 10)</i>		
<i>Why</i> Technology is used to serve markets.	<i>What</i> Automate the standard processes. Ensure information is available on time. Capture information only once. <i>How:</i> Consider cloud and subscription based technology solutions.	<i>Value</i> Value is created through technology enablement.
DP13	<p><i>Statement:</i> The status of the customer request is readily available inside and outside the organisation.</p> <p><i>Rationale/Motivation:</i> Customers want to know when to expect a response to their request and it is also important to manage service levels internally.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Administrate and change the customer requests centrally • Customer purchase or payment must always be confirmed • Customers must be informed about the status of their request • Ensure the up-to-date status is available for customers electronically at any time, at any place with any device • Use electronic-based workflows for all customer contacts. <p><i>Example:</i> First retrieve the required communication, define the content and format of the notification and then handle the genuine communication e.g. sending the e-mail. Data about customer claim behaviour must be captured actively.</p>	
DP14	<p><i>Statement:</i> Capture information once at the source and share it.</p> <p><i>Rationale/Motivation:</i> Unnecessary intermediate layers are prevented and the performance and reliability of the data increases and the potential of errors decreases as well as the overhead cost. The risk of inconsistencies if data is maintained in multiple places is eliminated.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Consider electronic forms • Acquire data from the only authoritative source application • The source application for all types of data is known • Replication of data is only considered if properly motivated and managed and the replicated data is never updated. Data are not replicated before it is 100% correct • Check if data is not already available before it is captured a second time • Bring downstream information needs upstream • Life-cycle management for all information in place • Data are stored and exchanged electronically. <p><i>Example:</i> Accurate and up-to-date financial information.</p>	
DP15	<p><i>Statement:</i> Data are exchanged in real-time</p> <p><i>Rationale/Motivation:</i> Users expect the most recent data as input for their processes. Decisions made based on old data have a lower accuracy and may lead to errors and/or inconsistencies.</p> <p><i>Key Actions:</i></p>	

	<ul style="list-style-type: none"> • All changes to data are processed immediately. • Batch processes are prevented or kept to the batch size is reduced as far as possible.
DP17	<p><i>Statement:</i> IT systems are available at any time on any location (and any device).</p> <p><i>Rationale/Motivation:</i> Customers and employees perform their work at various locations at various times and with various devices and they expect to be supported notwithstanding the scenario.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Consider cloud based software • Strong authentication services are available to ensure secure access • Support devices commonly used to access online services • Support mobile devices • Implementation of Web standards. <p><i>Example:</i> Order transactions must be completely executed through the internet.</p>
DP20	<p><i>Statement:</i> Rules (that are complex or apt to change) are managed in a rule engine.</p> <p><i>Rationale/Motivation:</i> Business rules can be used by end users, it can be re-used and changes are easier than hard coded rules.</p>

B.26 S3.3.1

<i>SME Growth Transition</i>		
S3.3.1 Rules (policies, procedures and standards) are formalised and institutionalised. SME growth is often associated with an increase in staff, and it is important to set the rules and apply the rules consistently to all staff.		
<i>To Do</i>		
DP5: Standardise Process		
<i>Compliance a Prerequisite to Create Value (BPM Patlet 5)</i>		
<i>Why</i> Compliance is a prerequisite to create value.	<i>What</i> Formulate the rules including policies and standards. Institutionalise procedures. <i>How:</i> Define the responsibility and accountability for the adherence to policies, standards and procedures.	<i>Value</i> The value of compliance is associated with an increase in certainty due to compliance.
DP5	<p><i>Statement:</i> Increase consistency of behaviour through standardisation.</p> <p><i>Rationale/Motivation:</i> Standard processes are repeatable, predictable, scalable and more efficient. Process standardisation is often required in order to comply with certain legislation or quality standards.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Define the standard process based upon current and best practices within the company • Ensure adherence to the standard process • Reuse IT systems throughout the organisation. 	

B.27 S3.3.2

<p><i>SME Growth Transition</i></p> <p>S3.3.2 Operational controls such as the control of stock are implemented</p>		
<p><i>To Do</i></p> <p>DP21: Measure performance DP18: End-to-end security</p>		
<p><i>Compliance a Prerequisite to Create Value (BPM Patlet 5)</i></p>		
<p><i>Why</i></p> <p>Compliance is a prerequisite to create value.</p>	<p><i>What</i></p> <p>Define and implement controls as part of the process.</p> <p><i>How:</i></p> <p>Define the responsibility and accountability for the adherence to policies, standards and procedures.</p>	<p><i>Value</i></p> <p>The value of compliance is associated with an increase in certainty due to compliance.</p>
<p>DP21</p>	<p><i>Statement:</i> Measure performance. <i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information. 	
<p>DP18</p>	<p><i>Statement:</i> End-to-end security must be provided using multiple defence strategies. <i>Rationale/Motivation:</i> Confidentiality, integrity and availability must be ensured. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Protection of personal information and data privacy • Security of financial transactions • Security of employee information • Consider separation of data to ensure confidentiality. <p><i>Examples:</i> Collaboration takes place without endangering the intellectual property or the security of the enterprise.</p>	

B.28 S3.3.3

<p><i>SME Growth Transition</i></p> <p>S3.3.3 Financial controls including the performance of sub-units, departments, divisions and products are monitored.</p>		
<p><i>To Do</i></p> <p>DP14: Capture information once at the source DP21: Measure performance</p>		
<p><i>Create value through operational excellence (Process Intelligence) (BPM Patlet 4)</i></p>		
<p><i>Why</i></p> <p>Measurement of performance contributes towards visibility of performance providing information to make management decisions.</p>	<p><i>What</i></p> <p>Monitor financial performance of sub-units, departments, divisions and products.</p> <p><i>How</i></p> <p>Define key performance indicator and targets for the management processes. Implement a business intelligence product to use as a dashboard for measurements.</p>	<p><i>Value</i></p> <p>Value is created through operational excellence.</p>
<p>DP14</p>	<p><i>Statement:</i> Capture information once at the source and share it. <i>Rationale/Motivation:</i> Unnecessary intermediate layers are prevented and the performance and reliability of the data increases and the potential of errors decreases as well as the overhead cost. The risk of inconsistencies if data is maintained in multiple places is eliminated. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Consider electronic forms • Acquire data from the only authoritative source application • The source application for all types of data is known • Replication of data is only considered if properly motivated and managed and the replicated data is never updated. Data are not replicated before it is 100% correct • Check if data is not already available before it is captured a second time • Bring downstream information needs upstream • Life-cycle management for all information in place • Data are stored and exchanged electronically. <p><i>Example:</i> Accurate and up-to-date financial information.</p>	
<p>DP21</p>	<p><i>Statement:</i> Measure performance. <i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information. 	

B.29 S3.3.4

<p><i>SME Growth Transition</i></p> <p>S3.3.4 Compliance to regulations and quality standards is monitored.</p>		
<p><i>To Do</i></p> <p>DP21: Measure performance</p>		
<p><i>Compliance a Prerequisite to Create Value (BPM Patlet 5)</i></p>		
<p><i>Why</i></p> <p>Compliance is a prerequisite to create value.</p>	<p><i>What</i></p> <p>Monitor regulatory and quality compliance.</p> <p><i>How:</i></p> <p>Include the control steps to ensure regulatory and quality compliance as part of the process definition.</p>	<p><i>Value</i></p> <p>The value of compliance is associated with an increase in certainty due to compliance.</p>
<p>DP21</p>	<p><i>Statement:</i> Measure performance.</p> <p><i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information. 	

B.30 S3.3.5

<i>SME Growth Transition</i>	
S3.3.5 The SME is always ready for a due diligence appraisal whether it is to support a business plan to attract funding, whether it is undertaken by a prospective shareholder or whether it is part of the evaluation of the SME as a supplier on a large contract. A due diligence appraisal establishes the assets and liabilities of a company and evaluate its commercial potential. Well-established policies, procedures and rules as well as operational and financial controls contribute towards a positive outcome of a due diligence appraisal.	
<i>To Do</i>	
DP21: Measure performance	
<i>Compliance a Prerequisite to Create Value (BPM Patlet 5)</i>	
<i>Why</i> Compliance is a prerequisite to create value	<i>What</i> Prepare a business plan and be ready for a due diligence investigation if funding is required.
	<i>Value</i> The value of compliance is associated with an increase in certainty due to compliance.
DP21	<p><i>Statement:</i> Measure performance.</p> <p><i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information.

B.31 S3.4.1 – 3.4.7

<p><i>SME Growth Transition</i></p> <p>S3.4.1 Cash is managed to make provision for the investments required to enable growth. Cash forecasting is based on the financial plan (the budget) as well as the actual financial results.</p> <p>S3.4.2 The processes for planning, scheduling and coordination are defined and implemented. The allocation of resources to complete specific work is known as scheduling. Coordination is the synchronisation and integration of activities, responsibilities, and command and control structures to ensure efficient completion of work.</p> <p>S3.4.3 A long-term vision is in place to ensure that the tactical and operational plans are driven by the strategic vision.</p> <p>S3.4.4 Both operational and strategic plans are defined for marketing, production, human resources and finance.</p> <p>S3.4.5 An operating budget to support strategies is in place and is used to manage operations.</p> <p>S3.4.6 Capital expenditure is planned well in advance.</p> <p>S3.4.7 A marketing forecast is available.</p>	
<p><i>To Do</i></p> <p>DP21: Measure performance</p>	
<p><i>Create value through operational excellence (Process Intelligence) (BPM Patlet 4)</i></p>	
<p><i>Why</i></p> <p>Planning is contributing towards operational excellence and value is visible through performance measurement and increases in performance reflected in financial indicator such as revenue up and cost down.</p>	<p><i>What</i></p> <p>The following is a list of plans to be in place:</p> <ul style="list-style-type: none"> - Cash forecasting - Stock control - Planning, scheduling and coordination - Long term vision - Operational and strategic planning including a marketing, production, human resources and financial plan) - Operating budget to support strategies - Capital expenditure plan - Market forecast.
	<p><i>Value</i></p> <p>Visibility of the processes</p>
<p>DP21</p>	<p><i>Statement:</i> Measure performance.</p> <p><i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information.

B.32 S4.1.1 – 4.1.4

<p><i>SME Growth Transition</i></p> <p>S4.1.1 The SME manager is supervising the employees directly. S4.1.2 Supervisors are responsible for the supervision of employees S4.1.3 A functional structure results in delegation of authority to functional managers. S4.1.4 A divisional structure results in delegation of authority to divisional managers.</p>		
<p><i>To Do</i></p> <p>DP6: Provide mandate for decision making DP19: Role clarification</p>		
<p><i>Create value through operational excellence (Efficiency) (BPM Patlet 3)</i></p>		
<p><i>Why</i></p> <p>Associated with growth is an increase in operations and to maintain the growth operational excellence is important.</p>	<p><i>What</i></p> <p>The level of supervision is related to the management of the processes. As the SME grows:</p> <ul style="list-style-type: none"> • Supervision matures from direct supervision by the owner to supervised supervision. • Reporting relationships mature from informal reporting lines to formally defined reporting lines with lines of authority specified in an organisation chart. • Delegation of authority varies between functional delegation, delegation of day-to-day operating authority, divisional authority. • Delegation of authority varies regarding the mandate of the authority with examples authority to promote a direct worker, dismissal of a direct worker, additional of new products or services, selection of new equipment of unbudgeted spending. 	<p><i>Value</i></p> <p>Efficiency of processes including the management of these processes result in better response, higher productivity and/or lower financial cost.</p>
<p>DP6</p>	<p><i>Statement:</i> Management layers are minimised and decision making is pushed down to the lowest level that make sense. <i>Rationale/Motivation:</i> Elimination of management layers minimizes overhead costs. In addition giving the mandate for decision making at a lower level tend to change behaviour with people taking more responsibility for their work resulting in an increase in quality and efficiency. <i>Key actions:</i></p> <ul style="list-style-type: none"> • Create self-directed teams throughout the organisations with as few as possible management layers • People who perform the actual work should have responsibility for making decisions • Provide accurate management information. 	
<p>DP19</p>	<p><i>Statement:</i> Role clarification and ensure authorisations are role-based. <i>Rationale/Motivation:</i> A role based authorisation model is less sensitive for changes in the organisation structure and the same role usually have the same authorisations resulting in a more efficient model to maintain. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Do not log in using administrator accounts • Access should be granted only for the amount of time necessary • Access rights that are no longer needed should be revoked • Roles are related to responsibilities and not to specific applications 	

	<ul style="list-style-type: none">• Centralise the administration of identities, roles and authorisations• Clarify responsibilities• Separate the execution of processes and the control of processes.
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B.33 S4.1.5 – 4.1.6

<p><i>SME Growth Transition</i></p> <p>S4.1.5 Delegation of authority is managed by setting objectives for managers and measure performance against the objectives.</p> <p>S4.1.6 Delegation of authority is managed by putting a process in place to escalate exceptions</p>		
<p><i>To Do</i></p> <p>DP21: Measure performance</p>		
<p><i>Create value through operational excellence (Process Intelligence) (BPM Patlet 4)</i></p>		
<p><i>Why</i></p> <p>Value is created through operational excellence.</p>	<p><i>What</i></p> <p>When authority is delegated the objectives need to be clearly specified the responsible person. The delegated responsibility is managed by exceptions.</p>	<p><i>Value</i></p> <p>The value is improved performance visible through performance measurement.</p>
<p>DP21</p>	<p><i>Statement:</i> Measure performance.</p> <p><i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information. 	

B.34 S4.1.7 – 4.1.10

<p><i>SME Growth Transition</i></p> <p>S4.1.7 Delegation of authority includes authority to promote direct workers, dismiss direct workers, add new products or services, select new equipment and approve unbudgeted expenditure</p> <p>S4.1.8 Delegation of day-to-day operating authority is given with the necessary mandate.</p> <p>S4.1.9 The formal definition of reporting relationships is visible and the lines of authority are specified in organisation chart.</p> <p>S4.1.10 Strategy-making power (acquisitions, diversification and vision) is centralised.</p>		
<p><i>To Do</i></p> <p>DP6: Provide mandate for decision making</p> <p>DP19: Role Clarification</p>		
<p><i>Create value through operational excellence (Process Intelligence) (BPM Patlet 4)</i></p>		
<p><i>Why</i></p> <p>Associated with growth is an increase in operations and to maintain the growth operational excellence is important including the delegation of authority.</p>	<p><i>What</i></p> <p>The level of supervision is related to the management of the processes. As the SME grows:</p> <ul style="list-style-type: none"> • Supervision matures from direct supervision by the owner to supervised supervision. • Reporting relationships mature from informal reporting lines to formally defined reporting lines with the lines of authority specified in an organisation chart. • Delegation of authority varies between functional delegation, delegation of day-to-day operating authority, divisional authority. • Delegation of authority varies regarding the mandate of the authority with examples authority to promote a direct worker, dismissal of a direct worker, additional of new products or services, selection of new equipment of unbudgeted spending. 	<p><i>Value</i></p> <p>Improved supervision results in higher productivity and/or lower financial cost.</p>
<p>DP6</p>	<p><i>Statement:</i> Management layers are minimised and decision making is pushed down to the lowest level that make sense.</p> <p><i>Rationale/Motivation:</i> Elimination of management layers minimizes overhead costs. In addition giving the mandate for decision making at a lower level tend to change behaviour with people taking more responsibility for their work resulting in an increase in quality and efficiency.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Create self-directed teams throughout the organisations with as few as possible management layers • People who perform the actual work should have responsibility for making decisions • Provide accurate management information. 	
<p>DP19</p>	<p><i>Statement:</i> Role clarification and ensure authorisations are role-based.</p> <p><i>Rationale/Motivation:</i> A role based authorisation model is less sensitive for changes in the organisation structure and the same role usually have the same authorisations resulting in a more efficient model to maintain.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Do not log in using administrator accounts • Access should be granted only for the amount of time necessary 	

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| | <ul style="list-style-type: none">• Access rights that are no longer needed should be revoked• Roles are related to responsibilities and not to specific applications• Centralise the administration of identities, roles and authorisations• Clarify responsibilities• Separate the execution of processes and the control of processes. |
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B.35 S4.2.1

<p><i>SME Growth Transition</i></p> <p>S4.2.1 Intuitive decision making is replaced with an understanding of the decision making process to make more informed decision.</p>		
<p><i>To Do</i></p> <p>DP5: Standardise Process</p>		
<p><i>Compliance a Prerequisite to Create Value (BPM Patlet 5)</i></p>		
<p><i>Why</i></p> <p>Standardisation of decision making to replace intuitive decision making.</p>	<p><i>What</i></p> <p>Understand the decision making process</p>	<p><i>Value</i></p> <p>Compliance to standards increase certainty and reduce risk.</p>
<p>DP5</p>	<p><i>Statement:</i> Increase consistency of behaviour through standardisation. <i>Rationale/Motivation:</i> Standard processes are repeatable, predictable, scalable and more efficient. Process standardisation is often required in order to comply with certain legislation or quality standards. <i>Key actions:</i></p> <ul style="list-style-type: none"> • Define the standard process based upon current and best practices within the company • Ensure adherence to the standard process • Reuse IT systems throughout the organisation. 	

B.36 S4.2.2

<p><i>SME Growth Transition</i></p> <p>S4.2.2 Specialists are appointed to make decisions on the basis of expertise and analysis of information</p>	
<p><i>To Do</i></p> <p>DP21: Measure performance</p>	
<p><i>Create value through operational excellence (Process Intelligence) (BPM Patlet 4)</i></p>	
<p><i>Why</i></p> <p>The availability of process intelligence contributes to decision making with resultant improved performance.</p>	<p><i>What</i></p> <p>Maturing from intuitive decision making specialists make decisions based on expertise and analysis of information. It is important that relevant and undistorted information reaches decision makers on time.</p>
<p><i>Value</i></p> <p>Improved performance.</p>	
<p>DP21</p>	<p><i>Statement:</i> Measure performance. <i>Rationale/Motivation:</i> Measure performance to enable the identification of opportunities to reduce cost and to improve efficiency. Ensure decision makers have access to information with an understanding of the meaning and relevance of the information. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Define a control for each process • Reduce cost of financial transactions • Measure performance against the control • Do strategic planning as a control mechanism • Prepare a budget as a control mechanism • Ensure accuracy of management information.

B.37 S4.2.3

<p><i>SME Growth Transition</i></p> <p>S4.2.3 Participation of employees in the decision making process is promoted with an associated increase in the level of motivation of employees. Communication and change management.</p>		
<p><i>To Do</i></p> <p>DP6: Provide mandate for decision making</p>		
<p><i>Create value through operational excellence (Efficiency) (BPM Patlet 3)</i></p>		
<p><i>Why</i></p> <p>Associated with growth is an increase in operations and to maintain the growth operational excellence is important. Motivation of staff to participate and take responsibility for operational excellence result in better response, higher productivity and/or lower financial cost.</p>	<p><i>What</i></p> <p>Motivate staff allowing and encouraging participation and change management to get staff involved in operational excellence.</p>	<p><i>Value</i></p> <p>Operational excellence result in better response, higher productivity and/or lower financial cost.</p>
<p>DP6</p>	<p><i>Statement:</i> Management layers are minimised and decision making is pushed down to the lowest level that make sense.</p> <p><i>Rationale/Motivation:</i> Elimination of management layers minimizes overhead costs. In addition giving the mandate for decision making at a lower level tend to change behaviour with people taking more responsibility for their work resulting in an increase in quality and efficiency.</p> <p><i>Key actions:</i></p> <ul style="list-style-type: none"> • Create self-directed teams throughout the organisations with as few as possible management layers • People who perform the actual work should have responsibility for making decisions • Provide accurate management information. 	

B.38 S5.1 – 5.2, S5.6

<i>SME Growth Transition</i>		
S5.1 An incentive scheme is included as part of the remuneration package. S5.2 A performance management process is defined and implemented. S5.6 The culture and values of the SME are protected as the SME grows.		
<i>To Do</i>		
DP23: Reward systems support desired behaviour		
<i>Create value through customer intimacy (BPM Patlet 2)</i>		
<i>Why</i>	<i>What</i>	<i>Value</i>
SME growth requires that the SME obtain customers. The staff of an SME is key to establish customer intimacy.	Assessment of staff and the staff reward system must evoke and support desired customer and service behaviour. Consider the remuneration, performance management, incentive scheme and culture and values to influence behaviour.	Value is created through customer intimacy.
DP23	<p><i>Statement:</i> Assessment and reward systems must evoke and support desired customer and service oriented behaviour and adherence to espoused norms and values.</p> <p><i>Rationale:</i> As a strategic focus, an organisation places high value on customers and the service to them, and treasures the norms and values by which business is done. Ensure that the assessment and (monetary) reward systems motivate behaviour that is consistent with these views.</p> <p><i>Key actions:</i></p> <p>Investigate and reengineer pertinent assessment and reward systems.</p> <p>Define necessary employee and management training.</p> <p>Define the necessary information supply and associated systems for supporting desired employee behaviour.</p>	

B.39 S5.3

<p><i>SME Growth Transition</i></p> <p>S5.3 Job descriptions are defined based on the processes and ensure clear role clarification.</p>		
<p><i>To Do</i></p> <p>DP19: Role clarification</p>		
<p><i>Compliance a Prerequisite to Create Value (BPM Patlet 5)</i></p>		
<p><i>Why</i></p> <p>Job descriptions are important from a labour law perspective.</p>	<p><i>What</i></p> <p>Prepare and co-sign formal job descriptions. Role clarification is a prerequisite to finalisation of job descriptions.</p>	<p><i>Value</i></p> <p>Compliance to standards increase certainty and reduce risk.</p>
<p>DP19</p>	<p><i>Statement:</i> Role clarification and ensure authorisations are role-based. <i>Rationale/Motivation:</i> A role based authorisation model is less sensitive for changes in the organisation structure and the same role usually have the same authorisations resulting in a more efficient model to maintain. <i>Key Actions:</i></p> <ul style="list-style-type: none"> • Do not log in using administrator accounts • Access should be granted only for the amount of time necessary • Access rights that are no longer needed should be revoked • Roles are related to responsibilities and not to specific applications • Centralise the administration of identities, roles and authorisations • Clarify responsibilities • Separate the execution of processes and the control of processes. 	

B.40 S5.4

<p><i>SME Growth Transition</i></p> <p>S5.4 A training and development programme is started for employees.</p>		
<p><i>To Do</i></p> <p>DP5: Standardise Process</p>		
<p><i>Compliance a Prerequisite to Create Value (BPM Patlet 5)</i></p>		
<p><i>Why</i></p> <p>Training and development contribute towards a standard way of work.</p>	<p><i>What</i></p> <p>Develop training and development material based on standardised processes.</p>	<p><i>Value</i></p> <p>Compliance to standards increase certainty and reduce risk.</p>
<p>DP5</p>	<p><i>Statement:</i> Increase consistency of behaviour through standardisation. <i>Rationale/Motivation:</i> Standard processes are repeatable, predictable, scalable and more efficient. Process standardisation is often required in order to comply with certain legislation or quality standards. <i>Key actions:</i></p> <ul style="list-style-type: none"> • Define the standard process based upon current and best practices within the company • Ensure adherence to the standard process • Reuse IT systems throughout the organisation. 	

B.41 S5.5

<p><i>SME Growth Transition</i></p> <p>S5.5 Communication and change management are in place.</p>		
<p><i>To Do</i></p> <p>DP16: Implement a collaboration platform</p>		
<p><i>Compliance a Prerequisite to Create Value (BPM Patlet 5)</i></p>		
<p><i>Why</i></p> <p>Training and development contribute towards a standard way of work.</p>	<p><i>What</i></p> <p>Develop training and development material based on standardised processes.</p>	<p><i>Value</i></p> <p>Compliance to standards increase certainty and reduce risk.</p>
<p>DP16</p>	<p><i>Statement:</i> Provide communication, collaboration and enterprise content management or document management platform.</p> <p><i>Rationale/Motivation:</i> This allows finding and retrieving documents from one location and sharing them among workers ensuring that the necessary security and archiving measures are in place.</p> <p><i>Key Actions:</i></p> <ul style="list-style-type: none"> • Leverage a new communication culture • Collaboration must be user-friendly, simple, effective and efficient • Subscribe to or implements a document management system such as Dropbox or MS Sharepoint (as discussed in Table 5-12) • The file transfer service must be easy to integrate <p>Ensure support for large files.</p>	