A method to develop Business Capabilities of a Firm

by

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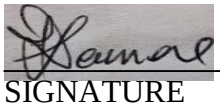
A method to develop Business Capabilities for a Firm

I declare that the above dissertation/thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



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ABSTRACT

The ever-present need for business transformations, be it digital, market changes and agility has compelled organisations to analyse and elect their optimal business capabilities. Business capabilities provide the link between the business strategy and implementation. In addition, business capability has been a topic of discussion because of its role in uncovering the sources of the firm's competitiveness. However, a clear and agreed upon definition of business capability does not exist.

Claims made by The Open Group Architecture Framework of delivering business capabilities lacks empirical evidence. Delivering business capabilities is not a trivial activity to perform, due to the nature of their characteristics and context surrounding their applicability. Enterprise Architecture practitioners mandated to design and create business capabilities struggle, due to the lack of comprehensive tools to assist with these tasks.

This study creates a technique that aims to solve the challenge of designing and developing business capability. Design Science Research is applied for this study to critically explain the problem and the solution. The technique is evaluated with industry practitioners for feedback on its effectiveness and utility purposes. In addition, the study provides with basic conceptual elements that constitute a business capability as further work.

KEYWORDS: Capability, Business Capability, Enterprise Architecture; Strategy Analysis; Business Model; Design Science Research; Business Capability Planning Technique; TOGAF, Business Model Canvas, Business Model Analysis

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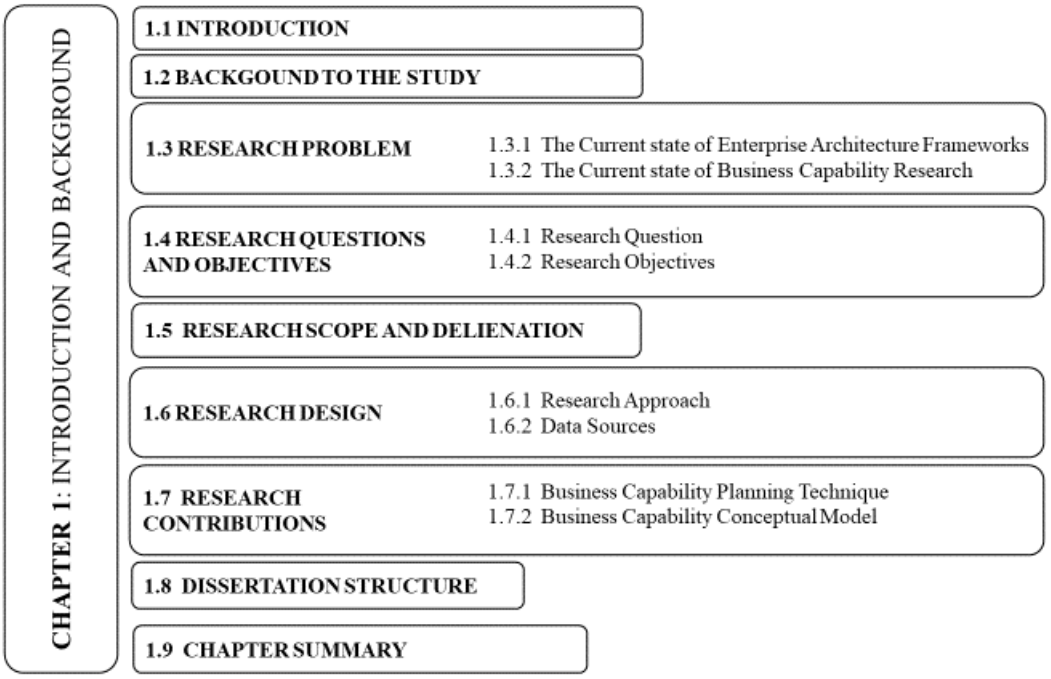


1.1 INTRODUCTION

This research reports on the development, demonstration and evaluation of the Business Capability Planning Technique (BCPT), as an effective and useful tool to deliver business capabilities. The BCPT aims to clarify and promote a deeper understanding on the concept of business capability planning and its relationship to EA. Using the outcomes of the BCPT artefact evaluation, the research proposes a technique that can be applied to solve the problem of planning and designing business capabilities.

Staying competitive in today's fast changing markets means that, organisations need to continuously re-invent their business capabilities (Offerman, Stettina and Plaat, 2017). Ongoing business transformation such as the shift towards digital and agile ways of working demands that organisations understand and assess their business capabilities to survive in the continuously changing market demands (Westerman, Bonnet and McAfee, 2014).

Organisations that fail to address the shift in markets, digital, competition, and regulation risk being affected by negative performance (Azevedo, Iacob and Almeida, 2013). The average period within which organisations can sustain their competitive advantage has decreased (Wiggins and Ruefli, 2005) and this suggests that organisations are forced to develop successive temporary advantages (Azevedo et al., 2013) by adapting their business capabilities to withstand this challenge (Henkel, Bider and Perjons, 2014).

Adapting business capabilities to withstand the continuously changing market demands can be a complex and challenging task for organisations to undertake, because it requires an organisation to change, and change is difficult (Henke et al., 2014). Majority of strategic changes embarked upon by organisations fail, due to years of uncoordinated business operations expansion and information management that has resulted into complexity (van den Berg, 2006). This resultant complexity is responsible for driving costs up worryingly and makes business change or renewal more difficult and time consuming (van Steenbergen, 2006).

Enterprise Architecture (EA) has appeared as a method that can be applied to guide and control the complexity of the organisational change and bring about the business agility and the business capabilities organisations need (The Open Group, 2016). In addition, The Open Group Architecture Framework (TOGAF) has introduced an approach to plan, revise existing business

capabilities. It provides techniques, recommends tools and provide reference to methods useful for business capability planning (The Open Group, 2022).

The background to the study is discussed in Section 1.2. The description and the motivation of the research problem in Section 1.3. The research questions and objectives are discussed in Section 1.4. Research rationale is discussed in Section 1.5. The scope and delineation of the research is discussed in Section 1.6. The research strategy discussing the approach followed for the research is discussed in Section 1.7, which is followed by the research contribution in Section 1.8. The structure of the dissertation is illustrated in Section 1.9, and the chapter summarised in Section 1.10.

1.2 BACKGROUND TO THE STUDY

The concept of business capabilities due to its role in discovering the sources of organisational competitiveness, has attracted the interest of both the academics and practitioners alike (Offerman et al., 2007). Business capabilities are the ways in which enterprises integrate resources, competences, information, processes, and their environments to deliver consistent value to customers. In addition, they describe what the business does and what it will need to do differently in response to strategic challenges and opportunities (Burton, 2013). Given this escalated interest in business capabilities, both in scholars and practitioners, it has come as no surprise that this concept has come up in EA, following EA's need to align strategic decisions with implementation (Azevedo et al., 2013).

The Open Group for Architecture Forum (TOGAF) version 9.2 has introduced basic concepts of capability-based planning and its role in designing, planning and implementing organisational change (The Open Group, 2012). Capability-based planning in the context of EA, provides Enterprise Architects with a common ground to initiate discussion with business leaders regarding business outcomes such as increased output, better quality, lower costs, revenue growth and improved market share (Scott, 2009). The TOGAF Series Guide to Business Capabilities (2022), is the recent addition their standard to support business planning processes. The focus of the guide is on mapping the business capabilities to enable effective analysis and planning (TOGAF, 2022).

1.3 RESEARCH PROBLEM

Despite the desired intentions by TOGAF to address the business capabilities challenge highlighted in the above paragraph in Section 1.2, little attention has been given to the claims made by TOGAF for the successful delivery of business capabilities. There is no method that guides the EA professionals in the planning of business capabilities. In addition, the academics, and practitioners' studies regarding TOGAF benefits in this regard are few and far between (Foorthuis, van Steenbergen, Brinkkemper, Bruls, 2016). Where there were studies conducted, there is no conclusive agreement about the claims and benefits derived directly from the TOGAF (Kotusev, 2016). Given the scarcity of empirical evidence about TOGAF contribution (Kotusev, 2016), it is necessary to understand as to how TOGAF successfully deliver on the business capabilities.

The following sub-sections 1.3.1 and 1.3.2 are a brief description of the current state of EAFs and the inconsistencies in the understanding of business capability which has led to the formulation of the research problem.

1.3.1 Current State of Enterprise Architecture Frameworks

According to Bloomberg (2014), the EAFs and methodologies at the time were the worst in EA practice in general. As a result of this challenge, organisations typically adapted the existing EAFs and methodologies to suit their specific needs (Kotusev, 2016), or even use them only as idea generators (Lange and Mendling, 2011). The TOGAF is the leading and most popular EA methodology, and it's straight-forward usage often resulted in implementation challenges practically (Lohe and Legner, 2014). Even in the presence of detailed EAFs and methodologies to practice EA, it still remains a challenge for organisations to reap the envisioned benefits from using EAFs (Kotusev, 2018). According to Dumitriu and Popescu (2020), most of the EAFs are rather abstract and making it easier to question the validity of working within that framework in a precise and effective manner.

1.3.2 The Current State of Business Capability Research

Research in business capability is limited and there is no explicit understanding of the term (Mitchell, 2011). Although there is some general knowledge, definitions vary significantly and often causes confusion (Michell, 2011). Literature shows definitions that are mainly derived from various practitioners EAFs each having its own definition of business capability

(Bredemeyer, 2003). As a result of this multiplicity in definitions, each organisation that needs to change from one EAF to another means adopting the new EAF's interpretation of business capability. This creates challenges for both the practitioners and the organisations (Liu, Sun, Jambari, Michell and Chong, 2011).

According to Offerman et.al., (2007) there are only two business capability frameworks identified and limited empirical evidence in scientific literature that supports the application of the frameworks (Brits, Botha and Herselman, 2007).

The fragmented view of business capability concept necessitates that a definition of business capability be researched, and a proposition be put forward (Offerman et al.,2007).

Following on from this Section is the discussion of the research questions and objectives in Section 1.4.

1.4 RESEARCH QUESTION AND OBJECTIVES

There is a lack of empirical evidence to support the claims by TOGAF to deliver business capabilities. Fragmented definition of business capability in the literature, impedes the potential value of the EAF in general and TOGAF specifically. This has led to the formulation of the research question seeking to understand the conceptual elements necessary to deliver business capabilities.

It is the purpose of this research to explore the definition of business capability as a concept through the review of the scientific literature. In addition, the research based on the definitional concepts found in the literature, will design, develop, evaluate the BCPT for its effectiveness and utility. The BCPT is aimed at guiding the EA practitioners in the planning of business capabilities.

1.4.1 Research Question

The main research question seeks to identify and propose conceptual elements that determine business capability successful planning. The question is as follows:

What are the conceptual elements of a technique that assist with the planning of business capability delivery?

1.4.2 Research Objectives

The research objectives are formulated as a guideline for the execution of the research process and serve as a focus on the activities of the research to answer the research questions. The research objectives are structured according to the following:

- **Main Research Objective:** Is to answer the main research question by designing, developing and evaluating the BCPT, as a technique that can be used by Enterprise Architects to plan business capabilities for their organisations.
    - **Sub-Research Objective 1**: Explore the origins, background and definition of capability and business capability.
    - **Sub-Research Objective 2**: Organise definitional key concepts of business capabilities derived from the key and prominent studies to inform the design of the BCPT.

1.5 RESEARCH SCOPE AND DELIENATION

The scope of the research is limited to the following areas:

- Understanding of business capability in terms of its definition and its conceptual framework from both academic literature and EAFs.
- An examination of EAFs relationship to business capability based on the description provided by the EAFs. This is to lead to a deeper understanding of the EAFs claim to Business Capability delivery.
- Adopt the meaning of business capability from the literature to design and develop the BCPT.
- Demonstrate the BCPT to gain feedback on its effectiveness and utility.

1.6 RESEARCH DESIGN

The research design explains how the research is conducted to achieve its stated objectives. The objective of this study is to create a BCPT, to address the EA practitioners challenge in the planning of business capabilities. Design Science Research (DSR) is a suitable approach, as it is utilised to solve real-life problems (Vaishnavi and Kuechler, 2015).

In addition, DSR has been identified as a suitable research approach when researchers need to work closely with organisations to test new ideas in real context (Dresch, Lacerda and Antunes, 2015). Therefore, DSR can be utilised as a form of knowledge production and helping organisations to solve real problems (Dresch et al., 2015). The detailed discussion on DSR as the research strategy to achieve this study's objectives is explained in Chapter 3. Figure 1.1 below illustrates DSR steps that are followed to conduct this study.

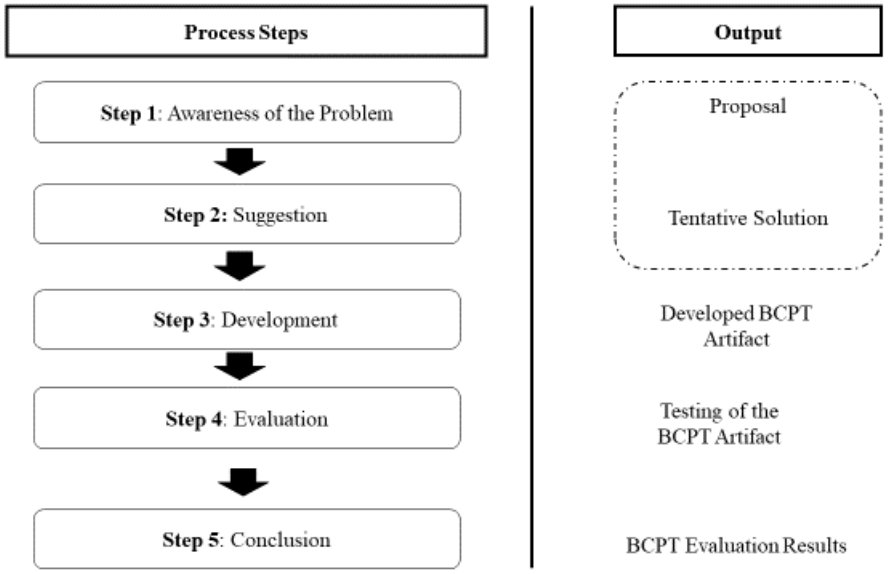


Figure 1.1: DSR Steps (appropriated from Vaishnavi & Kuechler, 2013)

1.6.1 Research Approach

A pragmatic research approach is followed and applies Vaishnavi and Kuechler (2013) DSR approach as described in Section 1.6. The approach is listed at a high-level and more detail of the approach will be provided in Chapter 3. The DSR approach is applied to achieve the following:

- Create an awareness of the problem and detail the problem statement.
- Designing and developing the BCPT artefact to help EA practitioners with the challenges of delivering business capabilities.
- Evaluate the BCPT for its utility and effectiveness through demonstration.
- Conclude by communicating the results of the research work and the knowledge contribution to this area of research.

1.6.2 Data Sources

The participants were practicing enterprise and Business Architects and practicing independent consultants. The BCPT was demonstrated as the solution to a case study problem. After the demonstration of the BCPT, a structured interview was conducted to evaluate the effectiveness and utility of the BCPT. The feedback was structured based on the key questions that were prepared to enable a focused discussion. The questions were meant to allow more than a Yes /No answers to gain more detail on the responses of the interviewee. In addition, the feedback was also recorded using an audio instrument.

1.6.3 Ethical Considerations and Data Analysis

Consent to participate was obtained from the participants prior to their involvement in the study. The participants understood that they could withdraw from the study at any time, should they wish to. The participants responses were treated in a confidential manner and their anonymity was ensured. The participants participated in the study in their professional individual capacity, using their free time and there was no company specific data was collected.

Data Analysis was the result of the BCPT demonstration that aimed to capture feedback and interest of the of the participants. The various responses were collected and analysed, and patterns in the responses of the participants were determined to understand the common thread in the responses.

1.7 RESEARCH CONTRIBUTION

This research contributes to EA and business capability domains as well as that of strategic management and information systems. The actual contributions are explained in detail in Chapter 6. The following sub-sections however provide a brief introduction to the contributions made.

1.7.1 Practical Contribution

The artefact BCPT developed through this research provides a direction to the EA community of practice who find the existing TOGAF impractical and challenging to apply when required to deliver business capabilities. The findings also provide further insight on how EA is related to capability and the role EA plays in delivering business capabilities. Organisations finding themselves challenged on what best practices to adopt when delivering business capabilities, will benefit from this work.

1.7.2 Theoretical Contribution

Business capability has many concepts in the body of knowledge, however there is still no agreement on basic definition and what constitutes it. The execution of the BCPT as a structure that combines concepts from this area of study will add to the understanding of business capability and its basic constructs.

1.8 DISSERTATION STRUCTURE

The dissertation is structured as follows:

- **Chapter 1. Introduction and Background**: Provides the background to the study, research problem, research questions and objectives.

- **Chapter 2. An Exploration of Business Capability and Enterprise Architecture Frameworks**: This chapter traces theoretical background of business capability, arguments and progression to the study and culminates in the formation of an awareness of the problem to be addressed by this study.
- **Chapter 3. Research Design**: The chapter details the research approach applied, which is design science research described by Vaishnavi and Kuechler (2008), to design, develop, evaluate Business Capability Planning Technique.
- **Chapter 4. The Design and Development of the Business Capability Planning Technique**: This chapter is structured according to the main phases of the DSR model as stated in Figure 1.1. The problem and proposed solution is reviewed and the theories, models and concepts to be utilised to develop the BCPT are discussed.
- **Chapter 5**. **The Evaluation of the Business Capability Planning Technique**: This chapter is structured according to the main phases of the DSR model stated in Figure 1.1. The evaluation of the BCPT is expressed in terms of understanding its effectiveness and utility. Finally, the EAFs claim on Business Capability delivery is understood through the BCPT propositions of Business Capability.
- **Chapter 6. Conclusion and Further Work**: This chapter is a summary of the research main results and their link to the research objectives. The final answer to the research question is discussed as well, with the limitations of the research and further studies discussed.

Figure 1.2 below is the illustration of the dissertation layout.

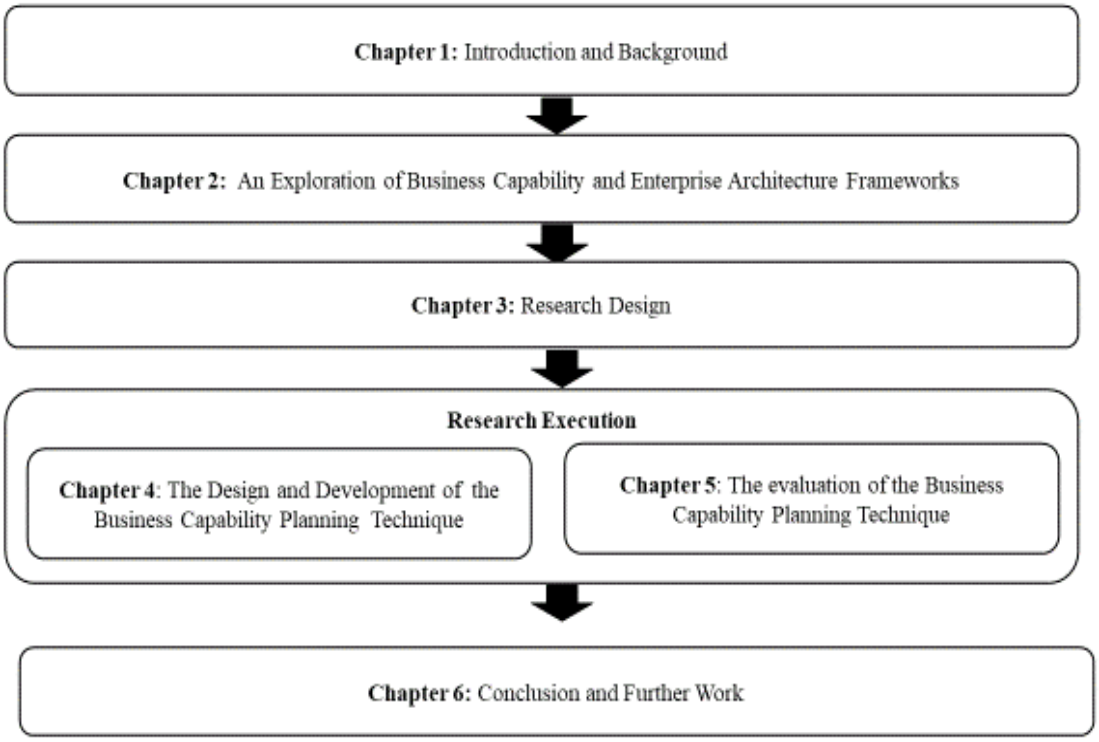


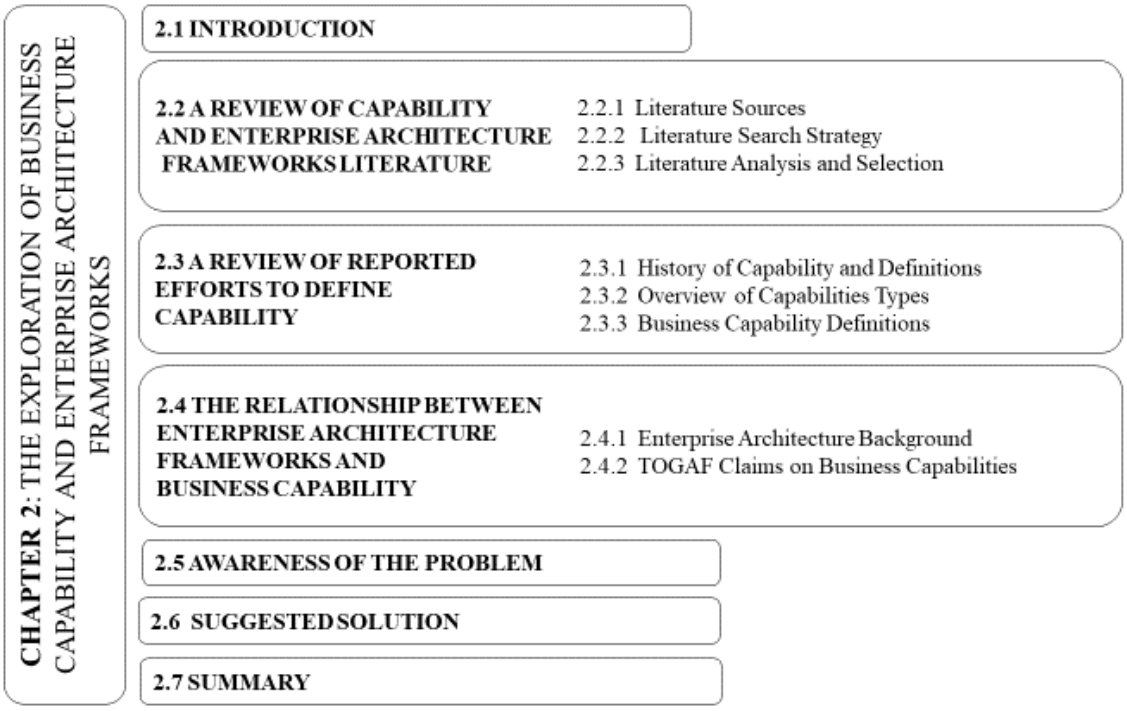
Figure 1.2: Dissertation Layout

1.9 CHAPTER SUMMARY

The absence of a practical guide to help EA practitioners deliver business capabilities for their organisations poses a threat to the EA community's credibility. Companies continue to question the value that is derived from this practice. In addition, the absence of a conceptual foundation of business capability leaves it open for interpretation and impedes future work. The next chapter establishes the awareness of the problem and explores the theoretical background of capability and the work conducted to further the meaning and understanding of it. Also, the claims by TOGAF to deliver on business capability are investigated to establish the relationship.

CHAPTER 2: AN EXPLORATION OF BUSINESS CAPABILITY AND ENTERPRISE ARCHITECTURE FRAMEWORKS

Chapter Map



2.1 INTRODUCTION

The main challenges experienced by an EA practitioner when faced with the strategic project of delivering business capability for their firms, is the lack of a comprehensive step by step guide for the development of business capabilities. In addition, TOGAF with regards to the delivery of business capabilities, only suggests some documents that should be developed and used (Kotusev, 2016). The scope of the TOGAF is about designing and building enterprise-wide information systems, rather than managing and optimising the enterprise capabilities (Lange and Mendling, 2011). As a result, the EA practitioner is left to decide on what and how much of the TOGAF suggestions can be followed to achieve their objectives.

The purpose of this chapter is to create a problem awareness (according to DSR method see Figure 1.1) of TOGAF lack of means to assist with the d of business capability by examining the literature. The TOGAF ability to assist with business capability development needs to be understood in terms of an agreed definition of business capability, the fundamental constructs of business capability, and the nature of significant academic work done to explain the TOGAF contribution. Lastly, the problem is affirmed and the requirements of a solution to address the problem is explained and the solution is proposed.

The next section reviews the literature to firstly, understand the nature of capability in terms of its origins and definitions with specific focus on business capability. The key theories, concepts, models, frameworks, and ideas underpinning business capabilities. Gaining an understanding of how various academic and practitioner studies have increased our understanding and knowledge about business capabilities. Lastly, the review is to understand the relationship between the concept of business capabilities and EA. The next section explains the literature review on capability and EAFs.

2.2 A REVIEW OF CAPABILITY AND ENTERPRISE ARCHITECTURE FRAMEWORKS LITERATURE

The purpose of this review is to gain an understanding of what has been learnt from the earlier studies (Watson and Weber, 2002). There are two types of reviews that exist. Firstly, is whether a mature topic with an accumulated body of literature exists and needs analysis and synthesis. Secondly, is where an issue that would benefit from an exposure to potential theoretical

foundations is tackled (Watson and Weber, 2002). Given, the immaturity of EA research (Mentz, 2014) and the scarcity of empirical research on business capabilities (Michel, 2011, Offerman, 2007), literature will be limited.

Figure 2.1 illustrates the literature review steps applied for this study, based on the steps proposed by Boell and Cecez-Kecmanovic (2010).

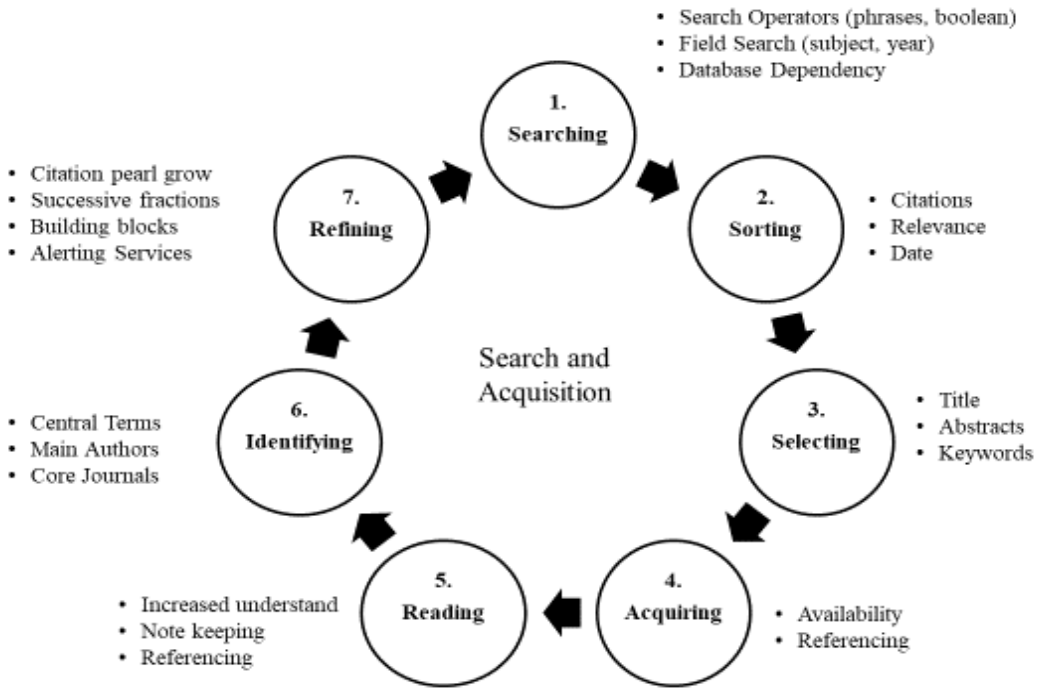


Figure 2.1 Literature Review Steps

A set of guiding objectives as described in Figure 2.1 guides the review of the literature to ensure that the search effort aligns to the scope of the research, and that it answers the fundamental research question as stated in subsection 1.4.1.

Sections 2.2.2 applied steps by Boell and Cecez-Kecmanoc (2010) to conduct a structured literature review. The steps as depicted in Figure 2.1, explains the results of the literature search, analysis, and selection, and concludes with the summary and discussions of the findings.

2.2.1 Literature Sources

Capability and EA research phenomenon is interdisciplinary. The papers that were reviewed are all published by English-speaking scholars and practitioners from the period of 1986 to 2020. The material was sourced from Strategic Management, Management Sciences, Social

Sciences, Information Technology, Information Systems published journals and research papers published by university students.

2.2.2 Literature Search Strategy

The first round of literature search was completed in Google Scholar using the Boolean operator. The keywords *Business Capability AND TOGAF* from the period 2002 to 2020 were used for the search. A total of 2, 840 results were returned, mostly conference papers and journals stored in different databases. The second set of search keywords were *Capability AND Resource* from the period 1986 to 2020. A total of 790,000 results were returned and these were electronic journals and universities research papers. It was necessary to retrieve older papers to trace the background to the capabilities concept as well as its theoretical foundations. To reduce the number of papers and focus on recent studies, the search keywords were changed to *Capability AND Business Capabilities AND TOGAF Business Capabilities* from the period 2008 to 2020. A total of 2,400 electronic journals and conference papers were returned.

Based on the search results from Google Scholar, the search was extended to other databases. The search was conducted in Science Direct, Springer Link, ACM Digital Library, Emerald Library, Scopus, IEEE, JSTOR, AIS, Taylor & Francis, Social Science and ProQuest Central. A total of 850 articles which had either a tittle of capability or business capability or TOGAF business capability were retrieved for further analysis.

Non-academic literature search was also conducted using Google search and Google Scholar respectively. The search keywords were (“business capability” OR “business capabilities” and “2020”). A total of 123 000 results were returned which included articles in the period 2000 to 2020. These were articles and white papers published on the internet by consulting organisations and blogs. The second round of search was to exclude the blogs, and the result returned were 5, 940.

2.2.3 Literature Analysis and Selection

The first stage was to decide the papers that would be included and excluded based on the title. If there was doubt whether an article should be excluded based on its title, the article would always be included in the next stage of analysis. The second stage focused on abstracts of the articles and excluded any paper that did not clearly refer to any capability type. Concerning the non-academic papers, the criteria for inclusion was based on the evaluation and comparison of

the capability and business capability definition to that of academic papers included for in-depth analysis.

The third and final stage was an in-depth analysis of the articles which referred to business capabilities, capabilities, TOGAF business capabilities and capability-based planning. The final compilation of the academic journals, reports, magazine articles, blog posts came up to 120 papers.

2.3 A REVIEW OF REPORTED EFFORTS TO DEFINE CAPABILITY

Literature reveals that the capability concept applies to different domains and is adapted for different specialisations, from business capability to information technology (Papazoglou, 2014).

To appreciate the challenge of the definition of business capability, this section provides an overview of capability origins as a fundamental concept upon which any capability type is founded upon. Secondly, the capability types and their definitions are discussed with a specific focus on business capability, which is the focus of this study. Thirdly and lastly an overview of the business capability framework emerging from the major scholars' definitions is discussed.

2.3.1 History of Capability and Definitions

The need for survival and competitiveness in the long-term has led to the formulation of multiple theories (Azevedo, Iacob, Almeida, van Sinderen, Pires and Guizzardi, 2015) that focus on resources and capabilities as a source of competitive advantage (Teece and Pisano, 1994, Eisenhardt and Martin, 2000). Resource-centric theories regard an organisation as a bundle of resources (Azevedo et al., (2015) that when their properties are rare, valuable, and inimitable extends the organisation's competitive advantage.

The Resource-based Theory's limitation is that resources are not useful unless they are correctly employed, (Penrose, 1959), and this criticism gave rise to the capability-based theories. According to the capability-based theories, the firm needs to know which capabilities to leverage, to use and plan for the acquisition of resources in a deliberate manner (Azevedo et al., 2015).

Whilst the resource-based theory focuses on the accumulation of resources, the capability-based theories focus on the adaptation, integration, and re-configuration of internal and external resources (Teece and Pisano, 1994).

The research in capability especially in the business environment was started by Ulrich (1987), who introduced the term organisational capability (Offerman et al., 2007). His main goal according to Offerman et al., (2007) was to introduce the fourth dimension to create a competitive advantage in addition to financial, strategic and technological management. Following the work by Ulrich (1987) was the introduction of other types of capabilities such as business capabilities, dynamic capabilities and EA capabilities (Witbotzki, 2015).

Despite the contribution made in terms of capability, its definition in the literature varies, and depends on the context in which the capability is used (Winter, 2000). From a military perspective the United States Department of Defence (2009) defines capability as the ability to achieve a desired effect under specified standards and conditions through combination of means and ways to perform a set of tasks. The United States of Homeland Security (2007) defines capability as a way to accomplish a mission or function and achieve desired outcomes by performing critical tasks, under specified conditions to target levels of performance. The TOGAF (2011) defines capability as the ability that an organisation, person or systems possesses. Whilst Merriam-Webster online dictionary defines capability as the quality or state of being capable.

The preliminary definitions of capability are inconclusive regarding an agreed upon definition of capability. The collected academic definitions and their comparisons are described in Table 2.1.

Table 2.1: Capability Definition Analysis

Def ID	Capability Definition	Emphasis	Source
CD 01	Is what a business does regardless of what resources being used or how those resources are configured.	What, business does, regardless of resources.	Homann, 2006.
CD 02	Has fundamental purpose in terms of the outcomes of the activity.	Purpose, outcomes, activity	Merrifield et al., 2008.
CD 03	Firm's capacity to deploy resources usually in combination using organisational processes to effect desired end.	Capacity to deploy resources using organisational processes.	Makadok, 2001.

Def ID	Capability Definition	Emphasis	Source
CD 04	Operations strategy involves exploiting capabilities of operations resources.	Exploiting resources capabilities.	Slack et al., 2004.
CD 05	An organisation's ability to assemble, integrate and deploy valued resources.	Ability to assemble and integrate resources.	Bharadwaj 2000.
CD 06	Process capability describes the range results that can be achieved by following a software process.	Results of a process.	Paul et al., 1993.
CD 07	The ability that an organisation, persons or systems possesses.	Ability of a system or person.	Josey et al., 2009.
CD 08	Abilities within a firm which can be linked together as a business process to enable a specific purpose or outcome.	Abilities, process, outcome.	Beimborn et al., 2005.
CD 09	Capacity of team of resources to perform some task or activity.	Capacity of resources to perform tasks.	Grant, 1991.
CD 10	Capabilities are formed through the coordination and integration of activities and processes.	Coordination of activities and processes.	Hafeez et al., 2002.
CD 11	Capabilities are organisation's ability to assemble, integrate, and deploy valued resources.	Ability to deploy resources.	Amit & Schoemaker, 1993.
CD 12	Capability involves the ability of an organisation to use and combine available tangible and intangible resources to accomplish or enhance business processes and tasks to reach goals.	Ability to use resources to accomplish goal-oriented tasks.	Wibotzki, 2015.
CD 13	Capability represents a manageable unit of change and supports incremental development through an explicit distinction between systems and their capabilities.	Change and development.	Becker et al., 2011.
CD 14	Capabilities provide a high-level view of the current and desired abilities of an organisation, in relation to the organisation's strategy and its environment.	Desired abilities, strategy, environment.	Ulrich & Rosen, 2011.

The analysis of the definitions in Table 2.2, explains that the literature is inconclusive about the capability definition. However, several themes that have emerged from the analysis of the definitions are explored to gain a better understanding as to which key factors constitutes a capability. The themes are the following:

- Capabilities relate to resources.
- Capabilities are connected to a context or an environment (internal/external).
- Capabilities relate to goals, outcome or value.
- Capabilities relate to work activities or processes.
- Capabilities are linked to information concept.

- Capabilities relate to roles or actors.

The themes are characteristics of a capability, and each capability type should inherit these characteristics (Papazoglou, 2014). The capability types are organisational capabilities, dynamic capabilities, information technology Capabilities, EA capabilities and business capabilities.

Figure 2.2 depicts the main capability and the types that flows from it.

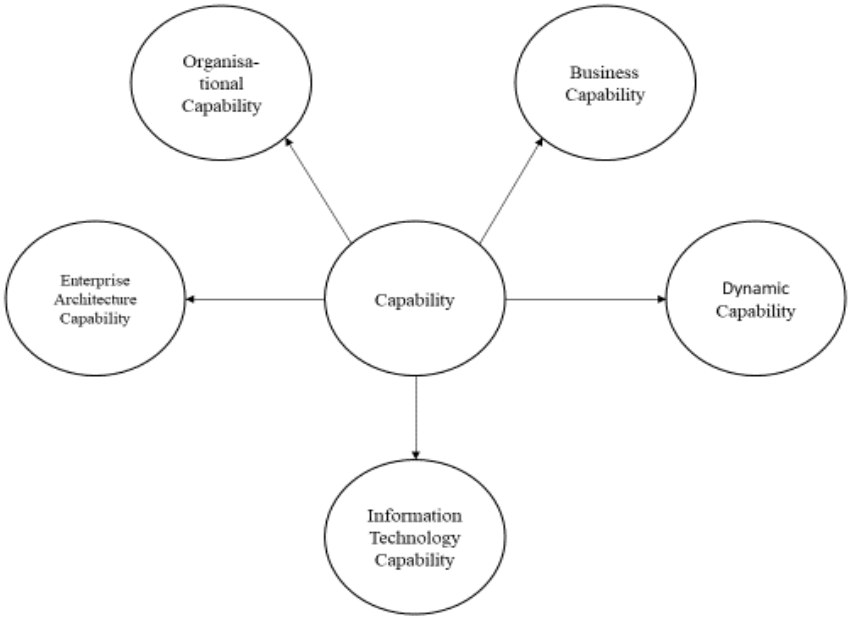


Figure 2.2: Types of capabilities.

The following subsection discusses the types of capabilities and their definitions, with a specific focus on how the business capability is defined in the literature.

2.3.2 Overview of Capability Types

The discussion of capability in the literature leads to different definitions and it is common that the capability term is used interchangeably with other capability sub-type (Winter, 2000).

This means that different authors use the same term for describing different concepts and this leads to confusion (Papazoglou, 2014). The following subsection explains the sub-types of capabilities and their specialisations. This is necessary to construct a set of definition that best reflects the meaning of business capability, which is the subject of this study.

2.3.2.1 Organisational Capability

Organisational capability is the firm's ability to manage people and resources to gain competitive advantage (Ulrich and Lake (1991). They are the firm's capacity to deploy its resources, tangible or intangible to perform a task or activity to improve performance (Amit and Schoemaker 1993, Grant, 1991, Teece et al., 1997). According to Helfat and Peteraf (2003) it is the organisation's ability to perform a set of coordinated tasks, using resources of the organisation to achieve end results. Organisational capabilities are essential to firm's ability to solve their organisational challenges effectively (Dosi, Nelson and Winter, 2000).

Authors differentiate between the distinct organisational capabilities (Inan and Bititci, 2015). There are organisational capabilities that exhibit an ability to execute basic functional activities of the firm (Collis, 1994). Winter (2003), agreeing with Collis (1994) defines capabilities that execute basic functions as ordinary capabilities that allows the firm to earn a living in the present. A higher order of organisational capabilities is necessary for organisation to gain competitive advantages as well possessing an ability to respond to internal and external changes (Inan and Bititci, 2015, Winter, 2003, Collis, 1994). Literature on organisational capability definition is disparate, and mainly suggests multiple factors that would influence an organisation capability. Future work on the definition of organisation capability is necessary to explain its key concepts.

2.3.2.2 Dynamic Capability

Dynamic capabilities are firms are the firm's ability to integrate, build and re-configure internal and external competencies to address rapidly changing environments (Teece, 2007). In addition, dynamic capability is the capacity of the organisation to purposefully create, extend, extend and modify its resources (Pult and Manwani, 2014).

Eisenhardt and Martin (2000) defines dynamic capability as organisational and strategic routines by which firms achieve new resources configurations as markets emerge, collide, split, evolve and die. The authors seem to agree on how a dynamic capability should be conceptualised and defined. Dynamic capability emphasis is on competence and the changing environment.

2.3.2.3 Information Technology Capabilities

IT capabilities is the major determinant of competitiveness (Papazoglou, 2014). However, IT capabilities are not enough on their own (Tamm, Seddon, Shanks and Reynolds, 2011), but requires capability analysis for technology planning and ends with business opportunity analysis, thus linking technology to strategy.

IT capability is the generic knowledge intensive ability to jointly mobilise scientific and technical resources which enables a firm to successfully develop innovative products (Alizadeh, 2012). In addition, Alizadeh (2012) goes on to argue that the literature does not have a consistent definition of IT capability. The ability to effectively combine and apply IT resources, including IT infrastructure and human IT skills to organisational processes is a source of competitive advantage (Bharadwaj, 2000, BI, Smyrnios and Kam (2000).

Another definition of IT capability by (Curley, 2010) places emphasis on the ability to execute stable and repeatable pattern of IT management activities in support of value creation. Sambamurthy and Zmud (2000) defines IT capability as the combination of IT based assets and routines that support business conduct in value adding. In concluding the definition of IT capability, the authors are not consistent on their definitions and there is no agreed upon definition of IT capabilities (Alizadeh, 2012).

2.3.2.4 Enterprise Architecture Capabilities

The Enterprise Architecture capability describes the combination of know-how in terms of organisational knowledge, procedures and resources. This knowledge is externalised in a specific process with resource to achieve a specific outcome for a defined enterprise initiative (Wibotzki, 2015). Shanks et al., 2008, Teece, 2007 and Van de Wetering, 2019, state that EA capabilities help organisation to sense possible business and IT opportunities as well as to transform and deploy these initiatives and opportunities while making sure that the firm's assets and resources are in line with the strategic goals and the market needs.

2.3.2.5 Business Capabilities

Business capability research originated from two different literature streams, namely Resource-Based View (RBV) and EA (Offerman et al., 2007). From the RBV research perspective, business capabilities are defined as a bundle of skills and the knowledge that is strategically

important to manage assets and coordinate activities effectively (Acar and Zehir, 2009). The EA research describes the concept of business capabilities as the combination of process, technology, economic goods and persons (Iyer and Gottlieb, 2004, The Open Group, 2009).

Supporting The Open Group (2009) concept of business capabilities is Barroero, Motta and Pignatelli (2010), defining business capabilities as a business unit that encompasses a coherent set of activities, supported by assets including people, processes and technology.

Homann (2010) provides a definition of business capability as the ability that a business possesses to achieve a specific purpose and outcome. Homann (2010) goes on argue that it is what the business does that creates value. Business Capabilities are closely related to the concepts of skills, competencies, processes and resources (Offerman et al., 2007). According to Bakhtiyari and Adel (2012), The Open Group (2016) business capability is what a business does, and that it does not communicate where, why or how something is done. Kotusev (2019) defines business capability as general capacity of an organisation to perform a specific business activity. Kotusev (2019) goes on to describe business capabilities as representing high-level abstractions that encompass all underlying business processes, roles, information systems and physical facilities that fulfil these capabilities. Figure 2.3 presents an external view of business capability as related to business ways (Bakhtiyari and Adel 2012, Ulrich and Rosen, 2011).

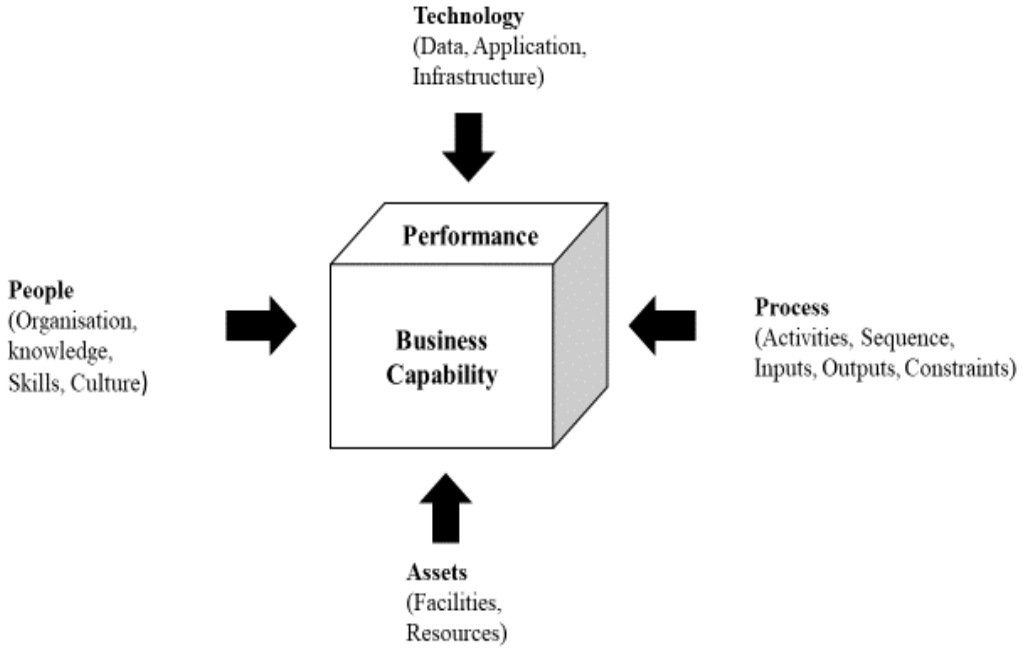


Figure 2.3: Capabilities relating other aspects of business (Bakhtiyari & Adel)

The diagram in Figure 2.3 illustrates the essential elements that must be present in the definition of business capabilities as proposed by the authors (Barroero et al., 2010, Ulrich and Rosen, 2011, Bhaktiyari and Adel, 2011, The Open Group, 2016, Kotusev, 2019).
The business capability essential elements depicted in Figure 2.3 are consistent with the TOGAF EAF concept of business capabilities and they are an integral part of business and EA, and the architecture development process (The Open Group, 2016). This view is supported by Barroero et al., 2010, who propose the extension of business capability to make the bridge to the data, application, and technology architecture (Offerman et al., 2007).

As far as business capability definition is concerned, literature does not show any dominant definition (Homann, 2006). However, the definitions do align with the most frequently used words. The proposed definition of business capability by Offerman et al., (2007), based on Homann (2010) and Witbotzki (2015) definitions is that a business capability is a particular ability that a business may possess to achieve a specific corporate goal.

2.3.2.6 Overview of Business Capability Frameworks

There is very limited body of knowledge for the development of business capability framework. The work conducted by Brits, Botha and Herselman (2007) where they proposed a conceptual framework for modelling business capabilities is the only published work identified.

Brits et al., 2007 proposes a business capability that is modelled over perspectives namely, external environmental knowledge, vision, goals, objectives, internal knowledge, and elements of guidance such as mission, strategies, tactics, resources, people, technology, business processes, business rules and business policies. However, there is limited empirical evidence in scientific literature on the application of this framework (Offerman et al., 2007).

In terms of practitioner's work done on the business capability framework development, the TOGAF's Capability-based planning (The Open Group, 2009), provides for an approach to model business capabilities in the business domain of an EA (Offerman et al., 2007, Barroero et al., 2010). However, there is no empirical evidence on the implementation of the framework (Offerman et al., 2007). The next section discusses EA background and the relationship

between business capabilities and EAF and the claims by EAF to deliver on business capabilities.

2.4 THE RELATIONSHIP BETWEEN ENTERPRISE ARCHITECTURE FRAMEWORK AND BUSINESS CAPABILITY

There is a need by EA to align strategic decisions with their actual implementation at the processes, systems and infrastructure levels (Azevedo et al., 2015). Despite this need by EA to align decisions strategically, the challenge encountered by EA practitioners is that processes tend to be too detailed, systems too technical, and projects usually have short term focus. This results in EA delivering little strategic value (Azevedo et al., 2015).

The TOGAF (2016) has introduced basic concepts of capability-based planning, for the role it has in the design, planning and implementing of organisational change, however, EA practitioners still face challenges to integrate the concept of capability and resources in EA descriptions (Kotusev, 2018, Roeleven, 2010, Azevedo et al., 2015).

TOGAF is a well-known EAF and provides the link between business architecture, data architecture, application architecture, technology (Barroero et al., 2010). The key concept within the business architecture domain is business capabilities (Barroero et al., 2010), which TOGAF clams to deliver. TOGAF (2022) added a chapter which is a high-level attempt to guide the architect with a means to create a capability map and align it with other business architecture viewpoints in support of business planning processes. In addition, there is also attempt by TOGAF (2022) to define the business capability concept. The next Section discusses the EA background, overview of the most prominent EAFs and TOGAF claims on business capabilities.

2.4.1 Enterprise Architecture Background

The beginning of EA can be attributed to the work of John Zachman in 1987 who illustrated and described Information Systems Architecture (ISA) framework (Tamm et al., 2011).

In 1992 Zachman partnered with Sowa to improve the ISA framework he created in 1987 (Mathee, Tobin and van Der Merwe, 2006). The EA as a term was not used instead researchers used ISA as the term to describe EA (Mathee et al., 2006) goes on to state. The Clinger-Cohen Act of 1996, once known as the Information Technology Management Reform Act of the US

Government gave instructions to federal agencies to implement a unified approach for aligning IT and business goals (Langenberg and Wegmann, 2004).

Zachman was then tasked to operationalise the EA concept for the United States Department of Defence (USDOD) resulting in Technology Architecture Framework for Information Management (TAFIM) being created. After the creation of TAFIM, the Chief Information Officer (CIO) council was established (Langenberg and Wegmann, 2004).

The CIO council created the first EAF known as the Federal Enterprise Architecture Framework (FEAF) in 1998 (Langenberg et al., 2004). It was also during 1998, that the TAFIM was officially retired by USDOD and donated to The Open Group. The Open Group grew TAFIM into what is today known as TOGAF (Langenberg et al., 2004), which is the subject of this research based on its claims of delivering business capabilities.

2.4.1.1 Overview of Enterprise Architecture Frameworks

The overview of EAFs is to give context on the relationship of EAFs and business capability. Due to limitations in the scope of the research it was important to select only the most prominent EAFs to keep the list as short as possible. The criteria for selecting the list of EAF was based on activity as early as 1987 and as recent as 2016. Selecting an EAF based on time span is representative of historical timeline of EA field and allows analysis on the grounds of known documented advancement (Mentz, 2014). In addition, Mentz (2014) goes on to state that the selection of potentially popular EAF must have a clearly recognisable and traceable history. The two popular EAFs that are selected for analysis are the Zachman Framework and TOGAF.

2.4.1.2 Zachman Framework and Business Capability

Zachman Framework is considered the most prominent framework associated with EA (Zachman, 1987). This framework is well known to EA practitioners and is believed to even have created the entire EA discipline (Kotusev, 2019) continues to argue. The popularity of the Zachman Framework is uncontested, and many EAFs and EA tools either base their EAFs on the Zachman Framework or model their EA practice artefacts on the structure provided by the Zachman Framework (Mentz, 2014).

The purpose of the Zachman Framework is to provide a means to describe the enterprise in as complete a way as possible (Zachman, 2008). It is used as a schema, that answers six interrogatives namely, what, how, where, who, when and why. The interrogatives are arranged sequentially for of six audience perspectives namely, executive, business management, architect, engineer, technician and enterprise (Mentz, 2014).

However, there are criticism against the Zachman Framework, due to its lack of a methodology and difficulty in implementing the framework (Kotusev, 2019). In addition, there is no empirical evidence to support any successful implementation of the framework in any organisation (Zachman, Ruby, 2004). Despite the framework's popularity it is regarded as impractical by EA practitioners and does not include the concept of capabilities in its structure (Graves, 2009, Kotusev, 2019).

2.4.1.3 TOGAF and Business Capability

TOGAF was based on Technical Architecture Framework for Information Management (TAFIM), which was retired by US Department of Defence in 1998 (Langenberg et al., (2004). Since then, it has grown from Version 1.0 published in 1995 to its latest publication as Version 9.2 (The Open Group, 2018). The framework is owned by The Open Group as a formal standard and is developed by its members within the context of the Architecture Forum (Josey, 2009).

TOGAF is promoted as the industry consensus framework for EA and represents best practice to many EA practitioners (Kotusev, 2016). TOGAF is developed collaboratively by over 300 Architecture Forum member companies from some of the world's leading companies (Kotusev, 2016).

Figure 2.4 is the structure of the TOGAF Capability Framework comprising of detailed method as well as a set of tools for the development of EA (The Open Group, 2018).

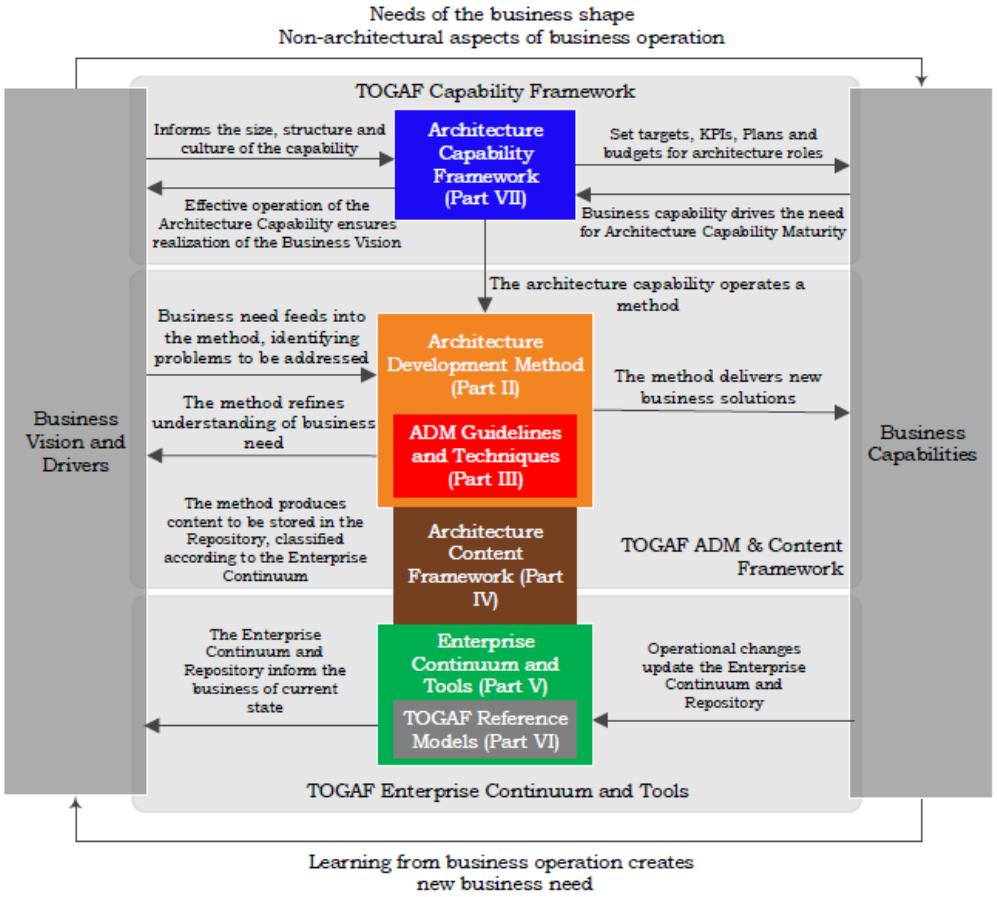


Figure 2.4: TOGAF Capability Framework

Table 2.2 is the summary of the Sections of TOGAF Capability Framework in Figure 2.4.

Table 2.2: Summary of TOGAF Capability Framework

Part	Description
I - Introduction	This part provides a high-level introduction to the key concepts of Enterprise Architecture and in particular the TOGAF approach. It contains the definitions of terms used throughout this standard.
II - Architecture Development Method (ADM)	This part is the core of the TOGAF framework. It describes the TOGAF Architecture Development Method (ADM) – a step-by-step approach to developing an Enterprise Architecture.
III – ADM Guidelines and Techniques	This part contains a collection of guidelines and techniques available for use in applying the TOGAF approach and the TOGAF ADM. Additional guidelines and techniques are available in the TOGAF Library.
IV – Architecture Content Framework	This part describes the TOGAF content, including a structured metamodel for architectural artifacts, the use of re-usable Architecture Building Blocks (ABBs), and an overview of typical architecture deliverables.
V- Enterprise Continuum and Tools	This part discusses appropriate taxonomies and tools to categorise and store the outputs of architecture activity within an enterprise.

Part	Description
VI – Architecture Capability Framework	This part discusses the organisation, processes, skills, roles, and responsibilities required to establish and operate and architecture function within an enterprise.

TOGAF proposes the Architecture Development Method (ADM) which provides a repeatable process for developing architectures. The ADM includes establishing an architecture framework, developing the architecture content, transitioning, and governing the realisation of architectures (The Open Group, 2018). All these activities are carried out within an iterative cycle of continuous architecture definition and realisation that allows organisations to transform their enterprises in a controlled manner in response to business goals and opportunities. Figure 2.5 illustrates the ADM cycle applied to complete the EA development cycle.

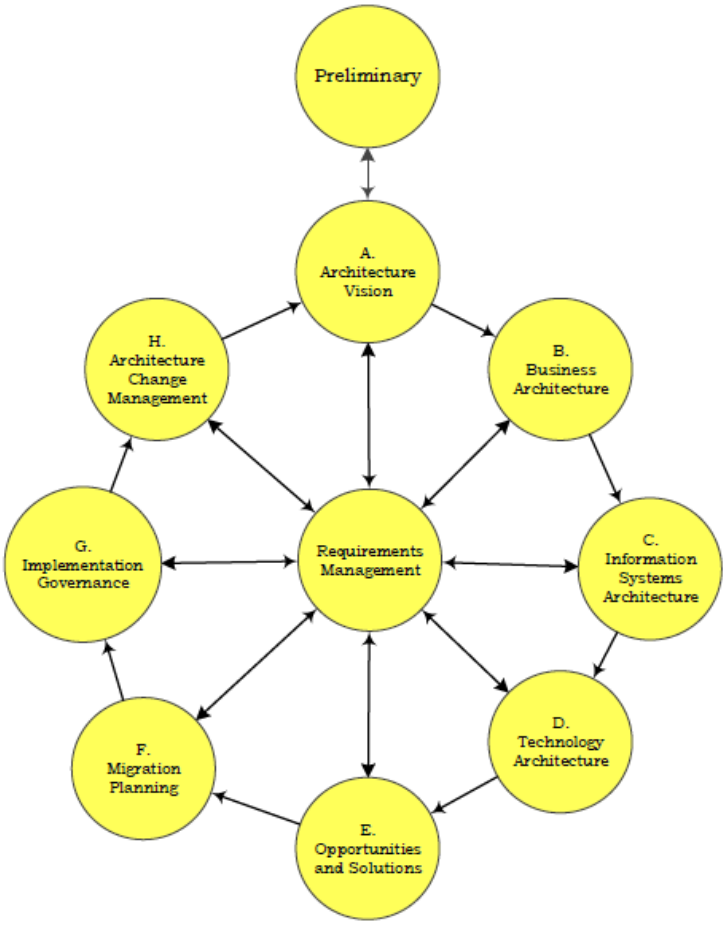


Figure 2.5: ADM Cycle

The ADM consists of several phases that cycles through a range of architecture domains that enable the architect to ensure that a complex set of requirements is adequately addressed. Table 2.3 is the brief overview of the ADM and the activities by Phase.

Table 2.3: ADM PHASES

ADM Phase	Activity
Preliminary	Prepares the organisation for successful TOGAF architecture projects. Undertake the preparation and initiation activities required to create an Architecture Capability, including the customisation of TOGAF, selection of tools, and the definition of Architecture principles.
Requirements Management	Every stage of a TOGAF project is based on and validates business requirements. Requirements are identified, stored and fed into and out of the relevant ADM phases, which dispose of, address, and prioritise requirements.
A: Architecture Vision	Set the scope, constraints, and expectations for TOGAF project. Create the Architecture Vision. Identify stakeholders. Validates the business context and create the State of Architecture Work. Obtain approvals.
B: Business Architecture, C: Information Systems Architecture, D: Technology Architecture	Develop architecture in four domains: 1. Business. 2. Information Systems – Application. 3. Information System – Data. 4. Technology. In each case, develop the Baseline and Target Architecture and analyse gaps.
E: Opportunities and Solutions	Perform initial implementation planning and the identification of delivery vehicles for the building blocks identified in the previous phases. Determine whether an incremental approach is required, and if so identify Transition Architectures.
F: Migration Planning	Develop detailed Implementation and Migration Plan that addresses how to move from the Baseline to the Target Architecture.
G: Implementation Governance	Provide architectural oversight for the implementation. Prepare and issue Architecture Contracts. Ensure that the implementation project conforms to the architecture.
H: Architecture Change Management	Provide continual monitoring and a change management process to ensure that the architecture responds to the needs of the enterprise and maximises the value of the architecture to the business.

Each phase of the ADM is described in terms of its objectives, the approach, the specific steps, inputs to the phase and the outputs of the phase. An interesting Phase of the ADM for the purposes of this study is Phase B: Business Architecture. TOGAF describes Business Architecture as a representation of a holistic, multi-dimensional business views of, capabilities,

end-to-end value delivery, information, and organisational structure, and the relationships among these business views and strategies, products, policies, initiatives, and stakeholders. Business Architecture relates business elements to business goals and elements to other domains. The diagram in Figure 2.3 illustrates TOGAF as responsible for the delivery of business capabilities. The next Section discusses empirical evidence to support the TOGAF claims for delivering business capabilities.

2.4.2 TOGAF Claims on Business Capabilities

As previously discussed in Section 2.4.1 TOGAF has the potential to deliver on business capabilities by following the ADM Guidelines and Techniques recommended by the framework. Business Architecture is prerequisite for architecture in any other domain (Data, Applications, Technology) and is therefore the first architecture activity that needs to be undertaken.

The following are the techniques described in the Business Architecture Phase:

- **Business Capability Mapping**: which identifies, categorises, and decomposes the business capabilities required for the business to have, to deliver value to one or more stakeholders.
- **Organisation Mapping**: which is a representation of the organisational structure of the business (including third-party domains), depicting business units, the decomposition of those units into lower-level functions and organisational relationships (unit-to-unit and mapping to business capabilities, locations, and other attributes).
- **Value Stream Mapping**: is the breaking down of activities that an organisation performs to create the value being exchanged with stakeholders. Value Stream maps illustrate how an organisation delivers value and are in the context of a specific set of stakeholders and leverage business capabilities to create stakeholder value and align to other aspects of the Target Business Architecture.
- **Structured Analysis**: is the identification of the key business functions within the scope of the architecture and maps those functions onto the organisational units within the business.
- **Use-Case Analysis**: breaks down the business-level functions across actors and organisations, allows the actors in a function to be identified and permits a breakdown into services supporting or delivering that functional capability.

- **Process Modelling**: the breakdown of a function or business service through process modelling allows the elements of the process to be identified and permits the identification of lower level business services or functions.

Despite the above guidelines and techniques suggested by TOGAF, EA practitioners still find it challenging to utilise the framework to deliver on business capabilities required by their organisations.

2.5 AWARENESS OF THE PROBLEM

This study addresses the absence of a technique to help EA practitioners develop business capabilities for their firms. There is limited literature about any Business Capability Framework to address this absence except for the work of Brits et al., 2007 and the claims made by TOGAF. In addition, there is a lack of evidence in the scientific literature on the successful application of Brits et al., 2007 framework and that of TOGAF (Offerman, et al., 2007). This may lead to challenges for EA practitioner communities who rely on frameworks such as TOGAF to provide guidance and technique on the planning of capabilities. This led to this research question as stated in Section 1.4.1. namely as: *What are the conceptual elements of a technique that assist with the planning of business capability delivery?*

2.6 SUGGESTED SOLUTION

After the problem awareness is achieved, the solution to the problem can be suggested (Vaishnavi and Kuechler, 2015). The solution suggested is comprised of sequential steps that should be followed to create business capabilities. The solution for the business capability problem is to design and develop a conceptual artefact Business Capability Planning Technique (BCPT), which is based on an aggregated conceptual knowledge of business capability as founded in the literature. BCPT must be easy to use, comprehensive, effective, and useful for its purpose. Any EA practitioner must be able to apply the technique with minimal guidance using documented instructions. Details of the design and development of the BCPT artefact will be discussed in Chapter 4.

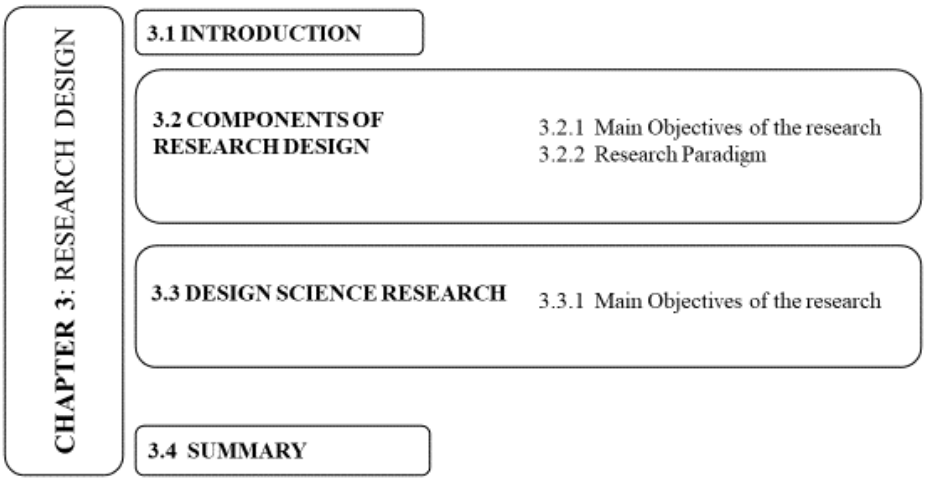
2.7 SUMMARY

The lack of consensus on the definition of business capability is a challenge. The conclusion that can be drawn from this is that, both capability scholars and practitioners do not yet agree on the foundational concepts of business capability. Future research work on the concepts and

definition of business capability is necessary, to progress the field. Chapter 3 that follows is a research strategy that discusses the research project and the research methodology and tools.

CHAPTER 3: RESEARCH DESIGN

Chapter Map



3.1 INTRODUCTION

The purpose of this chapter is to lay out the research design and methodology followed. Mouton (2001) uses a metaphor for research design as an architectural blueprint of a research project and the research methodology as the construction process using methods and tools. The focus of a research design is on the type of study being planned and the nature of result that is aimed at, while the research methodology is chosen to support the outcome (Mouton, 2001).

3.2 COMPONENTS OF RESEARCH DESIGN

This section revisits the research question and objectives of the study, discusses the underlying research paradigm.

3.2.1 Main Objectives of the Research

In Section 1.3 of Chapter 1, the research problem statement that led to this study was discussed in detail. The main research question and the main research objectives were defined as the following:

- **Main Research Question**: *What are the conceptual elements of a technique that assist with the planning of business capability delivery?*
- **Main Research Objective:** Is to answer the main research question by designing, developing and evaluating the BCPT, as a technique that can be used by Enterprise Architects to plan business capabilities for their organisations.
    - **Sub-Research Objective 1**: Explore the origins, background and definition of capability and Business Capability.
    - **Sub-Research Objective 2**: Organise definitional key concepts of business capabilities derived from the key and prominent studies in order to inform the design of the BCPT.

Table 3.1: Main Research Question and Objective Coding

Ref ID 1	Main Research Question	Ref ID 2	Main Research Objective
MRQ	What are the conceptual elements of a technique that assist with the planning of business capability delivery?	MRO	To design, develop and evaluate BCPT artefact as a technique that can be used by Enterprise Architects to plan business capabilities for their organisations.

Having discussed the research question and the objectives, the next section discusses the research paradigm underpinning this study.

3.2.2 Research Paradigm

Research paradigm according to Oates (2006) is described as philosophical views by a group of people about the world they live in and the research they conduct. Wahyuni (2010) regards research paradigm as fundamental beliefs and assumptions which then serves as thinking framework that determines the behaviour of the researcher. A research paradigm according to Scotland (2012) consists of components namely, ontology, epistemology, methodology and methods. Mentz (2014) states that a paradigm includes researcher's epistemological, ontological, and methodological standpoint.

In defining ontology, Scotland (2012) puts it as the study of being, and that ontological assumptions are concerned with what makes up reality. Ontology is the reflection on the nature of reality (Wahyuni, 2010, Gilliland, 2014). Epistemology on the other hand is concerned with the nature and forms of knowledge (Scotland, 2012). Epistemology asks what the nature of the relationship between the inquirer and what can be known (Guba and Lincoln, 1994, Gilliland, 2014).

Different paradigms inherently contain dissimilar ontological and epistemological views, and that is reflected in their methodology (Scotland, 2012). Methodology according to Guba and Lincoln (1994) asks the question of how the researcher can go about finding out whatever they believe can be known. Crotty (1998) defines methodology as a plan of action informed by the choice and use of methods.

Having defined what the research paradigm, epistemology and ontology is, the following are the major distinct paradigms as presented by Oates (2006), Wahyuni (2010), Creswell (2014):

- *Positivism*: uses statistical tests to arrive at generalisations that can be applied across contexts (Wahyuni, 2010). In positivist approach, researchers regard themselves and their objective of study as independent of social and physical reality (Gilliland, 2014). Positivist researchers believe that knowledge through observations and measurements leads to the production of models of how the world works (Oates, 2006).
- *Interpretivism*: uses qualitative data which provides rich descriptions of social constructs (Wahyuni, 2010). The interpretivist's intention is to interpret the meanings others have about the world (Creswell, 2014). Rather than starting with a theory as

positivists do, the researcher inductively develop a theory or a pattern of meaning (Creswell, 2014).

- *Critical Theory*: is also known as transformative world view and it maintains that research needs to be associated with politics and political change agenda to challenge social oppression at what level it occurs (Creswell, 2014). Critical researchers question held values and assumptions and challenge social structures (Gray, 2013). Similarly, as in interpretive studies, critical researchers frequently employ qualitative research methods, such as ethnography and case studies (Adebesin, Kotze and Gelderblom, 2011).
- *Pragmatism*: is concerned with action and change and the interchange between knowledge and action (Goldkuhl, 2012). The focus for a pragmatist is on the research problem, utilising various methods to gain understanding of the reality (Wahyuni, 2010). Here the emphasis is on what works best to address the research problem at hand, using both quantitative and qualitative methods (Wahyuni, 2010, Creswell, 2014).
- *Design Science Research*: originated from the engineering and the science of artificial (Simon, 1996). The DSR focuses on addressing people and organisations problems by designing, utilising, and evaluating the artefact that seeks to transform the current situation to a more desirable one (Kuechler and Vaishnavi, 2015). The design and development process in DSR is based on applied, tested, modified and extended kernel theories through experience, creativity, intuition, and problem-solving capacity of the researcher (Hevner et al., 2004).

This study chose pragmatism as a research paradigm because of its intention to change the current problematic situation of developing business capabilities to a more desirable one. This is meant to be achieved by designing and developing BCPT as a solution to the current situation as mentioned in Chapter 2. The next section provides detail on how the DSR steps are achieved in the study.

3.3 DESIGN SCIENCE RESEARCH

DSR usually involves the creation of an artifact or a design theory as a means to improve the current state of practice and the existing research knowledge (Baskerville, Pries-Heje and

Venable, 2009). The DSR lends itself to the notion of learning through building, given its iterative nature of design (Vaishnavi and Kuechler, 2015).

It utilises the concept of design as a research method with the intention of producing an artefact that addresses a real-world problem (Hevner, March and Park, 2004, Vaishnavi and Kuechler, 2004). The purpose of DSR is a pursuit of improving the human condition by developing knowledge to solve field problems (Denyer, Tranfield, Van Aken, 2008). The DSR artifacts are required to be innovative and serve a purpose to a specified problem (Hevner, et al., 2004). Figure 3.1 is the illustration of DSR steps followed to conduct the study as appropriated from Vaishnavi and Kuechler (2015).

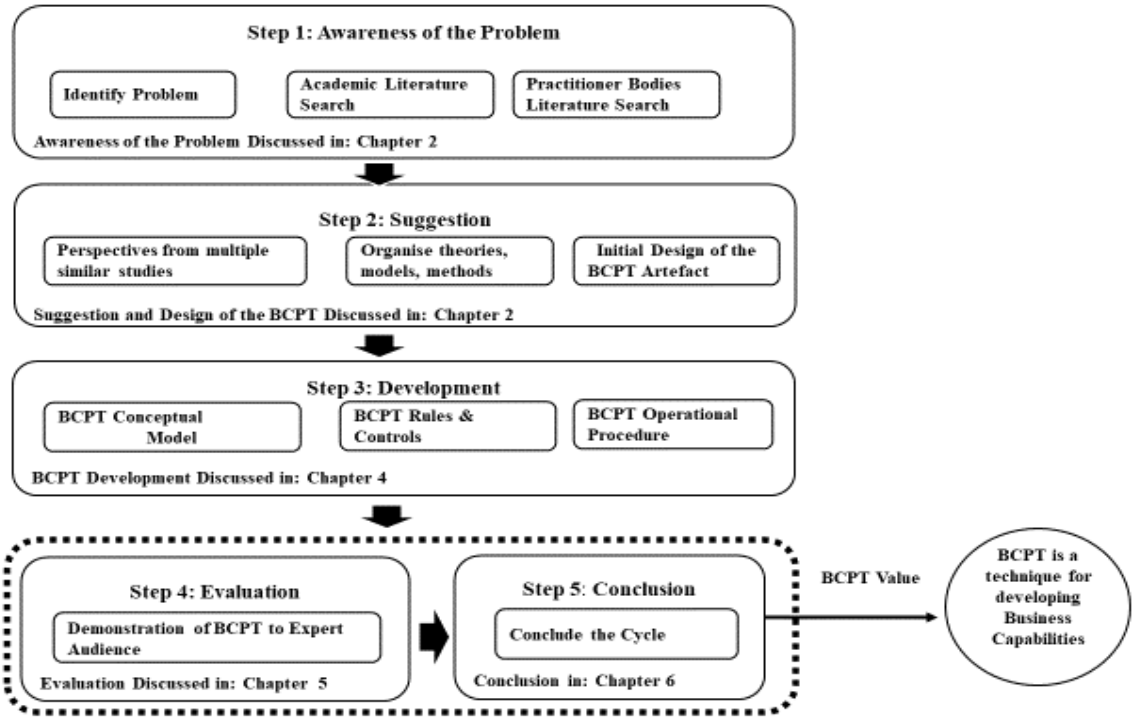


Figure 3.1: DSR Steps (Vaishnavi & Kuechler, 2015)

The DSR process steps follows a sequential approach from Step 1 to Step 5. Each process step produces outputs and consumes resources. The development and evaluation steps produce knowledge according to circumscription process. The usefulness of circumscription to the DSR, is that learning takes place when something does not work according to theory, which allows the researcher to learn by making. According to Vaishnavi and Kuechler (2015) the DSR activities are describe in five steps as follows:

- **Awareness of Problem**. This step involves the awareness and recognition of the problem to be solved. The problem was defined as the lack of a comprehensive guide or method that assists EA practitioners to develop business capabilities for their firms. The output of this step is the proposal for a new solution that needs to be developed. Chapter 2 provided details of this step through literature review and the identification of the problem.
- **Suggestion**. This step follows immediately after the proposal and suggests a possible design by making use of appropriate existing knowledge. The suggestion is essentially creative in nature and is based on the researcher's envision of the possible solution to address the problem. The proposed solution is based on an aggregated definition of business capabilities and creativity, intuition, and problem-solving capacity of the researcher.
- **Development**. The artefact is developed in this step and a range of theories, models and frameworks are utilised to inform the development of the solution. The building blocks of the solution are defined and the sequential steps to be followed in using the solution.
- **Evaluation**. This step evaluates the solution for its ability to solve the problem. Any deviation from the expected performance is noted, explained as lessons learnt, which contributes to the improvement of the solution. The instruments used to evaluate the solution was a demonstration using Microsoft PowerPoint. Data gathering was achieved through structured interviews and cell-phone recordings. Section 3.3.1 of this chapter provides more detailed approach.
- **Conclusion.** This step could just be the end of the research cycle or just the culmination of the specific research effort. Although there could be deviations in the behaviour of the artefact from the revised hypothetical predictions, the results are deemed good enough. The results are then written up and the knowledge gained in the effort is categorised either as firm facts that have been learned and can be repeatably invoked. Loose ends that defy explanations serves as subject of further research.

During the execution of the DSR steps, lessons are learnt that lead to further awareness of the problem and constitute a contribution to the body of knowledge (Vaishnavi and Kuechler, 2015). The following Section explains the detail of the methods and procedures used to collect data and to answer the research questions of this study.

3.3.1 Data Collection Methods and Procedures

Data collection is an integral part of any research effort (Welman, Kruger and Mitchel, 2005). The choice of specific data collection method is as important as deciding on a research design strategy when conducting research (Maxwell, 2005). The goal of data collection operation must be established for data collection to be successful (Maxwell, 2005) goes on to say. The aim for collecting data in this study, is to determine the effectiveness and utility of the BCPT artefact.

The DSR which is often classified as a problem-solving strategy, starts by setting clear goals of what aspects of the artefact are to be evaluated. The insistence in DSR approach is for discovering by personally hearing, observing, and living through the existence of the study participants (Hevner and Chatterjee, 2010).

Figure 3.2 illustrates the BCPT data collection approach, which was used to prepare, collect, analyse data, and draw cross-feedback conclusions from the BCPT evaluation.

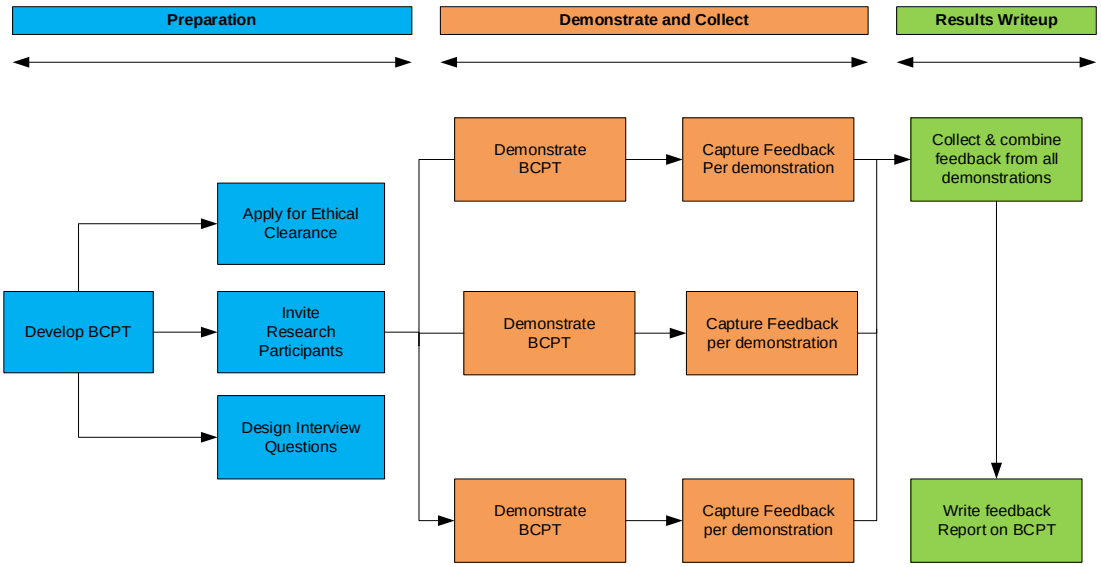


Figure 3.2: BCPT Data Collection Approach

Each single BCPT demonstration as depicted in the BCPT data collection approach diagram represents EA practitioners who participated in the evaluation of the BCPT for its effectiveness and utility. The BCPT data collection approach focused on the following aspects to ensure a structured data collection strategy:

- **Preparation**

  This phase is focused on the data collection strategy, where the interview questions to evaluate the developed BCPT are designed. Ethical clearance was requested as researchers are required to act in a responsible manner and be accountable to society when conducting research (Mouton, 2001). Research participants were identified, chosen, and invited to participate in the study. Participation was voluntarily based on participants knowledge and experience as EA and business architecture practitioners in their respective organisations. Consent to participate in the study was obtained from the participants prior to their involvement in the study. The participants understood that they could withdraw from the study at any time, should they wish to. The participants responses were treated in a confidential manner and their anonymity was ensured. **Demonstrate and Collect**: The demonstration of the BCPT was to show that the artefact is the solution to the problem that is identified in Chapter 2. The demonstration was followed by the structured interview aimed at obtaining feedback from the research participants. In this study in the participants were South African EA and business architecture practitioners who are responsible for the development of business capabilities in their respective firms. Due to the field being new and practitioners being limited in numbers, this limited the data collection, nevertheless, the feedback was sufficient for the objectives of the study. The selection of participants was based on:

    - The availability of the EA practitioners at the time and their willingness to participate in the study.
    - That the BCPT artefact being evaluated must speak to them.
    - The EA practitioner's level of expertise and seniority at the place where they practice.

  The research participants were requested to participate through email. In addition, contacts network platforms such as LinkedIn were also used to source participants for the study. Venues to present the BCPT were at the participants convenience.

- **Results Writeup**

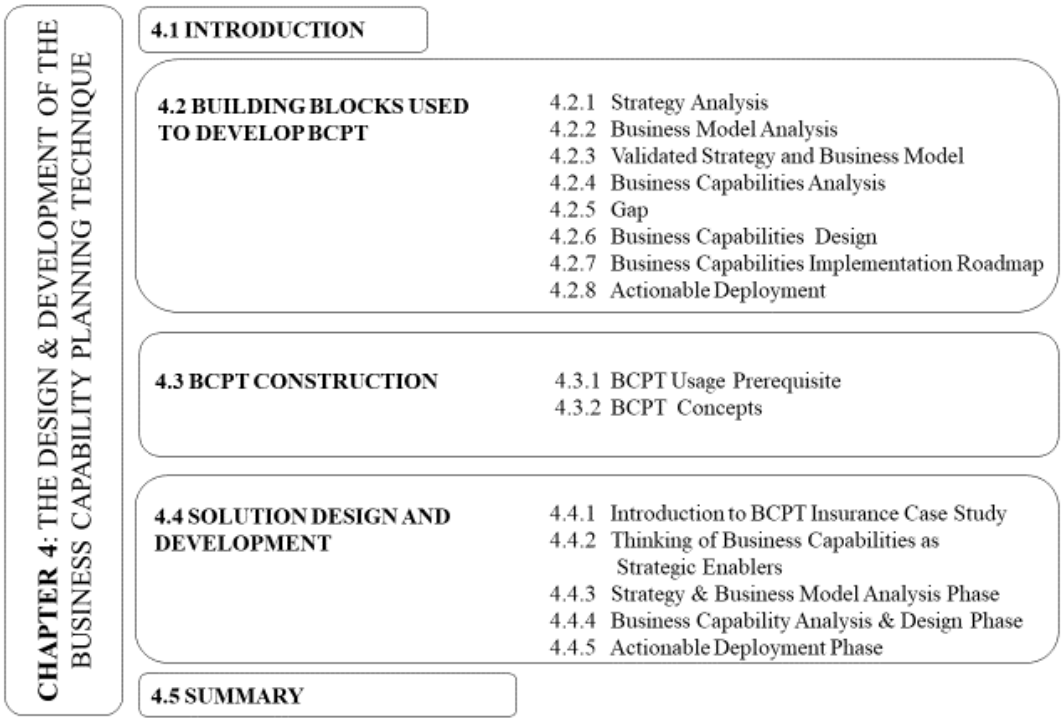
  The feedback from the various demonstrations of the BCPT was collected and combined to prepare for the final report. Although there were features of the BCPT that deviated from the predictions, the results were considered good enough (Vaishanavi and Kuechler, 2015). This part is regarded as the end of the research effort.

3.4 SUMMARY

This chapter explained the research design and methodology. The research questions were mapped to the research objectives. This study used DSR as the main methodology, supplemented by qualitative data collection technique in the DSR evaluation step. The validity and reliability of the study is detailed in Chapter 5 where the BCPT artifact is evaluated.

Chapter 4: The Design and Development of the Business Capability Planning Technique

Chapter Map



4.1 INTRODUCTION

The objective of this chapter is to discuss the design of the BCPT artifact as a solution to the problem that was identified in Chapter 2. Since the purpose of the BCPT is that of an approach that can be used by EA practitioners to develop business capabilities for their firms, it is therefore appropriate to provide details about the components that makes up BCPT. This chapter also describes the design and development of the BCPT phase.

The first step that led to the need to develop a solution was motivated by the problem awareness. This step is essential to start with, as it informs and provides the context upon which the solution is needed and developed. The problem was defined as the lack of a comprehensive guide that assists EA practitioners to plan business capabilities for their firms. In addition, this problem is made worse by the limited understanding of business capability as a concept, let alone its successful delivery. This led to the formulation of the main research questions and objectives in this study as follows:

- **Main Research Question**: *What are the conceptual elements of a technique that assist with the planning of business capability delivery?*
- **Main Research Objective:** Is to answer the main research question by developing, designing and evaluating the BCPT, as a technique that can be used by Enterprise Architects to plan business capabilities for their organisations.
    - **Sub-Research Objective 1**: Explore the origins, background and definition of capability and business capability.
    - **Sub-Research Objective 2**: Organise definitional key concepts of business capabilities derived from the key and prominent studies in order to inform the design of the BCPT.

The BCPT is a technique that has been designed to assist EA practitioners to plan business capabilities for their firms. In order to design BCPT, the concept of business capability needed to be understood and the literature review provided context with that regard. However, there is no agreed upon definition of business capability in the literature, and therefore an aggregated definition of business capability is proposed.

The aggregated definition combines common themes from various business capability definitions found in the literature and the themes are explained in Chapter 2. The aggregated business capability definition proposed is stated *as an **alignment** of business processes, people*

(organisation, knowledge and skills, culture), technology solutions, and assets (facilities, funds, resources) to respond to ***strategic*** *challenges and* ***opportunities****.*

Section 4.2 that follows provide an overview about the building blocks that are utilised to develop BCPT artefact.

4.2 BUILDING BLOCKS USED TO DEVELOP BCPT

BCPT consist of three phases namely Strategy and Business Model Analysis Phase, Business Capabilities Analysis and Design Phase and Business Capabilities Phase. Each phase consists of logical building blocks necessary to complete the phase. The building blocks within the phases that are used to develop the BCPT are sourced from various theories, frameworks, and models. Figure 4.1 is the BCPT artefact whose building blocks will be discussed in Section 4.2.1.

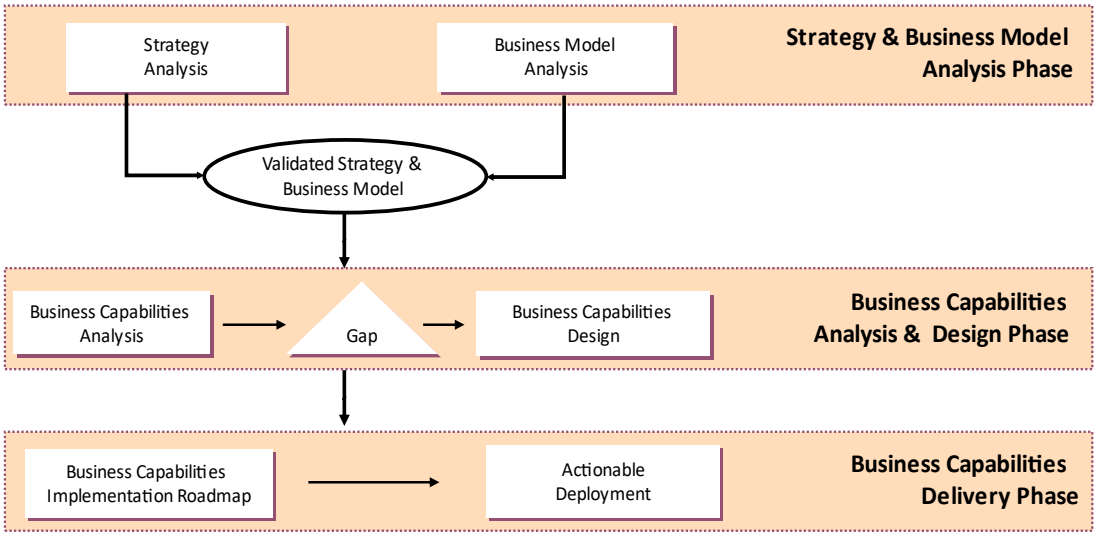


Figure 4.1: BCPT Artefact

4.2.1 Strategy Analysis

This is the first building block of the BCPT within the Strategy and Business Model Analysis Phase, which is derived from Grant (2010) basic framework for strategy analysis. Grant (2010) framework comprises of two elements namely, the firm and the industry environment. Figure 4.2 is the illustration of the framework as derived from Grant (2010).

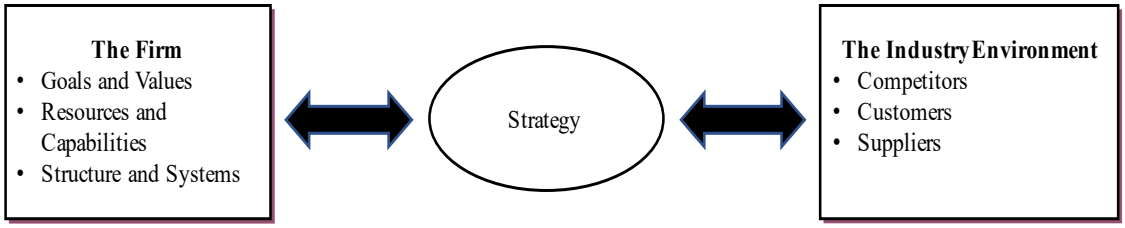


Figure 4.2: Basic Framework for Strategy Analysis (Grant, 2010)

The diagram in figure 4.2 is defined as follows:

- **The Firm**
  - that is comprised of goals and values that are simple, consistent, and long-term.
  - Resources and Capabilities which are to be appraised objectively.
  - Structure and systems necessary for strategy effective implementation.
- **The Industry Environment**
  - that is defined by the firm's relationship with customers, competitors, and suppliers.
- **The Strategy**
  - Is the link between the firm and its industry environment.
  - the strategy role is to determine how the firm will deploy its resources within its environment to accomplish its long-term goals and how to organise itself to implement the strategy.

Differentiating between the external and internal environment of the firm is common to most approaches to strategy analysis. (Grant, 2010). The mostly widely used strategy analysis is the SWOT analysis framework, which stands for Strength, Weaknesses, Opportunities and Threats. Strength and weaknesses relate to the internal environment of the firm and Opportunities and Threats relate to the external environment of the firm.

Given the widespread use of the SWOT by practitioners and scholars alike, it expected that several research studies focused on it as a tool for strategic analysis (Helms and Nixon, 2010). Strategy is about providing the firm with a vision and the design that achieves a fit between its internal strengths and weaknesses and external threats and opportunities (Osterwalder,2004).

4.2.2 Business Model Analysis

This is the second building block of the BCPT within the Strategy and Business Model Analysis Phase. Each time a business is established, it utilises a certain business model that describes the design of the value creation, delivery, and the capture mechanism it employs. The core of the business model is in defining how the business delivers value to customers, entices customers to pay for value, and convert those payments to profit (Teece, 2010). Business Model Canvas is a tool that is useful for describing how the firm captures, creates, and delivers value (Osterwalder, 2009). Using Business Model Canvas to analyse the firm's business model helps to determine whether the strategy of the firm is or will be viable and valuable, Osterwalder (2009) goes on to argue.

4.2.3 Validated Strategy and Business Model

The third building block of the BCPT is the validated strategy and business model. This building block is the resultant output of strategy and business model analysis in the Strategy and Business Model Analysis Phase. The entire purpose of creating a strategy is to get commitment across the organisation to a different future than the one you would arrive at if you continued the current path. Validating a strategy is also about ensuring that there is a coordinated and integrated set of choices selected (Martin and Leafly, 2013). The following are the selected choices:

- a winning aspiration.
- where to play.
- how to win.
- core capabilities.
- management systems.

An organisation should also ensure that its business strategy is well described, communicated, and understood before investing on capabilities to achieve the strategy.

4.2.4 Business Capabilities Analysis

The fourth building block of the BCPT within the Business Capabilities Analysis and Design Phase is Business Capabilities Analysis. Once the organisation has selected the strategic choices of where to play and how to win, the attention should then be turned to the business capabilities that are required to deliver on those choices (Martin and Leafly, 2013). The performance level of the business capabilities essential to achieve the firm's goal must be analysed. Capability Maturity Model (CMM) as defined by Software Engineering Institute may be applied to analyse the performance of a business capability (Papazoglou, 2014). In addition, a business capability map of the firm can be used to illustrate a portfolio of business capabilities both the current and the future states (TOGAF, 2012). This business capability mapping helps the organisation to compare what it needs to do with what it is doing at the present. Areas of improvement are revealed by performing business capabilities analysis (Papazoglou, 2014).

4.2.5 Gap

The fifth building block of the BCPT within the Business Capabilities Analysis and Design Phase is the Gap. The Gap highlights a shortfall between the as-is and the to-be business capabilities. The gaps are the business capabilities that have been deliberately omitted, accidentally left out or not yet defined (TOGAF, 2012). Gaps are derived from the business capabilities analysis by assessing the business capability maps and looking for places where rectifications are needed for meeting business goals. The gap points out the need for adding business capabilities, improving the existing ones and retiring the redundant ones. The gaps are consolidated and grouped to assess potential solutions and drive the creation of projects (TOGAF,2012).

4.2.6 Business Capabilities Design

The sixth building block of the BCPT within the Business Capabilities and Design Phase is Business Capability Design. This building block of BCPT is based on the RBV of the Firm Theory by Wernerfelt (1984). RBV states that firms are made up of tangible and intangible resources, namely skills, knowledge and experience, technology, data and information, location and processes. These resources when combined create capabilities that sustain competitive advantage of the firm. In addition, this building block of BCPT applies concepts from the TOGAF (2012) standard for mapping and designing business capabilities. Designing business capabilities is not a minor undertaking, and therefore it is important that an

incremental and iterative approach is adopted (TOGAF, 2012). This iterative approach should be based on what the business considers as priority.

4.2.7 Business Capabilities Implementation Roadmap

The seventh building block of the BCPT within the Business Capabilities Delivery is Business Capabilities Implementation Roadmap. The implementation roadmap is required to implement the business capabilities. This building block is extracted from the TOGAF (2012) standard and is named architecture roadmap in the standard. The purpose of the roadmap is to list the individual work packages that will implement the desired business capabilities and arrange timelines that show progression from current state to the desired state. The roadmap is incrementally implemented throughout Phase E and F of the ADM Phases as shown in Table 2.4 and is informed by the output developed in Phases B, C and D.

4.2.8 Actionable Deployment

The eighth building block of the BCPT within the Business Capabilities Delivery is the Actionable Deployment. It is the final step in the BCPT and monitors the implementation of business capabilities to ensure alignment across the firm (The Open Group, 2011). This BCPT building block is derived from the TOGAF (2012) standard and is illustrated as Phase G of the ADM Phases in Table 2.4. Now that the desired business capabilities are identified, the firm needs to determine ways, the skills and resources required to implement the business capabilities. Reviews and management of the implementation process for any risks is also necessary to ensure successful implementation.

4.3. BCPT Construction

This section provides a comprehensive overview of the BCPT, the prerequisite for usage and its basic concepts.

4.3.1 BCPT Usage Prerequisite

The intended user of the BCPT is assumed to be knowledgeable and competent in the following skills:

- Strategy Formulation and Analysis
- Business Modelling
- Business Capability Modelling & Analysis

The above skills are a prerequisite for anyone to understand and follow the method comprehensively. In addition, the BCPT assumes the intended user is knowledgeable about the concepts mentioned in it, and therefore does not provide any extensive explanations about its concepts. BCPT also assumes that the intended user has acquired a certain level of proficiency in modelling skills in one or more of the modelling tools such as Microsoft Visio, ArchiMate, Enterprise Architect or Microsoft PowerPoint.

4.3.2 BCPT Basic Concepts

The BCPT basic concepts are designed as phases and in each phase has steps to be followed for it to be completed. Table 4.1 provides an overview of the BCPT basic concepts and the description.

Table 4.1: BCPT Basic Concepts

Concept	Description
Strategy & Business Model Analysis Phase	This part of the BCPT is the validation and analysis of the organisational business strategy. It clarifies strategic outcomes and the logic by which the firm creates value to its stakeholders and customers. The critical input to this phase is the following: • Business Strategy Document • Business Context • Drivers for Change • Mission and Objectives
Business Capability Analysis & Design Phase	This phase focuses on the capabilities the business needs to achieve its strategic outcomes. It starts after the strategy and the business model has been validated. The input to this phase is the following: • Validated strategy and business model. • People (Organisation, knowledge, skills, culture). • Process (Activities, Sequence, Input, Output, Constraints). • Technology (Data, Applications, Infrastructure) • Assets (Facilities and Resources).
Business Capabilities Delivery Phase	After the strategic capabilities have been analysed and the gaps identified, this phase plans for the implementation of the gaps. It starts with the target capabilities identified as gaps, that are critical to the delivery of the strategic outcomes. The input to this phase is the following: • Target Capabilities • Business Opportunities • Solution and Implementation Approach

4.4 SOLUTION DESIGN AND DEVELOPMENT

This section demonstrates how the BCPT is applied in practice, using the case of BCPT Insurance. The BCPT Insurance is a fictitious example which is used to demonstrate the use of BCPT to address issues related to the development of business capability by EA professionals.

4.4.1 Introduction to BCPT Insurance Case Study

The BCPT Insurance is a financial service provider, which provides a range of insurance products and solutions to fulfil personal, commercial, and corporate needs of their customers. It partners with brokers to deliver personal advice to protect client's valued assets and help attain their financial goals and aspirations.

In the recent study conducted by BCPT Insurance marketing, the company noticed that the internet led to an increased competition in this market, particularly the youth market. In developing their strategy BCPT Insurance identified the following strategic initiatives for the next three years:

- Use technology to distribute products and services, thereby augmenting the current broker dependence on distribution channels.
- Create a unique client service point of contact through which all claims can be registered by customers and brokers using digital channels. This will ensure that customer claims can be processed in less than 24 hours.
- Transform claims back-office processes to improve customer experience, reduce risk and increase productivity.

Enterprise Architecture was mandated to take the lead in the planning and designing of BCPT Insurance Business Capabilities to realise this strategy.

4.4.2 Thinking of Business Capabilities as Strategy Enablers

The EA team quickly noticed that for this strategy to be realised, business capabilities needed to play a critical role. Moreover, no matter how well developed or not the business capabilities are, they still needed to be re-evaluated for their strategic alignment. It is possible that the organisation may not be aware of the business capabilities that they already have, which have occurred without specific planning. Therefore, the new strategy needed to be supported by the requisite business model and business capabilities that are responsible for the achievement of strategic outcomes.

BCPT was applied to examine business capabilities of the organisation and identify those that hold strategic importance to the business. In addition, BCPT helped to analyse and detect business capabilities to be developed, retired, upgraded, and downgraded. The organisation was therefore logically guided in the investment decisions it took to achieve the required business outcomes.

The following sections demonstrate the application of the BCPT to solve the challenges of BCPT Insurance case by following the BCPT Phases as laid out in **Table 4.1.**

4.4.3 Strategy Analysis and Business Model Analysis Phase

The business strategy clarifies the important strategic business outcomes and how they are to be achieved. Business strategy is also a reason that one organisation is more successful than another, mainly because of how the strategic choices are implemented in business models.
In defining the business model, Osterwalder (2009) says it is a conceptualisation of the logic of how an organisation earns money. In addition, business model functions as a conceptual link forming a triangle between strategy, business organisation and information technology.

Therefore, choosing a particular business model means choosing a particular way to compete, a particular logic of the firm, a particular way to operate and to create value for the firm's stakeholders (Casadesus-Masanell and Ricart, 2009). Given the above discussion, the challenge occurs when the strategy is not defined, well-documented, understood, and clearly communicated across the organisation. Defining the organisation strategy is a complex task and is beyond the BCPT objectives. For the purpose of this study, we assume that the strategy

is already in place, and what is required is to implement the required business capabilities to support the strategy.

The two steps in this phase namely, Strategy Analysis and Business Model Analysis are intertwined. Business model is derived from the strategy and the strategy is influenced by the business model. Both steps in this phase determine what business capabilities are required to achieve the business outcomes. Figure 4.3 are the steps followed in the analysis of strategy and business model that we begin with.

Figure 4.3: Steps of Strategy and Business Model Analysis Phase

4.4.3.1 Step A: Begin with Strategy Analysis

Before the development of business capabilities begins, the strategy of the organisation must be well described, communicated, and understood. At the end of this analysis, the organisation should be confident that its strategy adequately addresses the forces that drive the business change. The following are the attributes of **Step A:**

- **Objectives:** To obtain clarity on the business strategy and the desired business outcomes.
  - **Input to the Step**
    - Clear and well-defined strategy documentation of the firm
  - **Activities Required**
    - Review strategy to gain direction of the organisation.
    - Conduct Management Interviews for verification and ensure there is a common understanding of the strategy.
    - Analyse Competitive market (Optional).
  - **Tools that can be Applied**
    - SWOT Analysis.
    - Balance Scorecard to map the Strategy (where Balance Scorecard does exist – review it).
  - **Output of the Step**
    - Validated Strategy that details the following:

- Organisation's ability to execute on this strategy.
- Customer Needs.
- Gaps and deficiencies with the strategy (if any).

4.4.3.2 Step B: Business Model Analysis

In this step the business model is analysed, using a Business Model Canvas as created by Osterwalder and Pigneur (2009). The starting point is a shared understanding of what the business model is. It is critical that this concept is made simple, relevant, and intuitively understandable, while not oversimplifying the complexities of how the organisation functions. Figure 4.4 is the illustration of the Business Model Canvas showing the nine building blocks that make up the BCPT Insurance business model.

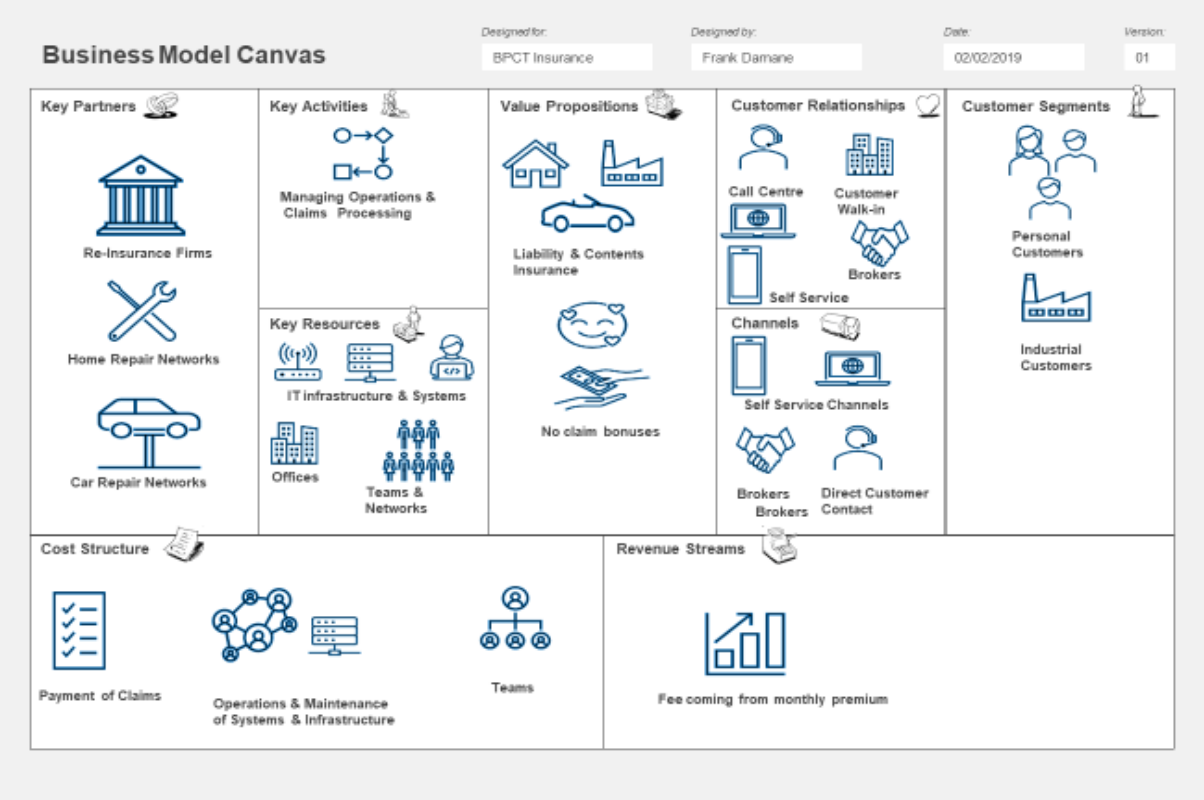


Figure 4.4: BCPT Insurance Business Model

In the example above, BCPT Insurance business model is comprised of the nine building blocks that must be analysed to ensure that they enable strategic objectives of the organisation. The following are the building blocks: -

- **Customer Segments**: are the existing and prospective BCPT customers, divided into groups based on common characteristics, to enable BCPT Insurance to market to each group effectively and appropriately. BCPT Insurance has two types of customers namely, personal and industrial whom they provide insurance services to. The key analysis questions for this block of the business model are:
    - For whom are we creating value?
    - Who are our most important customers?
- **Customer Relationships**: are established and maintained with each customer segment using brokers, call-centres, customer walk-in centres and some form of underdeveloped self-service. The key analysis questions for this block are:
    - What type of relationships do each of our primary customer segments expect us to build and maintain with them?
    - Which ones have we established?
    - How are they integrated with the rest of our business model?
    - How costly are they?
- **Channels**: services are delivered to customers mainly through brokers, direct customer contact and customer walk-in centres. The key analysis questions for this block are:
    - Through which channels do our primary customer segments want to be reached?
    - How are we reaching them now?
    - How are our channels integrated?
    - Which channels work best?
    - Which channels are most cost-efficient?
    - How are we integrating them with customer routines?
- **Value Proposition**: solves the customer problems and satisfies the customer needs. BCPT Insurance provides liability and content insurance to customers in the event of loss. The key analysis questions for this block are:
    - What value do we deliver to our customers?
    - Which customer needs are we satisfying?
    - Which customer problems are we helping to solve?
    - What bundles of products and services are we offering to each customer segment?

- **Revenue Streams**: BCPT Insurance earns money for the value they successfully offer to customers. In their case, it is fee from the monthly premiums they collect. The key analysis questions for this block are:
    - For what value are our customers willing to pay?
    - For what value do they currently pay?
    - How are they currently paying?
    - What method would they prefer to use for paying?
    - How much does each revenue stream contribute to overall revenues?
- **Key Activities**: are the most important actions a company must take to operate successfully. For BCPT Insurance, it is clients claims processing, solving customer enquiries, managing company operations, etc. The key analysis questions for this block are:
    - What significant activities do our value propositions require?
    - Which activities are the primary drivers of customer relationship?
    - Where does our distribution channel provide value-add?
    - What are the revenue streams for each channel?
- **Key Resources**: are important assets required to make the organisation do what it does. Key resources can be physical, financial, intellectual, and human. They can be owned or leased by the company or acquired from key partners. For BCPT the resources are information technology infrastructure, systems and software, physical offices, human resources, and network of teams. The key analysis questions for this block are:
    - What significant resources do our value propositions requires?
    - Which significant resources do our distribution channels require?
    - What significant resources do our customer relationships require?
    - Which significant resources do our revenue streams require?
- **Key Partnerships**: companies form partnerships to optimise their business models, reduce risk and acquire resources. In the case of BCPT Insurance, the partners are re-insurance firms, home repair and car repair networks. The key analysis questions for this block are:
    - Who are our significant partners?
    - Who are our significant suppliers?
    - What critical activities do our partners perform?
    - What important resources are we acquiring from our suppliers?

- Cost Structure: describes all the cost incurred to operate the business model. The costs can be calculated after defining key resources, key activities, and key partnership. In the case of BCPT Insurance the costs are payment of claims, operations and maintenance of systems and infrastructure and staff remuneration. The key analysis questions for this block are:
    - Which costs are most critical for our business structure?
    - What primary resources are the most expensive?
    - What primary activities are the most expensive?

By evaluating the business model, BCPT Insurance can explore scenarios about their business and customers. Scenarios can help the BCPT Insurance address issues in their strategy, such as which channels are most appropriate, which relationship will be best to establish, and which problem solutions customers would be most willing to pay for.

The following are the attributes of **Step B:**

- **Objectives:** To explore viable business models for the strategy.
    - **Input to the Step.**
        - SWOT Analysis Results.
        - Strategy Document.
    - **Activities Required.**
        - Analyse drivers.
        - Facilitate workshops.
        - Sketch out your business model canvas.
        - Out-of-the box thinking.
        - Select scenarios.
        - Communicate scenarios with stakeholders.
    - **Output of the Step.**
        - A set of scenarios with supporting business models.
        - Validated Strategy and Business Model.

4.4.4 Business Capability Analysis and Design Phase

This phase is about leveraging business capabilities that drive BCPT Insurance strategic outcomes. Often the challenge lies in the identification of those critical business capabilities that supports the execution of business strategy. Figure 4.5 are the Steps of Business

Capabilities Analysis and Design Phase, that we begin with in the analysis and design of business capabilities.

Figure 4.5: Steps in Business Capabilities Analysis and Design Phase

4.4.4.1 Step C: Analyse and Design Business Capabilities

In this phase the focus is on business capabilities the business has and the business capabilities it needs to develop to close the gap. The phase uses the validated strategy and the business model produced at the end of Strategy and Business Model Analysis Phase as input to this phase. Other input that is considered is human skills, current processes, technology, and assets as factors to be considered in the design of the future business capability.

The modelling of the BCPT Insurance business capability map both the current state and the future state is performed. Business capability maturity gap assessment is conducted by analysing and comparing what is required by the business and what it has at present. Areas of improvement are identified and high-lighted using colour coding as heat map for transformation opportunities. The following are the attributes of **Step C:**

- **Objectives:** To create the BCPT Insurance Foundation Business Capability.
    - **Input to the Step.**
        - Set of scenarios.
        - Strategy Document.
        - Business Model.
        - Enterprise Information.
        - Practice and industry knowledge.
    - **Activities Required.**
        - Facilitate workshops.
        - Collaboration with business stakeholders.
        - Distinguish strategic business capabilities.
        - Select the best combination of business capabilities to enable strategic objectives.

- High-light individual business capabilities using heat mapping.
- Provide costs for upgrade and development of strategic business capabilities.

- **Output of the Step.**
  - Level 1 business capability model.
  - Business Capabilities Heat Maps.
  - A set of strategic business capabilities to be prioritised.

4.4.4.1.1 Business Capability Structuring

Business Capability can be turned into two logical structures to communicate the right amount of detail to different stakeholder groups. Creating these structures will allow stakeholders to focus on those capabilities that are most relevant to their sphere of influence, this is called stratification and levelling (TOGAF, 2016).

4.4.4.1.2 Level 1 Capability Stratification

Stratification is the process of classifying, grouping and aligning business capabilities within (usually three) categories, tiers or layers. The purpose of stratification is to break down the model to be more easily understood.

Each stratification tier provides a focal point for different stakeholder group, allowing them to organise their analysis and subsequent planning activities in more structured ways. For example, the first tier is often aimed at the executive function's area of control, which is business capabilities related to strategy and direction setting. The second tier typically represents the core customer-facing elements of the business, while the las tier groups of business capabilities are essential for the business function that are more behind the scenes playing a supporting role. Figure 4.6 is the depiction of the BCPT Insurance Level 1 Capability Classification.

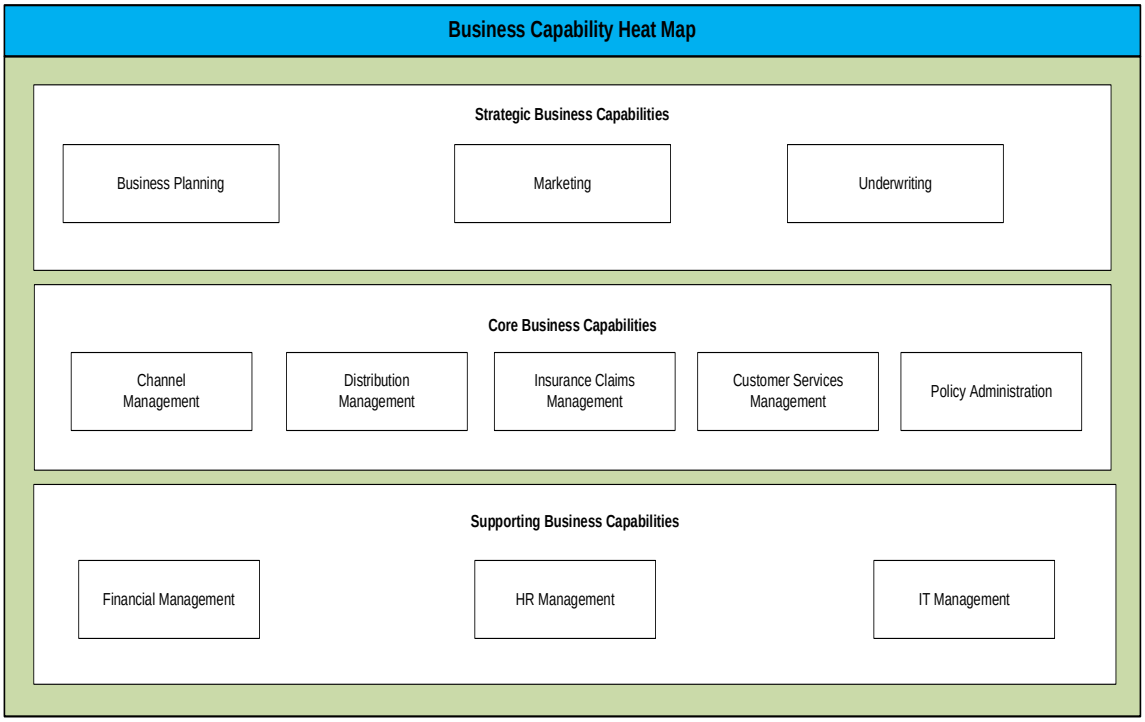


Figure 4.6: Level 1 Business Capability Classification

4.4.4.1.3 Levelling

Levelling is the process of decomposing each top-level (Level 1) business capability into lower levels to communicate more detail, at a level appropriate to the audience or stakeholder group concerned. As an example, senior executives may only be interested in Level 1 of the business capability model. Architects and planners expect to see a much degree of granularity.

The number of levels of decomposition is limited only by the degree necessary to communicate the information required by the intended audience or to enable the business to make informed decisions about capability gaps. Between three and six business capability levels decomposition is common in practice.

Figure 4.7 is the depiction of Level 1 business capability namely, Insurance Claims Management. In this example Insurance Claims Management is the Level 1 business capability. There is one Level 1 Insurance Claims Management, which in turn is decomposed into Level 2 and business capabilities.

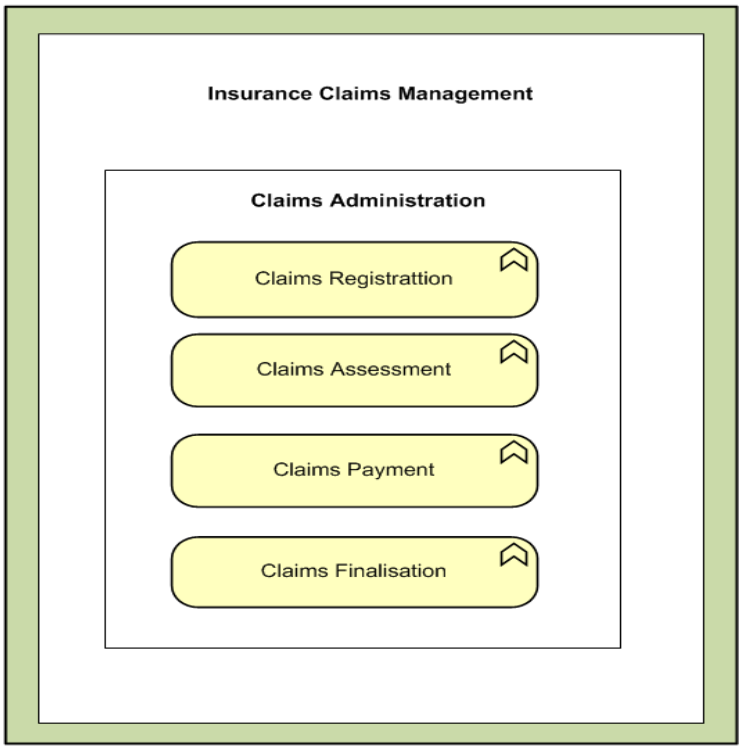


Figure 4.7: Level 1 Capability with Level 2 and 3 Capabilities.

4.4.4.1.4 Level 2 Business Capability: Claims Administration

Level 2 namely, Claims Administration has level 3 business capabilities which are,

- Claims Registration.
- Claims Assessment.
- Claims Payment.
- Claims Finalisation.

Level 3 business capabilities describe what an organisation does, and can capture what it is able to do, meaning its abilities. In addition, level 3 business capabilities describe more than just what an organisation does, but also expresses what to do when the need arises. Level 3 business capabilities are sometimes referred to as business functions, and they the reason business capabilities have strategic relevance in an organisation. They are closer to implementation and express the intention of higher-level business capabilities, namely Level 1 and 2. Table 4.3 is the illustration of how Level 3 capabilities are operationalised to achieve the business objective.

Table 4.2: Level 3 Capabilities Operationalisation

Name	Claims Administration
Description	The ability to handle claims efficiently and ensure payment of a valid claim to the customer.
Element	Roles. o User. o Claims Handler. o Stakeholders. o Customer. o Claims Assessor. o Claims Manager. Processes. o Register Claim. o Assess Claim. o Approve or Reject Claim. o Pay Claim. o Notify Customer. o Finalise Claim. Information. o Customer Details. o Customer Policy Information. o Claim Request. o Claims Handbook. o Claims Supporting Documents. o Assessment reports. o Customer claims history. Tools. o Claims Management System. o Customer Notification System. o Financial System. o Assessment System.
Operational Metric	o Total Claims Received. o Total Claims Processed. o Total Claims Assessed. o Total Claims Paid. o Total Claims Rejected.

4.4.4.1.5 Best Practices for Defining Business Capabilities

Firstly, the exercise of defining business capabilities needs to be collective and consider input from business stakeholders to ensure buy-in and support. Secondly, it is the role of the business stakeholders from the process champions right up the executive level to review the business capabilities and understand what they mean in terms of their respective business units. The following are the suggested best practices for defining business capabilities:

- Business capabilities are not to be defined using technical terms or not understandable concepts.
- Use the business capability once and should not be repeated anywhere in the organisation.

- Although at times they may be dependent upon another, define them as autonomous.
- Use nouns and not verbs when naming business capabilities.
- Business Capability model should be simple.
- It should a team effort that engages business early on in the process.

4.4.4.1.6 Mapping Value Streams to Business Capabilities

All business capabilities should link to other organisational resources and activities, such as value streams so that they are connected to strategy and activities performed in the organisation. A value stream is an end-to-end collection of activities that creates a result for a customer. A key principle of value stream is that value is always defined from the perspective of the customer, end-user of the product, and service (The Open Group, 2022). Value streams may be defined at an enterprise level (illustrated in Figure 4.6) or at a business unit level. In whatever way, the value stream is depicted, it should be a set of complete visual representation of all the value streams that indicate an organisation's primary set of business activities. It is a collection of the multiple ways in which the enterprise creates value for its stakeholders.

Figure 4.6 illustrates the mapping of BCPT Insurance value streams to the Level 1 business capabilities. This is to illustrate how the mapping is performed for the gap analysis. Mapping value streams is a quick and easy way of capturing the entire business, as the value streams represent all the work the business needs to perform to deliver to its customers. According to The Open Group (2017), other benefits of value streams mapping include:

- Helping business leaders imagine and prioritise the impact of strategic plans.
- View business capabilities through the lenses of a value stream to provide a value-based, customer centric context for business analysis and planning.
- Value streams provide a framework for more effective business requirements analysis, case management, and solution design.
- By focusing on how business value is achieved and for whom, a fully articulated value stream map can lead to more effective business and operating models.

Figure 4.8 illustrates the mapping of BCPT Insurance value streams to the Level 1 business capabilities for analysis purposes.

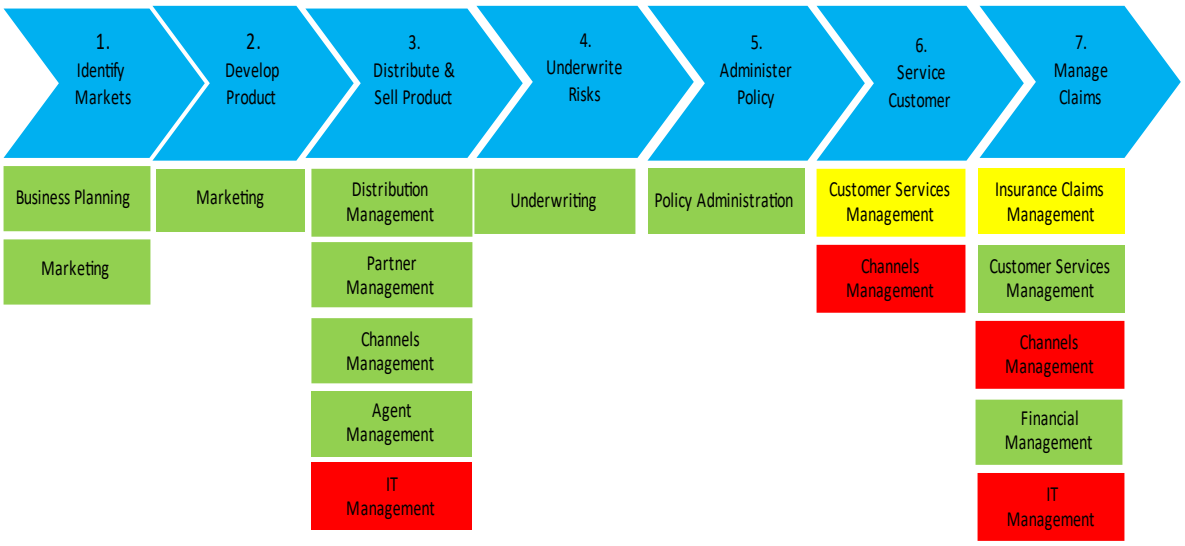


Figure 4.8: Value Stream to Business Capability Mapping

Referring to the business of BCPT Insurance case, the mapping in figure 4.6, provides the business with the critical information as follows:

- Recognition of core business capabilities that are critical to the attainment of strategic objectives but are partially developed. These are business capabilities that are colour-coded in yellow.
- Supporting capabilities that are important to enable the delivery of strategic objectives but are not fully developed. These are business capabilities that are colour-coded in red.

4.4.4.1.7 Heat Mapping of Business Capabilities

After mapping the business capability to value streams, the business capabilities are placed in a map that reflects the BCPT Insurance overall business. This is to give a high-level view of what the company needs to be doing to attain its strategic goals. Heat mapping is then used to:

- Identify the level of maturity for each business capability.
- Effectiveness of the business capability.
- Performance of the business capability.
- Value or cost contribution of each business capability to the business.

Again, different colours can be applied to highlight a certain level of business capabilities maturity. For an example:

- **Green Colour**: shows a business capability that is the desired level of maturity.

- **Yellow Colour**: shows a business capability that is one level away from the desired of maturity.
- **Red Colour**: shows a business capability that is two or more levels away from the desired level of maturity.

- **Other Colour**: could indicate other status levels e.g., a business capability that does not exist today but is desired in the future.

Figure 4.9 is the illustration of a heat map example for BCPT Insurance company, signifying business capabilities when viewed from a capability maturity perspective.

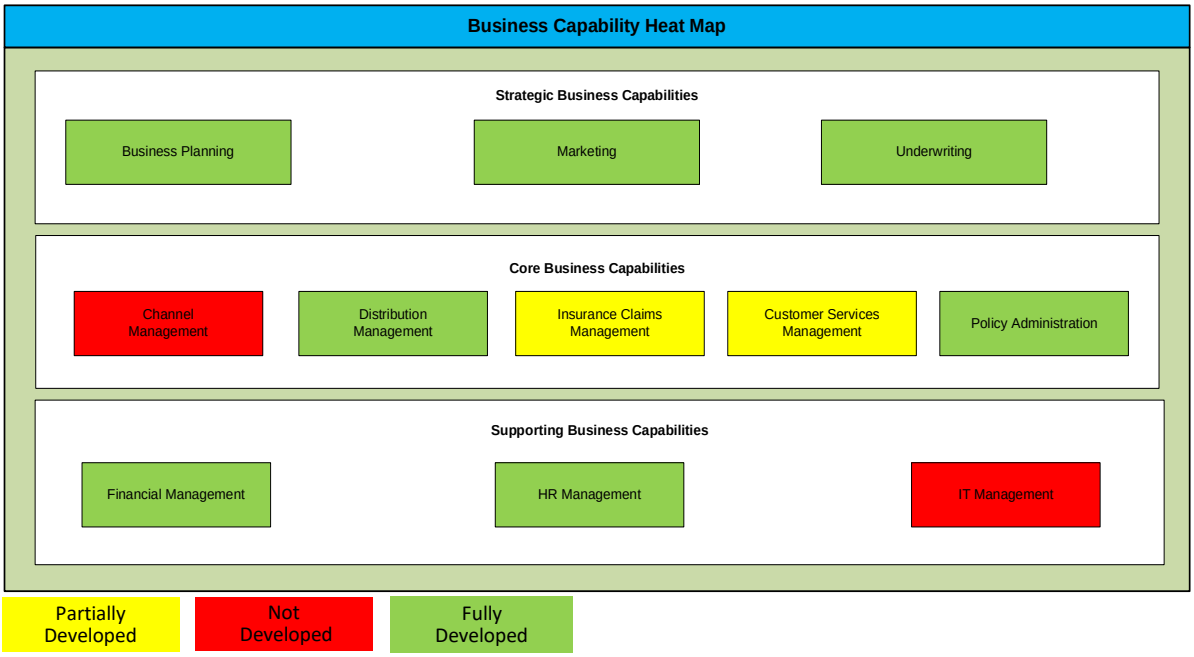


Figure 4.9: BCPT Insurance Business Capability Heat map

Briefly, when looking at Figure 4.9 above, we can see IT Management and Channel Management need immediate attention, whilst Channel Management, Insurance Claims Management and Customer Management are partly developed. Business leaders can now use this information and ensure that the investments and project initiatives are prioritised and funded at an appropriate level to bring those capabilities in red and yellow up to the desired level of maturity.

4.4.4.1.8 Mapping Business Capability to Other Organisational Resources

As per the aggregated definition in Section 4.2.2, business capability requires a combination of other organisational resources, such as process, people, and technology to function fully. Also, here the process of heat mapping and comparing which business capabilities require attention for the realisation of the business strategy. The business capabilities that are chosen must be strategic and collectively provide for the required investment returns. Figure 4.10 is the illustration of business capabilities mapped to other resources.

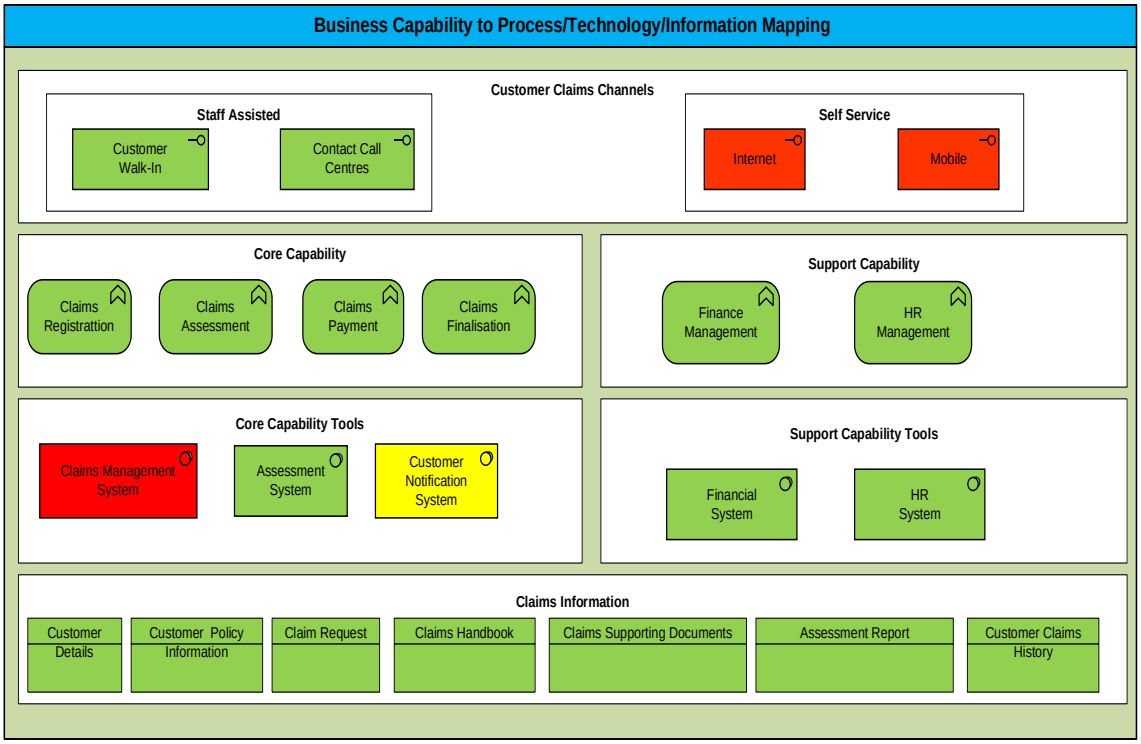


Figure 4.10: Business Capability Mapping to Other Resources

Mapping business capabilities to other resources increases understanding that allows business leaders to view the business capabilities with all its implementation components, namely:

- Supporting functions and human skills.
- The processes that support the business capabilities.
- Information Technology or systems that support business capabilities.
- The information needs required by the business capability.
- Operational metrics that measure the performance of the business capability.

The mapping of business capabilities to other resources should help answer the following questions:

- Which are our strongest and weakest business capabilities?
- Which business capabilities provide strategic differentiation?
- Which business capabilities can be leveraged in new markets?
- Where should we invest our resources?
- Where can information technology add more strategic value to our business?
- Where can information technology be used to lower cost?
- Where do we have multiple processes and information technologies supporting a single business capability?
- Which business capabilities are costing too much to support?
- Which business capabilities should we outsource?
- Where do we need more employee education?

4.4.5 Business Capabilities Delivery Phase

After BCPT Insurance has identified the strategic target business capabilities, the next step it had to do, was to define the implementation approach and plans. Figure 4.11 is the illustration of the BCPT phase concerned with the actual deployment of strategic business capabilities.

Figure 4.11: Business Capabilities Delivery Phase

BCPT Phase 3 attributes are as follows:

- **Objectives:** To implement the identified target business capabilities.
    - **Input to the Phase.**
        - AS-IS Business Capabilities.
        - TO-BE Business Capabilities.
        - Business Capabilities Gap Analysis.
        - Opportunities to transform the business.
    - **Activities Required.**
        - Use the TOGAF ADM to:
            - Determine the business constraints for implementation.
            - Determine the transition state of the business during the transformation.

- Determine the target state of the business during the transformation.
- Confirm the readiness and risk for business transformation.
- Formulate implementation and migration plan.
- Identify major work packages and roadmap.

- **Output of the Phase.**
  - Architected business capabilities that enable strategic objectives of BCPT Insurance.

Figure 4.12 is the TOGAF ADM used to deliver on the strategic business capabilities to transform BCPT Insurance.

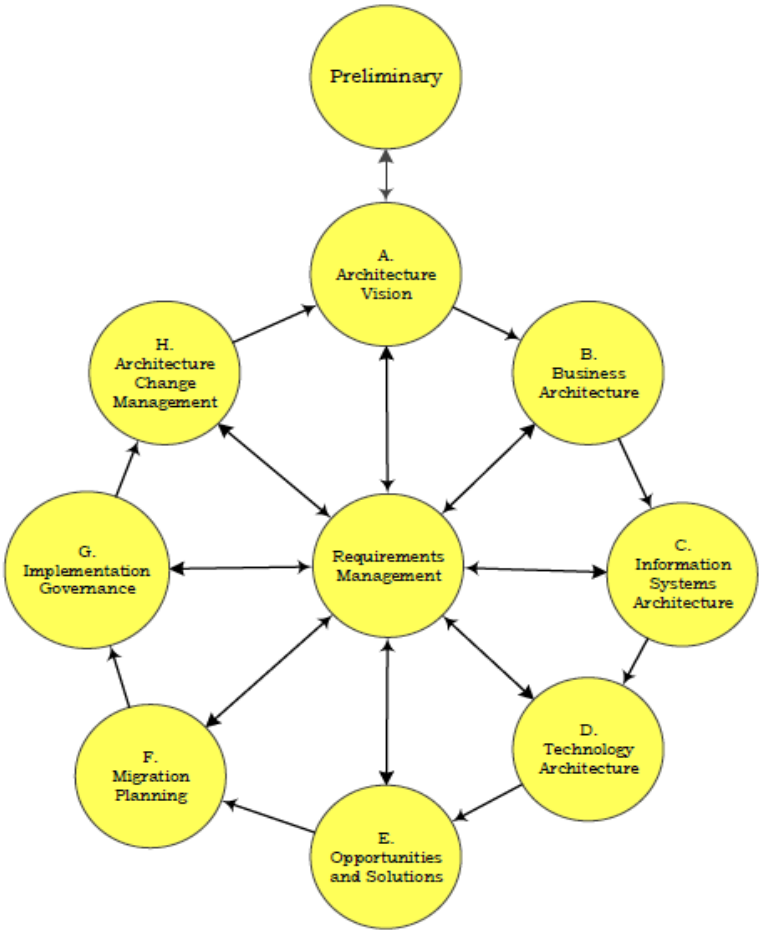


Figure 4.12: TOGAF ADM

Each phase of the TOGAF ADM is described in terms of its objectives, the specific steps, inputs and output. The TOGAF ADM phases that this study focuses on, for the purposes of implementing the business capabilities are Phases E and F.

4.4.5.1 ADM Phase E: Opportunities and Solutions

This phase in the TOGAF ADM is concerned with the determination of work packages required to be developed and delivered for the identified strategic business capabilities. In this ADM phase the gaps identified during the business capabilities analysis phases are reviewed and consolidated across the business functions. Business transformation readiness and its risk is confirmed. Implementation and migration strategy are formulated, and major work packages identified. Transition state is defined together with architecture requirement specifications and roadmaps.

4.4.5.2 ADM Phase F: Migration Planning

This phase addresses the migration planning, which details how the business will move from the current architecture to the desired architecture. The following are the steps to be followed:

- Confirm the management framework and interactions required for the implementation and migration.
- Assign a business value to each work package.
- Estimate resources requirements and project timelines.
- Prioritise migration projects and conduct cost/benefit assessment and risk validation.
- Confirm roadmap and update architecture definition document.
- Complete the implementation and migration plan.

In this phase the desired business capabilities are fully understood, and the organisation needs now needs to establish ways of implementing them. This will require skills and resources that experienced and capable of delivering these business capabilities successfully. During the implementation, the organisation must conduct ongoing process review to manage any risks that may arise as the result of the business transformation.

4.5 SUMMARY

The purpose of this chapter was to address the two research objectives. Firstly, it organised key definitional concepts that will inform the design criteria for the BCPT. Secondly, it was to design and develop BCPT as a solution based on the design criteria, founded upon an aggregated definition of a business capability.

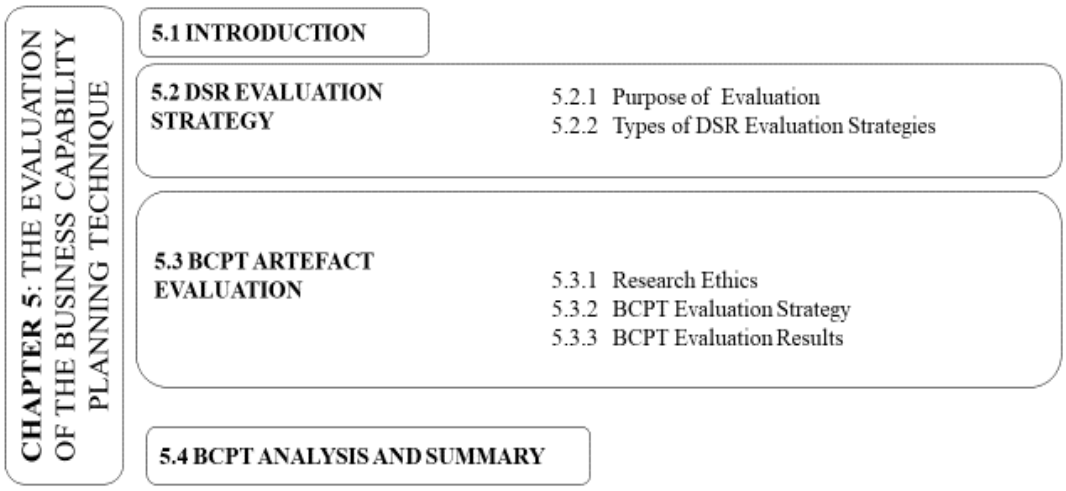
4.5.1 Implications on Research Questions and Objectives

The main research question of this study was formulated as *What are the conceptual elements of a technique that assist with the planning of business capability delivery*? To answer this question the following research objectives were formulated as follows:

- Organise an aggregated definition made of components that defines what constitutes a business capability, which will assist in the understanding of what a business capability is.
- Based on the understanding of the business capability definition presented, a technique called BCPT will then be designed and developed and evaluated for effectiveness and usefulness.

The main research question has been answered in Chapter 2, and the results are presented in Chapter 4 through the design and development of the BCPT method, and its application using the BCPT Insurance case, to test for effectiveness and utility. Chapter 5 will provide details on the evaluation of the BCPT method and the results of the evaluation.

Chapter 5: The Evaluation of the Business Capability Planning Technique



5.1 INTRODUCTION

The objective of this chapter is to provide details of the BCPT method or artefact evaluation and the results thereof. Firstly, the purpose of evaluation is introduced and the types of DSR evaluation strategies are discussed. Secondly, flowing from the types of DSR strategies explained, the appropriate strategy for the BCPT is selected and justified. The goals for the BCPT evaluation, the method of evaluation and results are explained. The chapter is summarised by explaining whether the intentions of the evaluation were achieved or not.

5.2 DSR EVALUATION STRATEGY

The approach to a DSR evaluation project differs based on when to evaluate, for what purposes and how, which then leads to different evaluation strategies (Venable, Pries-Heje and Baskerville, 2016). This study also follows a certain strategy of evaluation based on what is to be evaluated and how.

5.2.1 Purpose of Evaluation

According to (Venable et al., 2016), there are various purposes of evaluation in DSR. One of the key purposes of evaluation in DSR is to establish how well a designed artefact achieves its main purpose or utility. In addition, the artefact can be evaluated for functionality, completeness, consistency, accuracy, performance, reliability, usability and fit for organisation purposes (Hevner, March, Park and Ram, 2004). It is therefore the purpose of this study to evaluate BCPT method for its effectiveness and utility in its environment.

5.2.2 Types of DSR Evaluation Strategies

The identified evaluation strategies in DSR include the Quick and Simple strategy, the Human Risk and Effectiveness evaluation strategy, the Technical Risk and Efficacy evaluation strategy and the Purely technical Artefact strategy (Venable et al., 2016). Table 5.1 depicts the circumstances upon which a relevant DSR evaluation strategy is selected (Venable et al., 2016).

Table 5.1 Circumstances for Selecting a relevant DSR Evaluation Strategy

DSR Evaluation Strategy	Circumstance Selection Criteria
Quick & Simple	If small and simple construction of design, with low social and technical risk and uncertainty.
Human Risk & Effectiveness	• If the major design risk is social or user oriented and/or it is relatively cheap to evaluate with real users in their real context and/or • If a critical goal of the evaluation is to rigorously establish that the utility / benefit will continue in real situations and over the long run.
Technical Risk & Efficacy	• If the major design is technically oriented and or • If it is prohibitively expensive to evaluate with real users and real systems in the real setting and /or • If a critical goal of the evaluation is to rigorously establish that the utility / benefit is due to the artefact, not something else.
Purely Technical Artefact	If the artefact is purely technical (no social aspects) or artefact use will be well in future and not today.

5.3 BCPT ARTEFACT EVALUATION

The aim of the BCPT artefact evaluation is to determine its utility and effectiveness in solving the problem it was designed to solve, as detailed in Chapter 2. The problem that the BCPT is designed to solve, *is the lack of a comprehensive guide or method to assist EA practitioners in the planning of business capabilities of their firms.*

5.3.1 Research Ethics

Research ethics according to Mouton (2001) involves what is permissible and acceptable when research is conducted. In research that involves people and design, the researcher should consider human and perceptions of the research and researcher, the research participants and the people that will be using the design (Oates, 2006). The researcher has the right to search for truth, but not at the expense of the rights of other individuals in the society (Mouton, 2001).

The research participants in this study were provided with information regarding the research, which allowed them to participate voluntarily in this study. In addition, their anonymity and confidentiality were ensured.

5.3.2 BCPT Evaluation Strategy

The chosen evaluation strategy for the BCPT artefact is Human Risk & Effectiveness. This strategy is selected for the purposes of examining the artefact with real users in a real context and to establish whether the benefit of the artefact will continue in real situations over the long run. The approach to the evaluation was structured as follows:

Step 1: *Contact Research Participants and arrange demonstration venue.*

- Research participants were practicing Enterprise Architects and Business Architects.
- An example of a business problem case study to be solved using the BCPT artefact was presented to the research participants.
- A venue to present the BCPT artefact was arranged at the participant's offices or a venue of their choice.

Step 2: *Demonstrate the BCPT artefact in the form of a presentation.*

- The presentation was delivered formally, and the participants were allowed to ask questions during the demonstration. This allowed ease of conversation and allow participants to engage with the artefact and its flow.
- Ongoing conversation and feedback on the BCPT were recorded using a smartphone recorder.

Step 3: *BCPT Feedback Questionnaire*

- The post-presentation questionnaire was to capture the participant's feedback and insight on the overall BCPT artefact.
- Capture the link between the business case study problem presented and the relevance of BCPT in solving the problem.
- Capture the BCPT artefact contribution in addressing the research problem statement, making the business capability elements understandable.

Table 5.2 are the set of open-ended questions that were aimed at capturing the participant's feedback on the effectiveness and utility of the BCPT presented.

Table 5.2 Evaluation Interview Questions

Evaluation Criteria	Evaluation Questions
Part I: Ascertain Business Capability Planning Methods used by the participants in their organisation.	• Do you perform business capability planning activities in your organisation? o If Yes, which approach/method/framework do you use? • And please describe your role in the development of Business Capability Planning in your organisation. • For what purposes would you perform Business Capability Planning in your organisation?

Part II: Ascertain Participants understanding of Business Capability Planning Definitions.	• Would you suggest any changes to the presented definitions in the BCPT artefact for the below concepts?
	  o Business Strategy Analysis.
	  o Business Modelling.
	  o Business Model Canvas.
	  o Business Capability.
	  o Business Capability Heat Map.
	  o Value Chain.
	  o Resources.

Part III: Ascertain Participants feedback on the method provided by the BCPT artefact to plan and design business capabilities.	• Do you think the steps of the presented Business Capability Planning Technique are complete?
	  o If Yes, can you please expand on that?
	  o If No, can you please expand on that?
	• Were the overall parts of the Business Capability Planning Technique clear to you?
	  o If No, which parts of the Business Capability Planning Technique were unclear?
	• Do you think the Business Capability Technique has any value to your practice as the Enterprise Architect?
	  o If Yes, can you please expand on that?
	  o If No, can you please expand on that?
	• Do you think the Business Capability Planning Technique helps you in the planning and designing of Business Capabilities?

Evaluation Criteria	Evaluation Questions
	○ If Yes, can you please expand on that? ○ If No, can you please expand on that?
Part IV: Ascertain Participants feedback and opinions on the utility and notations of the BCPT artefact.	• Having been introduced to the Business Capability Planning Technique, do you think the operating procedure in the Business Capability Planning Technique is easy to understand? ○ If Yes, can you please expand on that? ○ If No, can you please expand on that? • Having been introduced to the Business Capability Planning Technique, do you think the steps in the Business Capability Planning Technique are easy to learn? ○ If Yes, can you please expand on that? ○ If No, can you please expand on that? • Having been introduced to the Business Capability Planning Technique, do you think the steps of the Business Capability Technique are easy to use? ○ If No, can you please expand on that? • Having been introduced to the Business Capability Planning Technique, do you think the graphics in the Business Capability Planning Technique are understandable? ○ If Yes, can please expand on that? ○ If No, can you please expand on that? • Having been introduced to the Business Capability Planning Technique, do you think the graphics in the Business Capability Planning Technique are presented in the useful manner? ○ If Yes, please expand on that? ○ If No, please expand on that?

Evaluation Criteria	Evaluation Questions

	• Is there anything that you would like to change in the Business Capability Planning Technique?
	  o If Yes, why?
	  o If No, why?

The research participants were selected from South African practitioners who had experience in EA, strategy development and business capability planning.

5.3.3 BCPT Evaluation Results

There were seven interviews conducted out of five BCPT demonstration sessions. Two of the participants individually requested that the BCPT presentation be forwarded to each through email, so that each could review the BCPT artefact at their convenient time. When the review was completed, they each provided their feedback through the interview questionnaires provided to them. Two of the seven participants had ten years of experience in EA field while six had three to ten years of experience. The participants collectively represented 48 years of working experience in the EA field, as consultants and company employed practitioners. Some of the participants had business, solution and integration architecture titles but were also involve in the business capability development in their organisations in one way or another. The following is the summary of the BCPT Evaluation results from the demonstration sessions conducted.

5.3.3.1 Results on Business Capability Definition

In terms of the business capability definition presented in the BCPT artefact, there were no changes suggested by the participants. This indicated either an agreement on the presented definition or lack of understanding of the conceptual elements of business capability.

5.3.3.2 Results on the Effectiveness of the BCPT

The effectiveness feedback was intended to assess whether the task carried out using the BCPT artefact achieved the specific goals with accuracy and completeness. Table 5.3 are the comments of the participants in response to the questions in **Part III**.

Table 5.3: BCPT Effectiveness

Question	Response
Do you think the steps of the presented Business Capability Planning Technique are complete?	Four participants thought the steps were complete and that they illustrated end-to-end problem-solving technique. In addition, the steps detail how the Business Capabilities can be developed. Two participants thought there is no mapping of business model to business capability. A step or a link is maybe required to map the two steps. The one participant suggested inclusion of measurement to ensure the designed business capabilities have had a positive impact on the business strategy.
Were the overall parts of the Business Capability Technique clear to you?	All seven participants reported that the overall steps of the Business Capability Technique were clear.
Do you think the Business Capability Planning Technique has any value to your practice as the Enterprise Architect?	All seven participants reported that the BCPT makes development of Business Capabilities a lot easier and straight-forward. BCPT also helps in the planning of Business Capabilities. One of the participants reported that the BCPT will help their employees with the steps to follow when engaging clients. BCPT is reported as a good guide. BCPT is reported to have absolute value, as current EA models have not unpacked in-depth on the design, implementation, and evaluation of capability models across the organisation. BCPT is also reported as a good starting point.
Do you think the Business Capability Planning Technique helps you in the planning and designing of Business Capabilities?	Participants reported that the BCPT helps as a guide for anyone who wants to develop business capabilities. BCPT is effective and can be used as best practice for planning business capabilities. BCPT is reported as logical and understandable. BCPT is useful and provides the roadmap on how to design business capabilities.

5.3.3.4 Results on the Utility and Notations of the BCPT

The utility feedback was intended to assess whether the procedures and steps in the BCPT were easy to understand and easy to learn. The graphical notation feedback was aimed at determining

whether, they were understandable and presented in a useful manner. Table 5.4 are the comments of the participants in response to the questions in **Part IV**.

Table 5.4: BCPT Utility and Notations

Question	Response
Having been introduced to the BCPT technique, do you think the operating procedure in the BCPT is easy to understand?	Six of the participants all agreed that the operating procedure in the BCPT were easy to understand. Their responses included comments such as easy to follow, flowing nicely and is a good guide, clearly stated, and can easily resonate with. One of the participants felt that more could have been done in terms of colour coding and the meaning of those colour coding in the diagrams. In addition, the one participant felt that the diagrams and notations will be understandable to an experience modeller, especially those familiar with the tool used (ArchiMate) but may need require prior knowledge to a novice modeller in ArchiMate.
Having been introduced to the BCPT, do you think the steps in the BCPT are easy to learn?	All seven participants stated that the steps are easy to learn. Their responses included comments such as easily explained and not complex, even my Business Analysts without architecture training can follow this easily, the steps don't take too much mental effort to learn, easy to follow and logical.
Having been introduced to the BCPT, do you think the steps of the BCPT are easy to use?	Six of the participants reported that the steps in the BCPT are easy to use. One of the participants stated that the BCPT steps would complement TOGAF ADM Phase B, C & D if they were aligned to it.
Having been introduced to the BCPT, do you think the graphics in the BCPT are understandable?	All seven participants reported that the graphics are understandable to them. Their responses included comments such as makes sense and easy to understand, uses ArchiMate that I am familiar with, graphics modelled in a manner that is useful, graphics are understandable because I'm an experienced EA practitioner, any experienced EA would understand, and they are designed like any EA meta model.
Having been introduced to the BCPT, do you think the	All seven participants reported that the graphics were presented in the useful manner. One of the participants stated that as an experienced EA practitioner he understands why the BCPT is

Question	Response
graphics in the BCPT are presented in the useful manner	important especially on how the part. In addition, he reported that most of the EA models do mention business capabilities but do not clearly provide guidance on to actually implement and define the details of business capabilities.

5.3.3.5 Results on Further Comments

Further comments feedback was intended to allow the respondents to comment on any other aspect of the BCPT artefact that the interview questionnaire did not cover. The question asked was: *Is there anything that you would like to change in the Business Capability Planning Technique*? Five of the seven participants reported that there is nothing that they would change in the BCPT artefact. Their responses included comments such as "I think this is a good tool and I would like to adopt it for my consulting as a tool to engage customers". Other reported comments were, "it is a great tool for helping Architects, especially Business Architects". Other comments were, "perfectly done and would recommend it to other Architects". Two respondents reported that there was a missing step between the business model analysis and planning of the business capability.

5.4 BCPT ANALYSIS AND SUMMARY

This section provides analysis and summarises the evaluation of the BCPT, which was conducted by demonstrating the artefact to the research participants. In all cases, the demonstration and the subsequent structured interviews were conducted individually with each participant. The demonstrations were conducted at the participant's venue of choice. The following analyses the aspects of the demonstration feedback:

- Based on the responses received from the interviews, it appeared that the definition of business capability was not a central point that the participants were interested in. This was the case with all the definitions that were presented to them. The reason might be that the experienced EA practitioners had already been exposed to these definitions through EA frameworks that are used as reference points. The interest was more on the BCPT as a solution than engaging on the conceptual elements of business capability which were used as building block to develop the BCPT tool.
- BCPT as a tool was well received and reported as having value to the EA practice as it provides a step-by-step logical guide to the development of business capabilities. This is a gap that is not covered by the existing EA frameworks. It also appeared that

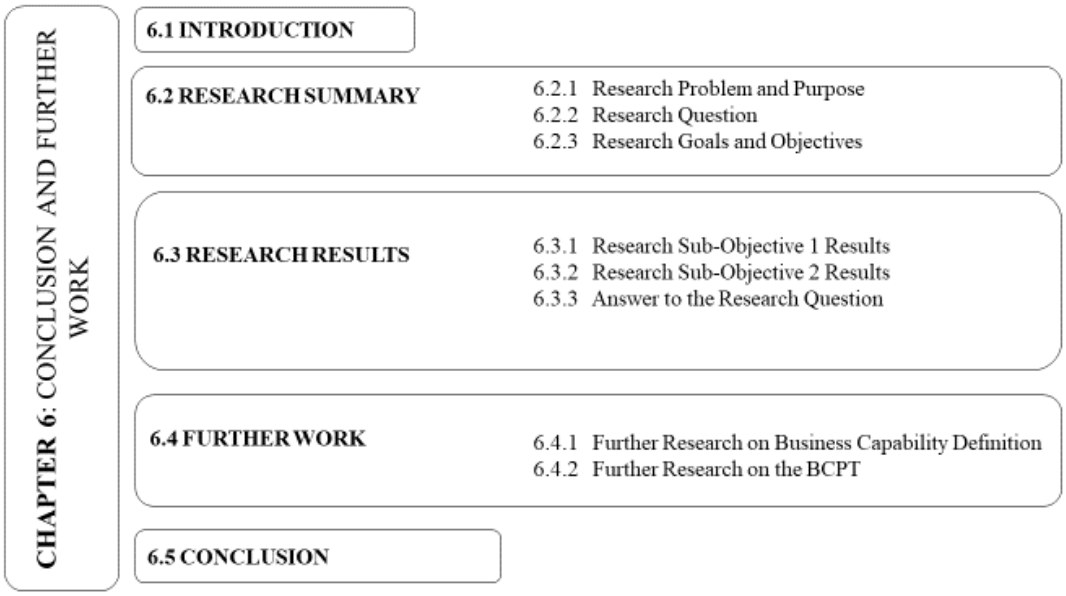
the BCPT can only add value to experienced EA practitioners who are already exposed to certain EA concepts and terminologies.

In summary the aim of the evaluation was to determine whether the BCPT solves the problem it was designed to solve. The criteria used for the evaluation was focusing the following research objectives:

- Determine a conceptual understanding of what a business capability is.
- Determine the effectiveness of BCPT as a tool to assist EA practitioners to plan and design business capabilities for their firms.

Based on the analysis of the evaluation results, BCPT has met its objectives of solving the challenges faced by EA practitioners when required to develop business capabilities. In addition, business capability as a concept was not decided, thus leaving future work to be conducted for its definition.

Chapter 6: Conclusion and Further Work



6.1 INTRODUCTION

This chapter concludes the study and provides details for further work. The research is summarised, and the research problem, questions, goals, and objectives are visited to explain whether they were answered. Research limitations and the gaps are also discussed and recommended for further work.

6.2 RESEARCH SUMMARY

The unsupported claims by EAFs to deliver business capabilities, and the attempt by researchers and practitioners to define business capability has not contributed to the understanding of business capability concept. Literature as analysed in Chapter 2 reveals that there is no consensus on the definition of business capability.

6.2.1 Research Problem and Purpose

The research problem as stated in Section 1.3 and in Chapter 2, indicated that business capability definition is not explicit, despite the claims by EAFs on delivering them. The research problem was therefore framed as follows:

Given, the implicit definition of business capability, it is a challenge to substantiate the claims by EAFs on delivering business capabilities.

The purpose of this research firstly, was to provide a solution to the research problem mentioned above by investigating through the literature the definition of business capability. Secondly, use the conceptual elements of the business capability definition found in the literature to develop a solution called BPCT that can be used to deliver on business capabilities.

6.2.2 Research Question

The research problem and purpose led to the structuring of the research question, whose focus was the identification of key elements that are necessary for a successful business capability planning. The research question therefore was presented as follows:

What are the conceptual elements of a technique that assist with the planning of business capability delivery?

6.2.3 Research Goals and Objectives

The research goals and objectives stated in Section 1.4.1 were formulated to serve as a focus on the research activities. The research objectives were structured as follows:

- **Main Research Objective:** was to answer the main research question by developing and evaluating the BCPT, as a technique for business capability planning.

The sub-research objectives were associated with a purpose that showed whether the main objective was achieved or not, and to what extent the main research questions was answered.

  - **Sub-Research Objective 1**: Explore the origins, background and definition of capability and Business Capability.
  - **Sub-Research Objective 2**: Organise definitional key concepts of business capabilities derived from the key and prominent studies in order to inform the design of the BCPT.

6.3 RESEARCH RESULTS

The research was designed in such a way that a chapter was dedicated to the achievement of each of the research objectives. The chapters associated with each objective are listed in Table 6.1

Table 6.1: Research Sub-Objectives and Chapters

Research Sub-Objective (RSO)	Chapter
RSO1: Describe the origins and theoretical background of capability and Business Capability.	Chapter 2: An Exploration of Business Capability and Enterprise Architecture Frameworks
RSO2: Organise definitional key concepts of business capabilities derived from the key and prominent studies in order to inform the design of the BCPT	Chapter 4: The Design and Development of the Business Capability Planning Technique

6.3.1 Research Sub-Objective 1 Results

This research followed a DSR method as described by Vaishnavi and Kuechler (2013) to investigate the claims made by TOGAF on the delivery of business capabilities. This necessitated for a problem to be understood in terms of an agreed upon definition of a business capability, its fundamental constructs and the nature of significant academic work done to explain the TOGAF's claim. In DSR this approach is called creating an awareness of the problem and this was detailed in Chapter 2 of this study. The research sub-objective 1 was answered in the study as follows:

- **Describe the origins and theoretical background of capability and business capability**: Chapter 2 provided a detailed account on the history of capability and business capability in Section 2.3.1. The discussion of capabilities lends to multiple definitions. The term capability is often used interchangeably with other terms such as business capability, information technology capability and organisational capability (Winter, 2000). The intended meaning often depends on the context upon which the term is being used for. The term capability is defined at a high-level and has other capability sub-types which inherits the characteristics of the high-level capability. This then means that all the definitions of sub-capabilities build on top of the high-level capability definition. Table 2.2 in Section 2.3.1 is an attempt to compare various definitions, which indicates inconclusive definition of the capability concept. However, the analysis of the definitions led to a better understanding of themes that characterises a capability. The themes are as follows:
    - Capabilities relate to resources.
    - Capabilities are connected to a context or an environment.
    - Capabilities relate to goals, outcome, and value.
    - Capabilities relate to work activities or processes.
    - Capabilities are linked to information concept.
    - Capabilities relate to roles and actors.

In conclusion, the research sub-objective 1 was realised by providing the origins and historical overview of capability and other capability sub-types, including business capability. In addition, this background gave a broader understanding of the capability as a concept and how other types of capabilities branches from the main inexplicit meaning of capability.

6.3.2 Research Sub-Objective 2 Results

Research sub-objective 2 was expressed as a response to claims by the TOGAF EAF of delivering business capabilities. Based on the understanding that, there is no consensus on the definition of business capability, this led to a problem that this study needed to solve. According to DSR model a solution should be suggested once the awareness of the problem has been created (Vaishnavi & Keuchler, 2013). The suggested solution needed to address the lack of a step-by-step guide for the EA practitioners to develop business capabilities for their firms. Research sub-objective 2 was answered in the study as follows:

- **Organise definitional key concepts of business capabilities derived from the key and prominent studies to inform the design of the BCPT:** The Business Capability Planning Technique (BCPT) was proposed as a solution to address the lack of a step-by-step guide for the development of business capabilities. The BCPT was developed using key concepts from an aggregated business capability definition. The BCPT was demonstrated to EA and Business Architecture professionals as a sequential step-by-step guide in the development of business capabilities.

The demonstration of the BCPT to the EA practitioners gave rise to an understanding of the following:

- Conceptual elements that constitute a business capability.
- Claims by TOGAF EAF in the delivery of business capabilities.

In conclusion, the research sub-objective 2 was realised by creating the BCPT. The conceptual element used to create the BCPT gave a better understanding on the definition of the business capability concept. In addition, it helped to challenge the claims by TOGAF on the delivery of business capabilities.

6.3.3 Answer to the Research Question

The answer to the research question is the BCPT, which provides an effective and useful business capability delivery. Based on the understanding of the basic concepts that describe business capability, the BCPT artefact was created. Figure 6.1 below is the illustration of the BCPT, which shows a set of fundamental concepts and their interrelationships.

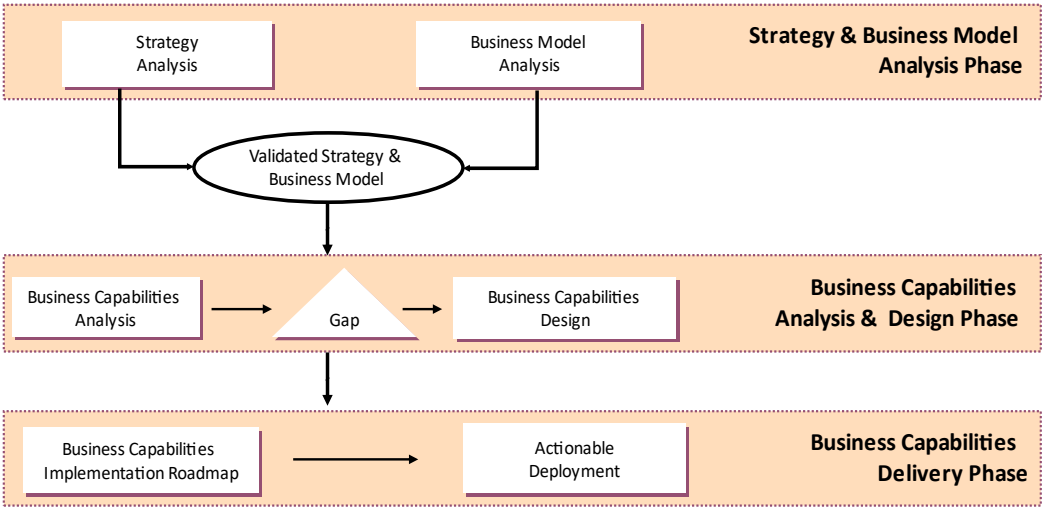


Figure 6.1: BCPT Solution to the Research Problem

In conclusion, the lack of an agreed upon business capability definition is not addressed by the BCPT. However, the basic conceptual elements used to create the BCPT may assist in progressing further the understanding of business capability.

6.4 FURTHER WORK

Creating the BCPT would have been an easier exercise if the definition of business capability was understood and agreed upon. An aggregated definition of business capability was necessary to form the foundational conceptual elements upon which the BCPT was designed. The contribution of this research is rooted in business capability research, as well as in qualitative methods. Although the research problem was to understand the conceptual elements of business capabilities and the answer was the BCPT, further work is needed on both business capability definition as well as the BCPT.

6.4.1 Further Research on Business Capability Definition

This study has highlighted the need for the business capability definition. This definition can progress the discussion towards a common language, leading to a better understanding of the business capability concept. The aggregated business capability definition suggested in this study could be a starting point and could have implications on both academic and practice environments.

6.4.2 Further Research on BCPT

The BCPT is the first of its kind and has been founded on an aggregated definition of business capability. The purpose of finding an implicit business capability understanding was achieved but considering everything that must be achieved in the business capability field, a lot more needs to be done. More work is needed to advance what already is known about business capability. BCPT has the potential to be used as a tool to explain business capability conceptual foundations as well.

6.5 CONCLUSION

The research problem has been addressed by the BCPT solution which has supplied a better understand of what conceptual elements constitute a business capability. The claim by the TOGAF to deliver on business capability is refuted. The BCPT serves as a basic explanation of the business capability concept. All of its conceptual elements and the relationships amongst each other, are necessary to understand business capability composition. Nevertheless, the BCPT is not an absolute answer and still needs to be interrogated and engaged with. This study and its results are part of an ongoing process, to understand business capability.

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Appendix A: Ethical Clearance Certificate

UNISA university of south africa

UNISA COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY'S (CSET) RESEARCH AND ETHICS COMMITTEE

12 September 2018

Ref #: 040/MFD/2018/CSET_SOC
Name: Mr Masande Frank Damane
Student #: 37431218

Dear Mr Masande Frank Damane

Decision: Ethics Approval for 3 years (Humans involved)

RECEIVED 2018 -09- 13 DEAN College of Science, Engineering and Technology

Researchers: Mr Masande Frank Damane, 32 Felspar Street, Helderkruin, Roodepoort, 1724, 37431218@mylife.unisa.ac.za, +27 11 768 7536, +27 83 656 6934

Project Leader(s):

Dr Jan C Mentz, MentzJC@unisa.ac.za, +27 11 670 9124

Working Title of Research:

Towards an understanding of the concept of Business Capability Planning Technique

Qualification: MSc in Computing

Thank you for the application for research ethics clearance by the Unisa College of Science, Engineering and Technology's (CSET) Research and Ethics Committee for the above mentioned research. Ethics approval is granted for a period of three years, from 12 September 2018 to 12 September 2021.

1. The researcher will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Unisa College of Science, Engineering and Technology's (CSET) Research and Ethics Committee. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.

Open Rubric

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The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.

3. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
4. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
5. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
6. No field work activities may continue after the expiry date (12 September 2021). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.
7. Field work activities may only commence from the date on this ethics certificate.
8. Permission to conduct this research should be obtained from Tshwane University of Technology prior to commencing field work.

Note:

The reference number 040/MFD/2018/CSET_SOC *should be clearly indicated on all forms of communication with the intended research participants, as well as with the Unisa College of Science, Engineering and Technology's (CSET) Research and Ethics Committee.*

Yours sincerely

Dr. B Chimbo

Chair: Ethics Sub-Committee SoC, College of Science, Engineering and Technology (CSET)

Prof I. Osunmakinde

Director: School of Computing, CSET

Prof B. Mamba

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Appendix B: Business Capability Planning Technique Demonstration

UNISA university of south africa

Business Capability Planning Technique

"A Guide for the Planning and Designing of Business Capabilities"

Prepared for Masters of Science Dissertation

by

Masande Frank Damane

Agenda

- Purpose of the demonstration
- Business Capability Definitions (*Academic & Practitioner*)
- Presentation of the Case Study Problem
- Demonstration of the Business Capability Planning Technique (BCPT)
- Feedback on the BCPT
- End

Purpose of the Demonstration

Context

- Demonstrate an approach to address the **lack** of **detailed guideline** by Enterprise Architecture Frameworks in the planning and designing of business capabilities.

Purpose of the Demonstration

- To present the Business Capability Planning Technique (BCPT).
- To gain feedback on the **effectiveness** and **utility** of the BCPT.

Academic Definitions of Business Capability

Business capabilities are the **ways** in which enterprises combine **resources**, **competencies**, **information processes** and their **environments** to deliver consistent **value** to **customers**

(Burton, 2013)

The means to define the organisation's **capacity** to successfully perform a **unique** business activity that delivers **measurable value** (Van Dijk 2012, Rosen 2010)

Business capability is what the business **does** and what it will need to do **differently** in response to strategic **challenges** and **opportunities**. (Papazoglou, 2014).

Practitioner Definitions of Business Capability

Business capabilities is a **combination** of business processes, people (organisation, knowledge and skills, culture), technology solutions, and assets (facilities, funds, etc) **aligned** by **strategic** performance **objectives**.

In addition, capabilities are the **building blocks** of the enterprise and have **relationship** to each other and the **environment** (Bredemeyer (2003).

Business capability is the **ability or capacity** that a business may possess or exchange to achieve a specific **purpose or outcome** (TOGAF, 2016).

Business capability is **what** the organisation **does**, whilst the **business processes** are **how** the organisation **executes** its **capabilities** (Gartner, 2010).

BCPT Insurance Case Study Example

- BCPT Insurance isa idealistic financial service provider, which provides a range of insurance products and solutions to fulfil personal, commercial and corporate needs of their customers.

- BCPT Insurancepartner's with brokers to deliver personal advice to protect client's valued assets and help attain their financial goals and aspirations.

- In the recent study conducted by BCPT Insurance marketing, the company noticed that the internet has led to an increased competition in this market, particularly the youth market. In developing their strategy BCPT Insurance has identified the following strategic initiatives for the next three years:

    - Use technology to distribute products and services, thereby augmenting the current broker depended distribution channels.
    - Create a unique client service point through which all claims can be registered by customers and brokers using digital channels. This will ensure that customer claims can be processed in less than 24 hours.
    - Transform claimsback office processes to improve customer experience, reduce risk and increase productivity.

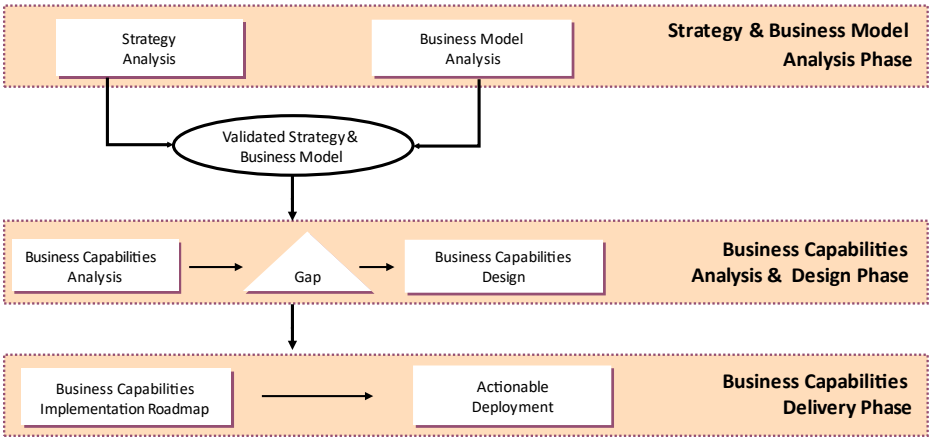
  Enterprise Architecture (EA) has been mandated to take the lead role in the planning and designing of BCPT Insurance Business Capabilities.

Business Capability Planning Technique (BCPT)

BPCT consists of the following threePhases:

- Strategy and Business ModelAnalyses Phase
- Business Capability Analysis and Design Phase
- Business Capability Delivery Phase

Sequence or Flow of the BCPT Stages



Stage 1 (a) : Start with Strategy Analysis

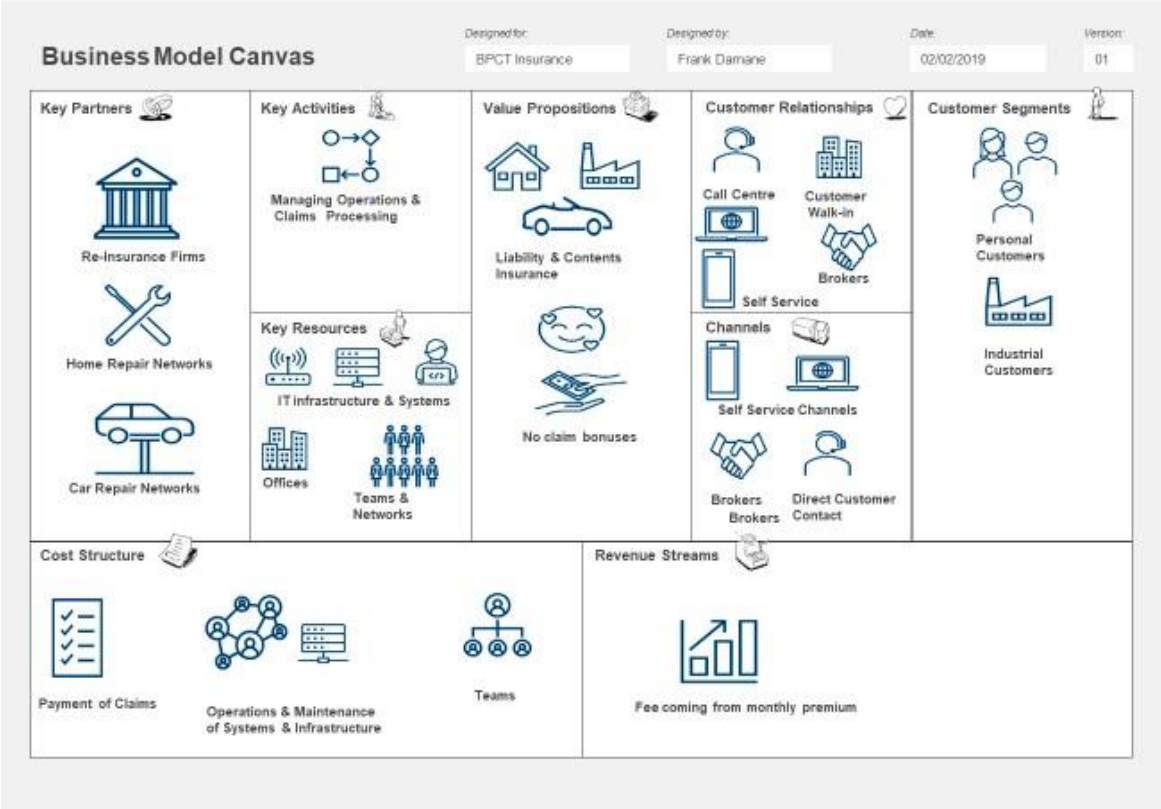
Objectives: To obtain clarity on the business plan of action and the capabilities required to achieve the desired business outcomes.

- **Input**
  - Clear and well-defined strategy documentation

- **Steps Required:**
  - Review Strategy to gain direction of the organisation
  - Conduct Management Interviews for verification and alignment (***when necessary***)
  - Analyse Competitive Market (***Optional***)

- **Methods that can be Applied**
  - SWOT Analysis or;
  - Balance Scorecard to map the Strategy (**where one exists – simply review**)

- **Output:**
- Business Model that:
  - Is deeply intertwined with strategy
  - Is dictated by the strategy
  - Shapes the strategy in as much as it constrains some actions and facilitates others
  - Determines Desirability, Feasibility and Viability of the services or products
  - Determines which business capabilities are required to achieve the business outcomes



Business Model Definition

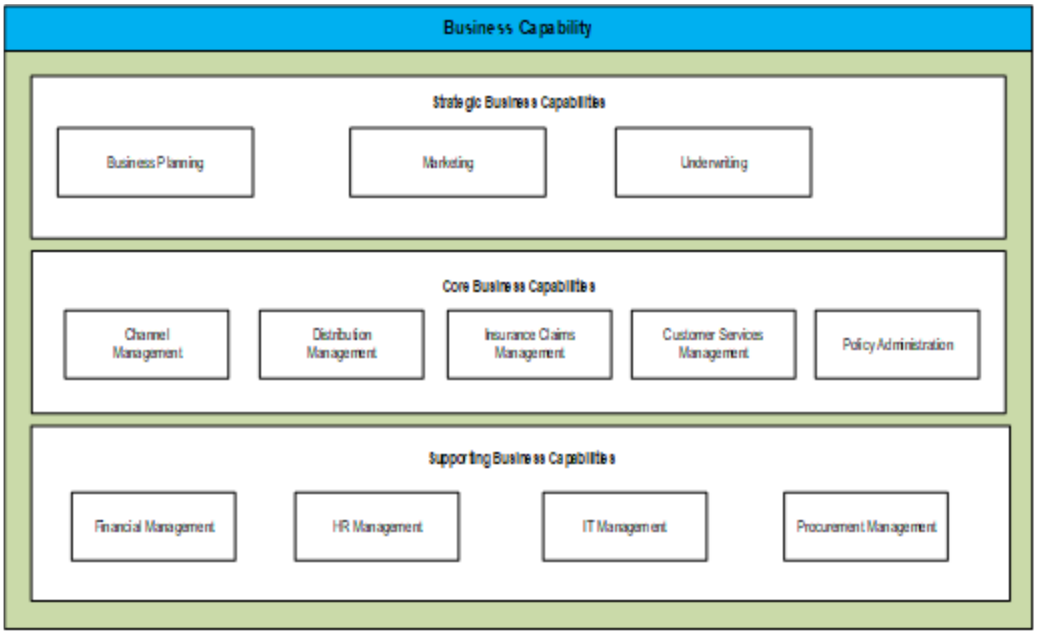
Definition

Business model definesthe **manner** by which the enterprise **delivers value** to its **customers**, **entices** customers to **pay** for **value** and convert those payments to **profit** (Teece, 2010).

Put clearly, business model refers to the**logic of the firm**, the way it **operates** and how it **creates value** for its **stakeholders**(AlexanderOsterwalder & Yves Pigneur, Business Model Generation, 2009).

Stage 2(a): Business Capability Analysis Stage

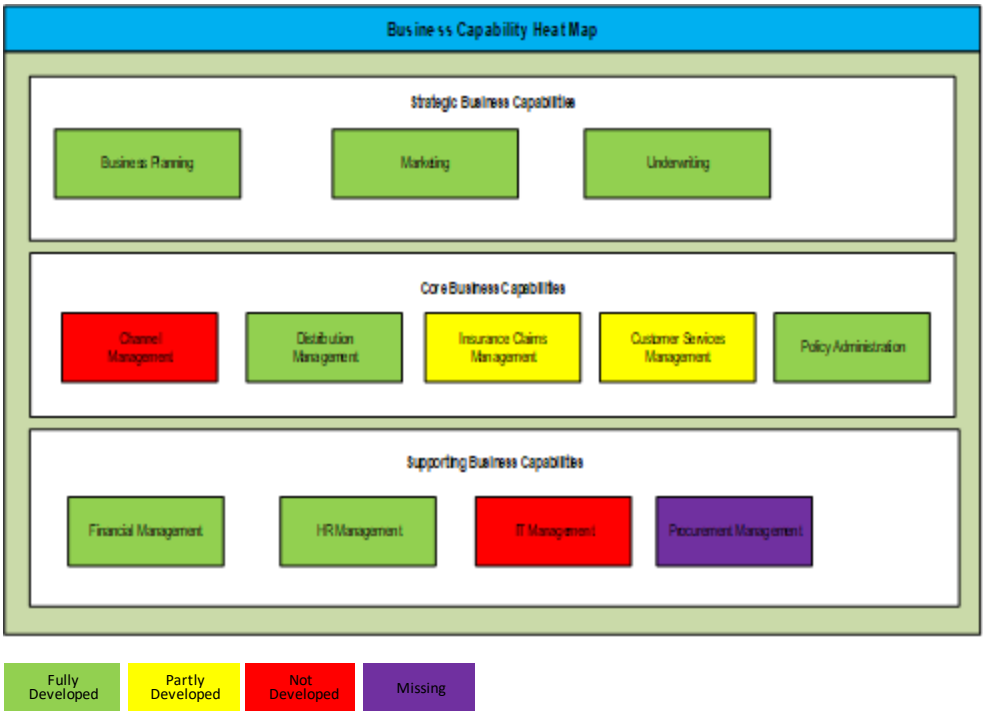
Level 1 Depiction



12

Stage 2(a): Business Capability Analysis Stage

Heat Mapping



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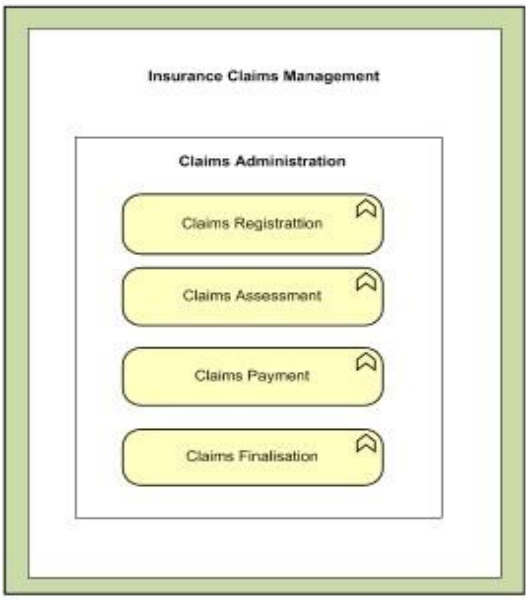
Stage 2(a): Business Capability Analysis Stage

Level 3 Decomposition



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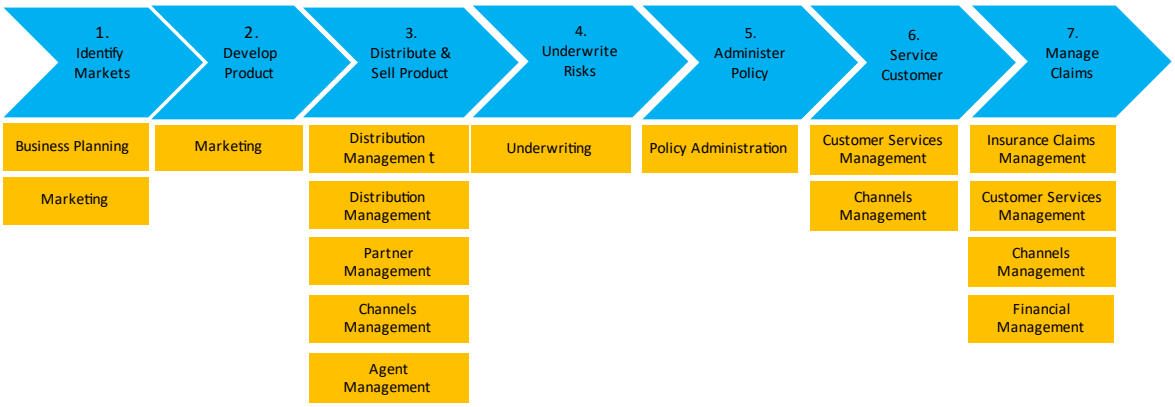
Mapping Business Capabilities to a Value Stream



Part 2(b): Business Capability Design Stage:*Elements*

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Elements Descriptions

Roles

Roles represent the individual actors, stakeholders, business units or partners involved in deliveringthe businesscapability

Processes

Individualbusinesscapabilitiesare enabled or delivered through a range of businessprocesses.

Information

Information (in this context) represents the business information and knowledge required or consumed by the business capability (as distinct from IT-related data entities). This may be information that the capabilityexchange with other capabilitiesto support the execution of value streams.

Tools

Business capabilities rely on a range of tools, resources, or assets for successful execution. These tools may include:

- Information technology systems and applications
- Physical, tangible assets like buildings, machinery and vehicles
- Intangible assets like money and intellectual property

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Business Capability Attributes Example: Claims Administration

Name	Claims Administration
Description	The ability to handle claims efficiently and ensure that payment for a valid claim is made to the customer
Elements	**Roles** ○ User ○ Claims Handler ○ Stakeholders ○ Customer ○ Claims Assessor ○ Claims Manager
	Processes ○ Register Claim ○ Evaluate Claim ○ Refer Claim for assessment ○ Approve or Reject Claim ○ Pay Claim ○ Notify Policyholder
	Information ○ Customer Details ○ Customer Policy information ○ Claim request ○ Claims Handbook ○ Claims supporting documents ○ Assessment reports ○ Customer claims history
	Tools ○ Claims Management System ○ Customer Notification System ○ Financial System ○ Assessment System

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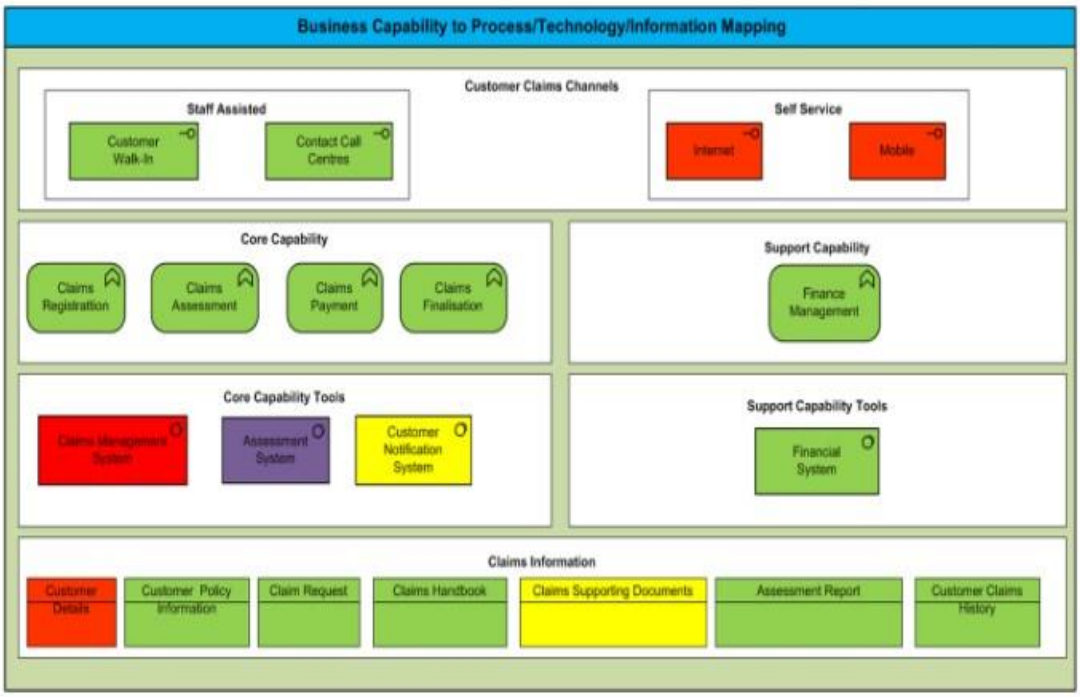
Capabilities to Processes to Technologies to Information Mapping

(End to end GAP Analysis)



Fully Developed | Partly Developed | Not Developed | Missing

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Business Capability Models helps to answer Strategic Questions

Such as the following:

- Which are our **strongest** and **weakest** capabilities?
- Which capabilities provide strategic **differentiation**?
- Which capabilities can be **leveraged** in **new** markets?
- Where should we **invest** our **resources**?
- Where can technology **add** more strategic **value**?
- Where can technology be used to **lower** cost?
- Where do we have **multiple** processes and technologies supporting a **single** capability?
- Which capabilities are **costing** too much to support?
- Which capabilities should we **outsource**?
- Where do we need more employee **education**?
- Where do we need process **improvement**?

Part 3(a): Actionable Deployment Plans

Objectives: To develop the most critical business capabilities required by the business.

- **Input**
  - Prioritised business capabilities to be developed
  - Architecture requirements
  - Architecture Principles
  - Business Priorities

- **Steps Required:**
- Develop Architecture iteratively in four domains
  - Business
  - Data
  - Application
  - Technology
- In each case start with desired state

- **Techniques Utilised:**
  - Business Capability Planning Technique (BPCT) using Agile methodology

- **Output:**
  - Business Capability Vision and implementation scenarios supporting business strategy
  - Standards, Patterns and Frameworks
  - Architectural Epics

Thank You

Appendix C: Post Demonstration Interview Questions

BCPT Evaluation Interview Questions

Structured Interview Protocol: for the evaluation of Business Capability Planning Technique

Interviewer: Frank Damane
Institution: University of South Africa, College of Science and Technology.
Duration: 1 hour
Data recording: Mobile Phone Voice Recorder and Paper Recording
Confidentiality: No specific links will be mentioned between companies and the opinions in the interview.
Participants Feedback results: Confirmation of the results afterwards will be communicated by email.

Aim of the Interview:
The aim of this interview is to capture the participant's experiences on the use of the BCPT artefact. In addition, feedback on the positive and negative points when using BCPT will be captured as input to improve the BCPT artefact. The result of the interviews will be the participants views, experience and of opinions on the use of the BCPT artefact in practice.

Protocol:

- Introduction of the study to the participants.
- Participant's background and that of the company.
- Introduction of a small case to be resolved using the BCPT artefact.
- Questions to obtain feedback on the effectiveness and utility of the BCPT artefact.
- Further comments that could be used to improve the artefact.
- Thanking the participants

1. Introduction of the researcher and the study

- Formal introduction of the researcher and the study – this is UNISA standard official letter.

2. Introduction of interviewee background and company

- Please state your Name
- What is your position in the organisation?
- How long have you been in your present position?
- How long have you been working in this organisation?

3. Participants General Knowledge on Business Capability Planning

- **Part I:** Ascertain Business Capability Planning method used in the organisation.

    - Do you perform business capability planning activities in your organisation?
    - IF Yes, which approach/method/framework do you use?
    - And, please describe your role in the development of Business Capability Planning in your organisation.

- For what purposes would you perform Business Capability Planning in your

- **Part II:** Ascertain Participants understanding of Business Capability Planning Definitions.

    - Would you suggest any changes to the presented definitions in the BCPT artefact for the below concepts?

        - Business Strategy Analysis
        - Business Modelling
        - Business Model Canvas
        - Business Capability
        - Business Capability Heat Map
        - Resources

4. Participants feedback and opinions on the effectiveness of the BCPT artefact

- **Part III:** Ascertain Participants feedback on the method provided by the BCPT artefact to develop business capabilities.

    - Are the steps of the presented Business Capability Planning Technique complete?

        - IF Yes, can you please expand on that?
        - IF No, can you please expand on that?

    - Were the overall parts of the BCPT artefact clear to you?

        - IF Not, which parts of the BCPT artefact were unclear?

    - Do you think the BCPT artefact has any value to your practice as an Enterprise Architect?

        - If Yes, can you please expand on that?
        - If No, can you please expand on that?

    - Do you think the BCPT artefact helps you in the creation of Business Capabilities?
        - If Yes, can you please expand on that?
        - If No, can you please expand on that?

- **Part IV: Participants feedback and opinions on the utility of the BCPT artefact**

- What do you think of the visual representation of the BCPT artefact?
- Do you consider that the proposed notation is intuitive enough?
    - If not, why?
- Do you think that it fits well with the standard notation?
    - If not, why

5. Further comments on BCPT artefact evaluation

- Do you have any other comments on the BCPT artefact?
- Were the questions and discussions in this interview clear to you?
    - If Not, which discussions?
    - And what questions?
- Were all topics clear to you?
    - If not, which ones?

6. **End of the Interview**