

Supporting SMEs in Partnerships: Towards a Relational Capability Framework

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*Thesis presented in partial fulfilment of the requirements for the
degree of Master of Engineering (Industrial Engineering) in the
Faculty of Engineering at Stellenbosch University*

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April 2019

DECLARATION

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ABSTRACT

In a developing country such as South Africa, the survival and growth of small and medium enterprises (SMEs) is critical to the growth and prosperity of the country. Their importance for the modern economy, and their contribution to economic development is widely recognised and accepted. Nevertheless, they face several challenges which result in high failure rates. With the fast pace of technological change, and an increasingly dynamic business landscape, the topic of SME support is becoming more important.

The changing business landscape can be viewed from an ecosystem perspective to make sense of the emerging, abstract concepts. The ecosystem perspective provides an alternative lens that captures this transformation by emphasising the importance of relationships, partnerships, and collaboration. It is becoming increasingly recognised that there are several strategic benefits for both large and small firms to enter into collaborative, symbiotic partnerships. Many characteristics inherent to SMEs, such as agility, flexibility and innovative capabilities are characteristics that larger firms are increasingly looking for in partners. The reality of partnerships however, particularly for an SME, is that they are both complex and challenging. If SMEs do not have guidance to strategically apply these characteristics, their already limited resources would constantly be placed under even more strain. In this vein, the study was continued with the objective to develop a framework that can guide a South African SME to identify, and improve the capabilities required to develop business-to-business (B2B) relationships in business ecosystems.

In pursuit of this objective, the systems engineering approach was utilised to guide the problem solving process. This involved identifying the requirements that are necessary or compulsory for a relationship to function as desired, and converting these requirements into relational capabilities through which the requirements can be addressed in an SME. The relational capabilities were subsequently consolidated into a two-dimensional framework, referred to as the Relational Capability Framework (RCF). The RCF however needed to be transformed into a tool that could be used to guide an SME to identify and improve the necessary relational capabilities. This was done by adding a third dimension, Capability maturity, to the RCF to develop the Relational Capability Maturity Model (RCMM).

The RCF and related RCMM were subject to a three-stage validation process. This involved 1) a capability ranking questionnaire, 2) two illustrated case studies, and 3) semi-structured interviews. Throughout this

process, the RCF was continuously refined in order to provide the confidence that the framework delivers on its main objective.

The RCMM was applied using a three-stage improvement process, including 1) evaluation, 2) planning and 3) improvement. Through the practical application, the framework has been proven to be useful in creating explicit knowledge. This knowledge can in turn be used to guide an SME to become self-aware, learn about their capabilities and identify opportunities for improvement.

The framework presents a vehicle through which SMEs have the opportunity to address and improve their relational capabilities, and strengthen their position in B2B relationships. Through enabling SMEs to do this, it is believed to bring them one step closer to increased survivability, and increased success.

UITTREKSEL

Die welstand en ontwikkeling van klein- en medium ondernemings (KMO's) in 'n ontwikkelende land soos Suid-Afrika, is uiters belangrik vir die groei en vooruitgang van die land. Die rol van KMO's in die moderne ekonomie, en hul bydrae tot ekonomiese ontwikkeling word wyd erken en aanvaar. Ten spyte van die belangrikheid, staan hul verskeie uitdagings in die gesig, en dit lei uiteindelik tot hoë mislukningskoerse. Teen die pas wat tegnologie vorder, word die besigheidslandskap dinamies. Om hierdie rede word die onderwerp van KMO-ondersteuning belangriker.

Om 'n beter begrip te kry van die ontluikende, abstrakte konsepte wat gepaard gaan met die veranderende besigheidslandskap, word dit bestudeer vanaf 'n ekosistiem perspektief. Hierdie perspektief bied 'n alternatiewe lens wat die transformasie kan vasvang. Dit beklemtoon die belangrikheid van verhoudings, vennootskappe en samewerking. Besigheids-ekosisteme behels verskeie strategiese voordele vir beide groot en klein ondernemings om samewerkende, simbiotiese vennootskappe te betree. Baie eienskappe wat aan KMO's onderhewig is, soos behendigheid, aanpasbaarheid en innovasie vermoëns, is eienskappe wat groter maatskappye al hoe meer in vennote begeer. Die realiteit van vennootskappe, veral vir 'n KMO, is egter dat hulle kompleks en uitdagend is. As KMO's nie leiding het om hierdie eienskappe strategies te benut nie, sal hul reeds beperkte hulpbronne voortdurend onder meer druk geplaas word. Die studie is voortgesit met die doel om 'n raamwerk te ontwikkel wat 'n Suid-Afrikaanse KMO kan lei om die vermoëns wat nodig is om besigheid-tot-besigheid (B2B) verhoudings te ontwikkel, te identifiseer en te verbeter.

Die stelsel-ingenieursbenadering is gevolg met die doelwit om die probleemoplossingsproses te lei. Die proses behels eerstens die identifisering van die vereistes wat nodig en verpligtend is vir 'n verhouding om te funksioneer soos verlang. Daarna word die vereistes omskep in verhoudingsvermoë waardeur hierdie vereistes in 'n KMO aangespreek kan word. Die verhoudingsvermoëns is vervolgens saamgevat in 'n tweedimensionele raamwerk, naamlik die Verhoudingsvermoë Raamwerk (VVR). Die VVR moes egter omskep word in 'n hulpmiddel wat gebruik kan word deur 'n KMO om die nodige verhoudingsvermoë te identifiseer en te verbeter. Die hulpmiddel is ontwikkel deur 'n derde dimensie by te voeg tot die VVR, naamlik vermoëns-volwassenheid. Hierdie hulpmiddel word die Verhoudingsvermoë Volwassenheid Model (VVVM) genoem.

Die VVM en verwante VVVM was onderhewig aan drie opeenvolgende fases van validering. Dit sluit 'n vermoë ranglys vraelys, twee gevallestudies, en semi-gestruktureerde onderhoude in. Gedurende hierdie proses is die VVM voortdurend verfyn om te verseker dat die raamwerk op sy hoofdoelstelling lewer.

Die VVVM is toegepas met behulp van 'n drie-stap verbetering proses, naamlik evaluering, beplanning en verbetering. Deur hierdie praktiese toepassing is dit bewys dat die raamwerk bruikbaar is om eksplisiete kennis te skep. Hierdie kennis kan op sy beurt gebruik word om 'n KMO te lei om bewus te word van hul interne eienskappe, te leer oor hul vermoëns en geleenthede vir verbetering te identifiseer.

Die raamwerk bied 'n instrument waarvolgens KMO's die geleentheid het om hul verhoudingsvermoëns aan te spreek en te verbeter, en sodoende hul posisie in B2B-verhoudings te versterk. Deur KMO's in staat te stel om dit te doen, word geglo dat dit hulle een stap nader aan beter oorlewingsvermoë en groter sukses sal bring.

ACKNOWLEDGEMENTS

If I can take one lesson from this journey, it is that collaboration is key to success. This journey was certainly a team effort. Hereby I would like to acknowledge the following people for their various contributions towards the completion of this work:

- Prof Saartjie (Sara) Grobbelaar, thank you for your insightful guidance. I am always in admiration of your extensive knowledge, and I am privileged to have worked with you and learnt from you these past two years. Your enthusiasm for research is inspiring, and you continuously renewed my excitement for this study.
- Dr Denzil Kennon, thank you for your never-ending confidence. Especially those times when I needed it most, but deserved it least. You went above and beyond, and I am forever grateful for your commitment and support.
- Prof James Bekker and the USMA research group, thank you for inviting me into your family. I don't know what I have done to deserve you, you made this journey a life experience that I will forever treasure.
- I am also indebted to the interviewees and the many small-business owners who took the time to share their insights. Your contribution is invaluable and greatly appreciated.
- To my parents, Danie and Joëtte Els. Where does one even begin to say thank you for a lifetime of support. This thesis is as much yours as it is mine.
- To my brother, Jacobus Els, who in the midst of starting his own business, always found the time and the energy to help his sister. I have learnt so much from you, thank you.
- Thérèse Fensham, thank you for carefully and thoughtfully helping to soften the edges of this thesis. We made a good team.
- Lohan le Roux, thank you for your encouragement, pep-talks, and constant reassurance that everything will be okay. Thank you for being my soundboard and for always listening, I believe you are now also a Master on this topic.
- Finally, to the family and friends who always supported and always believed. Thank you especially for the much needed distractions and the constant reminder of balance.

Now, it's time to turn the page.

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Glossary

Business	An economic system where different types of value are exchanged between two or more parties.
Enterprise	A complex system of cultural, process, and technological components that interact to accomplish strategic goals; under the ownership or control of an organisation.
Firm	Used interchangeably with enterprise.
Organisation	The hierarchical arrangement of lines of authority, communications, rights and duties within a firm.
Partnership	A formal business arrangement between two firms, who share mutual interests or investments, and share expenses, profits, and losses according to the partnership agreement.
Relational capability	The organisational means through which the relationship requirements are addressed (also referred to as capabilities).
Relationship	The way in which two or more individuals, groups or entities regard and behave towards each other.
Relationship requirement	A condition that is necessary or compulsory for a relationship to function as desired.
Relationship solution	A means of dealing with one or more of the relationship requirements. This is achieved through proposing relational capabilities.

List of acronyms

AER	Adaptive Enterprise Reference
B2B	Business-to-business
B2C	Business-to-customer
CMM	Capability Maturity Model
CMMI	Capability Maturity Model Integration
GDP	Gross domestic product
GEM	Global Entrepreneurship Monitor
ICMM	Innovation capability maturity model
M&A	Mergers and acquisitions
PPM	Project portfolio management
R&D	Research and development
RCF	Relational Capability Framework
RCMM	Relational Capability Maturity Model
SE	Systems engineering
SEI	Software Engineering Institute
SEMA	Small Enterprise Development Agency
SME	Small and medium enterprise
SW-CMM	Capability Maturity Model® for software
VAT	Value added tax

1. Introduction

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This chapter serves as an overall introduction to the study by presenting the research problem and providing the needed background information for context. Firstly, the research objectives will be determined to guide the problem solving process throughout the study. Secondly, the relevant research domains will be determined and briefly discussed. The chapter concludes with an overview of the structure of the document.

1.1. Background

Poverty, inequality and unemployment are issues that affect people world-wide. In developing countries, the effects thereof are particularly evident. In South Africa, unemployment rates¹ are as high as 26.7% amongst the general population and even higher amongst the youth at 38.2% (StatsSA, 2018). The importance of small and medium enterprises (SMEs) for the modern economy, and their contribution to economic development is widely recognised and accepted (Deakins and Freel, 1998; Bartlett and Bukvić, 2001). SMEs account for a

¹ 'Unemployment rate' refers to the percentage of the workforce (people aged between 15 and 64), who are unemployed, but willing and able to work and actively seek employment. In South Africa, those between the ages of 15–34 years are considered as youth.

large proportion of the total employment growth in most countries, and as a result produce a significant share of the Gross Domestic Product (GDP)² (Etuk, Etuk and Michael, 2014).

This phenomenon has stimulated a great deal of effort to support SMEs and increase their survivability and deservedly so considering the high failure rates of SMEs (Jenkins, 2015). It is estimated that as much as 75% of new businesses will not survive the first two years of operation (Fatoki and Odeyemi, 2010). Now, with the fast pace of technological change and an increasingly dynamic business landscape globally, the topic of SME support is becoming more critical and more relevant.

Firms are developing new and innovative ways of creating value as digitisation and connectivity technologies are becoming increasingly sophisticated. New capabilities are enabling firms to utilise assets that they do not own in order to engage with a larger number of participants, and to coordinate more complex activities. Suppliers and internal businesses are linked in jointly owned initiatives within global supply chains, transforming supply chains to coordinate collaboration, learning and creativity across diversified groups (Canning and Kelly, 2015).

When considering the increasingly dynamic business environment, researchers identified important parallels between the behaviour of firms and the behaviour of organisms found in natural ecosystems (Moore, 1993). The ecosystem perspective provides a powerful lens through which this transformation can be viewed in the business landscape by emphasising the growing importance of relationships, partnerships, networks, alliances and collaboration (Canning and Kelly, 2015).

When considering the position of SMEs in business ecosystems, the prospects are both exciting and concerning. Larger and more mature firms are starting to recognise how integral the smaller players are to achieve their own commercial objectives. SMEs with a technical or specialist approach are able to offer what large firms are increasingly seeking in business partners. Small and large firms are able to create unique combinations to serve the market in new ways. Furthermore, the small size and flexible structures of SMEs increase their ability to innovate (Kelly and Marchese, 2015).

² The GDP is equal to the total expenditures for all final goods and services produced within the country in a stipulated period of time.

Traditionally, it has been assumed that SMEs operate locally, and function in isolation from larger firms. Now, they have a growing opportunity to operate within markets that were previously not accessible to them. Moreover, ecosystems offer new opportunities for SMEs to access key resources such as information, capital, goods and services that were under traditional circumstances not within their reach (Etemad, 2004; Ndou *et al.*, 2010; Darcy *et al.*, 2014).

At the same time however, several debates have been sparked over whether SMEs will truly benefit from such a dynamic and open business environment (Rowley and Porterfield, 1993; McConnaughey, Nila and Sloan, 1995). The disruptive nature of this transformation creates fear and uncertainty amongst SMEs. It presents significant challenges associated with information technology (IT) infrastructure, abilities to implement new technologies, availability of qualified employees, as well as the resources needed to cope with a digital and interactive environment. Achieving this transformation will require coordinated action from a wide range of stakeholders, including government, industry associates and the private sector (Schröder, 2016; Pereshybkina *et al.*, 2017).

It is becoming apparent that one of the biggest challenges and opportunities for SMEs simultaneously lie in their ability to develop business relationships that are increasingly fluid and collaborative. Because of the shift in the fundamental logic of the traditional value creation chain, value is being created not only within firms, but also through rich interactions between them. The traditional closely monitored, contractual agreements between firms are continuously being challenged by new imperatives such as learning, agility and renewal (Normann and Ramirez, 1993; Kelly and Marchese, 2015). The linkages between small and large firms are however a complex endeavour. Business-to-business (B2B) relationships are constantly evolving and it involves dynamic and complex interactions. SMEs are often dependent on their larger partners' processes and are naturally inclined to adapt to these partners' initiatives (Brennan, Turnbull and Wilson, 2003; Quayle, 2003). To respond to the dynamism, constant modifications to the interactions are required. While SMEs mostly have the flexibility and agility to adapt to these modifications, their already limited resources would constantly be placed under even more strain if they do not have a guiding principle to strategically use these characteristics (Boeck, 2009).

The strategic benefits for both large and small firms to enter into collaborative, symbiotic partnerships are becoming more widely recognised. If SMEs are however not equipped to facilitate dynamic and complex B2B

relationships with larger firms, business ecosystems will only become another market space dominated by large firms where SMEs are unable to operate. A research opportunity is therefore identified where SMEs require a framework through which they can improve their capabilities to establish and maintain B2B relationships to increase their chance of success in business ecosystems.

1.2. Problem statement

Driven particularly by digitisation and increased connectivity, the competitive environment in which businesses operate has been transforming radically. Value has increasingly being created not only from inside firms, but also within the rich interactions between them. As a result, key ideas like symbiosis and co-evolution are becoming central focus points in B2B relationships. This business environment, which is found to resemble an ecosystem environment, presents new opportunities for SMEs to operate in markets from which they were previously isolated. Their small size and flexible structure place them in an advantageous position in the ecosystem where they are able to add considerable value within relationships.

At the same time however, the dynamic and evolving nature of these relationships present various challenges to SMEs. The relationships are often asymmetrical because of their small size, and they are mostly not equipped to deal with power imbalances due to a lack of resources. Essentially, if SMEs are not able to facilitate complex and dynamic B2B relationships with larger firms, they will not be able to fully exploit the opportunities that are available in the ecosystem. There is a lack of guiding principles for SMEs to improve and strengthen their position in relationships. The opportunity therefore exists to provide a framework that can guide SMEs to improve their ability to establish and sustain successful B2B relationships.

1.3. Research strategy and objectives

The primary objective of this research is to develop a framework that can guide a South African SME to identify and improve the capabilities required to develop B2B relationships in business ecosystems.

In pursuit of this objective, a systems engineering approach has been adopted to guide the problem solving process. Systems engineering provides the underlying strategy that forms the basis of the methodology followed to conduct this research. In Chapter 2, the application of systems engineering is discussed in the context of this research, along with the reasoning behind choosing this approach.

At this point however, it is valuable to take note of the concept of systems engineering as it is used to guide the construction of the sub-objectives. In systems engineering, a complex system is seen as a collection of inter-related parts or functions that are integrated to form a coherent whole (Du Preez *et al.*, 2009). In the context of problem solving, the solution to a complex problem can thus be seen as a collection of sub-solutions to the appropriate sub-problems. The five phases of the systems engineering approach as a research strategy are displayed in Figure 1.1. The phases include I) defining and understanding the problem as a whole; II) deconstructing the whole problem into parts; III) finding solutions to each of the parts; IV) integrating the solution parts into a whole; and V) evaluating the extent to which the solution solves the problem.

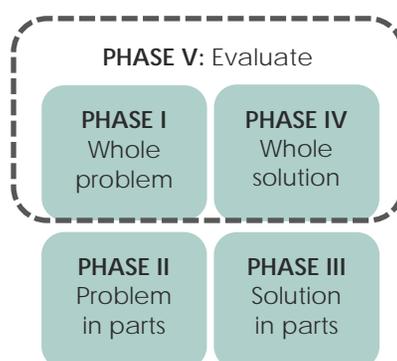


Figure 1.1: Phases of the systems engineering approach as a research strategy, adapted from Ungerer (2015).

The study is therefore presented in five phases. The introduction to the research problem and the subsequent problem statement as presented in this chapter, completes the first phase of the systems engineering approach. Also included in Chapter 1 is the systematic breakdown of the research questions based on the relevant research domains. Each of the research questions has been addressed through a literature review which has been included in Chapters 3, 4 and 5. In Chapter 6, the findings of the literature review has been analysed to identify the conditions of B2B relationships in the context of the research problem. The relationship conditions represent what SMEs should aim to achieve in their B2B relationships within ecosystem environments. This means that these conditions can essentially be seen as the ‘problem in parts’. Also included in Chapter 6 is the interpretation of the relationship conditions in related organisational capability terms. The organisational capabilities present the way in which the SMEs can achieve the relationship conditions. Thus, the organisational capabilities become the ‘solution in parts’. These capabilities are consolidated into a framework in Chapter 7, providing a ‘whole solution’. This is followed by the framework being subjected to a

series of validation activities in Chapter 8 to evaluate whether it provides an appropriate solution to the problem as described in this chapter.

The sub-objectives have been constructed to align with the five phases of systems engineering to achieve the objectives listed in Table 1.1. The sub-objectives can thus be considered as way stations on the road to the main objective.

Table 1.1: Sub-objectives

	Objective	SE Phase	Corresponding Chapter
Objective 1	Define research problem	Phase I	Chapter 1
Objective 2	Formulate the research questions that will guide the theoretical review of the relevant research domains	Phase II	Chapter 1
Objective 3	Address the research questions through a literature review	Phase II	Chapter 3, 4, 5
Objective 4	Identify the relationship conditions as in the context of the research problem (sub-problems)	Phase II	Chapter 6
Objective 5	Convert the relationship conditions into the related organisational capabilities (sub-solutions)	Phase III	Chapter 6
Objective 6	Construct the organisational capabilities into a meaningful framework	Phase IV	Chapter 7
Objective 7	Validate the framework	Phase V	Chapter 8

1.4. Research questions

To achieve the main objective as stated in the section above, the following main research question must be answered: *How can a South African SME be guided to identify and improve the capabilities required to develop B2B relationships in business ecosystems?*

In the following section, which is focused on systems engineering (introduced in the previous section and further discussed in Chapter 2), the main research question needs to be broken down into several sub-research questions. The sub-research questions have been derived from (1) the development of the research domains discussed in the proceeding section; and from (2) the principles of systems engineering.

1.4.1. Research Domains

It is possible to break down the main research question into three primary domains: 1) South African SMEs, 2) Business ecosystems, and 3) B2B relationships. A graphical depiction of the research domains has been included in Figure 1.2 with the arrow indicating the sequence of development. The domains are depicted in this manner to illustrate that each domain has been viewed through the lens of the previous one. The lens in this regard denotes a lens which is tinted in a specific colour, resulting in other colours being viewed differently due to only certain frequencies being able to pass through.

The context of SMEs in South Africa provided the framework for the lens through which the other domains were investigated. This means that the business ecosystem domain has been investigated from the perspective of an SME, thus only including the parts of the domain that has been deemed relevant to SMEs. The same applies for the last domain which is, at this point, subject to two lenses. By applying these lenses, the scope of the study is limited to the areas where the domains overlap. This can be illustrated by the deliberate exclusion of non-South African countries or large businesses, even though they might exist somewhere in the other domains.

The first domain is not subject to any previous lenses, which means that the primary purpose of the domain is to provide the context for the research. South African SMEs have been investigated to gain a broad understanding of the structure, the conditions in which they operate, and how they interact with the business landscape. The business ecosystem domain is selected to capture the increasingly dynamic business landscape due to the fast pace of technological change. This domain focusses specifically on how SMEs operate and interact within this business landscape. Both the challenges and the opportunities that are available to SMEs in this environment are highlighted. Through investigating this domain, B2B relationships have been identified as an important part of SME survival in ecosystems. Subsequently, the last domain focuses on how SMEs facilitate B2B relationships within ecosystem environments. It is again necessary to emphasise that that B2B relationships are not the only contributing factor to SME survival in ecosystems. B2B relationships are however isolated to form the final domain to address this research problem.

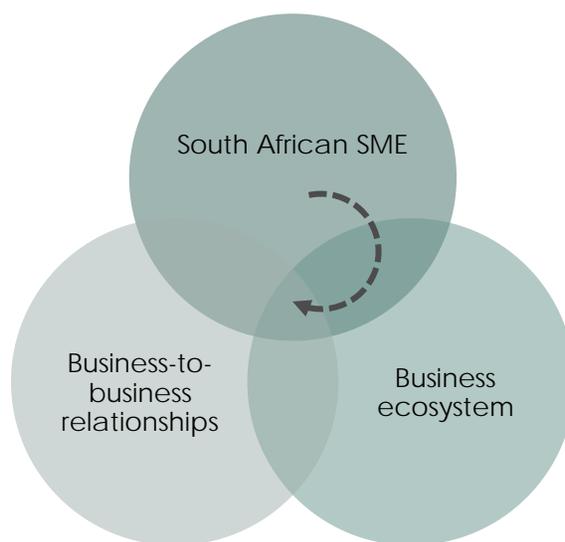
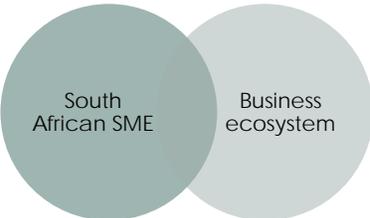
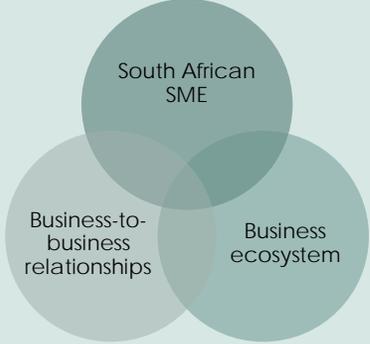


Figure 1.2: Research domains and its systematic development

1.4.2. Sub-research questions

The three research domains discussed in the previous section have been derived from the main research question, mainly through explorative research. As explained by systems engineering, the domain as a whole is too vast and complex to investigate, which means that it should be broken down into sub-questions. Breaking down the research questions has the simultaneous purpose of only investigating the desired interactions between domains. This means that the sub-research questions should be constructed to enforce the lenses that have been applied to each domain. The sub-research questions in correspondence with the main research question and research domains have been included in Table 1.2.

Table 1.2: Research domain development through sub-research questions

Main research question area of investigation	Research domain development	Sub-research questions
<p>How can a South African SME be guided to identify and improve the capabilities required to develop B2B relationships in business ecosystems?</p>		<ul style="list-style-type: none"> • Why are SMEs important in South Africa? • How are South African SMEs classified? • What are the characteristics common to most SMEs? • What are the limitations of SMEs? • Why must SMEs be able to operate in ecosystems?
<p>How can a South African SME be guided to identify and improve the capabilities required to develop B2B relationships in business ecosystems?</p>		<ul style="list-style-type: none"> • What is a business ecosystem? • What is the structure of a business ecosystem? • What is the role SMEs in business ecosystems? • What are the barriers to entry for SMEs? • How do firms interact with each other in business ecosystems?
<p>How can a South African SME be guided to identify and improve the capabilities required to develop B2B relationships in business ecosystems?</p>		<ul style="list-style-type: none"> • Why do firms form B2B relationships? • How are B2B relationships established? • How does B2B relationships evolve? • What factors contribute to the success of B2B relationships?

1.5. Scope of the research

It is necessary to define the scope of the research project to ensure that the objectives are met. According to Mouton (2013), a framework will be ineffective if it is vague, conceptually incoherent or makes implausible claims on reality. The following section thus aims to define not only what the research intends to do, but also to define what it does not intend to do.

1.5.1. Delimitations

The following limitations created the boundaries within which the research problem has been explored:

- This study looks at the business landscape from a business ecosystem perspective;
- This study addresses the research problem by taking an internal capability view of SMEs;
- The study proposes a framework that will aid SMEs to improve their B2B capabilities to participate in business ecosystems;
- The framework aims to guide SMEs to look inward, and to identify the appropriate aspects of their organisation that will influence their ability to contribute to the success of their partnerships; and
- The framework is aimed particularly at SMEs with a technical or deep specialisation due to the unique and complementary contributions they are able to make within a partnership.

1.5.2. Limitations

This study is subject to the following limitations to control the research within a reasonable area and impose the required focus:

- The research does not address all of the challenges that SMEs are faced with in ecosystems, but rather focuses only on their ability to create and sustain B2B relationships;
- The framework will be of a conceptual and generic nature. In order to derive the required value it would have to be made more specific in the context in which it is applied;
- The framework does not provide a recipe for successful B2B relationships, but rather identifies the minimum internal requirements for an SME to be able to create or sustain a relationship;

- The framework does not identify specific improvement activities, the solutions derived from the framework is unique to the firm and requires support from more dedicated methodologies;
- The execution and operation that are related to the implementation of the framework will not be explored; and
- The maturity model does not attempt to model the maturity of a firms relational capabilities, it rather provides a means to transform the relational capabilities of a firm.

1.6. Document structure

The structure of the document reflects the logic that has been followed during the execution of this study. Figure 1.3 graphically displays the chapters as they can be found in the document.

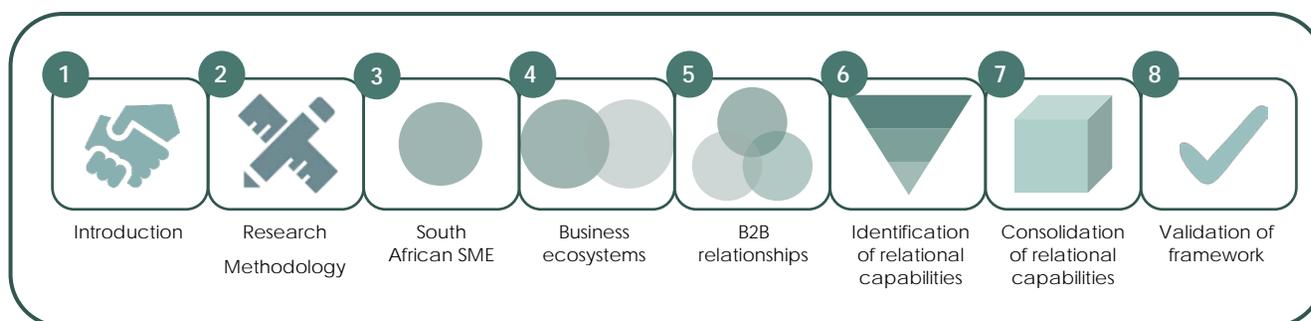


Figure 1.3: Chapter layout in document structure

Chapter 1: Introduction – Chapter 1 introduces the research problem and motivates the need to address the problem. The strategy that is followed to address the problem will be introduced and the research objectives defined. This chapter further introduces the research domains that are relevant towards addressing the research problem. The aim of this chapter is primarily to provide the context for the problem and to create a foundation on which the study is based.

Chapter 2: Research methodology – This chapter provides an overview of the methodology that is followed to conduct the study. The underlying strategy follows a systems engineering approach to problem solving. Mixed methods are employed to execute the strategy and achieve the objectives.

Chapter 3: Small- and medium enterprises in South Africa – Chapter 3 introduces South African SMEs and describes how they are defined in the national context. By shifting the focus towards more

technical and specialised firms, the characteristics that are common to these firms are identified and discussed. This chapter completes the first of the three research domains.

Chapter 4: Business ecosystems – This chapter provides the background information on the structuring and functioning of ecosystems, creating the context for the research problem. It focuses largely on how value is created within ecosystems and specifically on the role that SMEs play in the value creation process. The linkages between firms are identified as key to value creation. Complementary partnerships are thus introduced and briefly discussed to set the foundation for the discussions of B2B relations in the following chapter. This chapter completes the second research domain.

Chapter 5: Business-to-business relationships – This chapter provides an overview of B2B relationships, which is considered to be a core aspect of partnerships. The evolving nature of B2B relationships will be discussed and portrayed in a series of stages. The remainder of the chapter includes relevant theories on B2B relationships to determine the factors that influence the establishment and development of B2B relationships. This chapter completes the final research domain.

Chapter 6: Identification of relational capabilities – Chapter 6 analyses the results from the literature review to identify the capabilities that SMEs require to develop B2B relationships in business ecosystems. The analysis is conducted following the Conceptual framework analysis (CFA) process as proposed by Jabareen (2009). The intermediate goal is to identify the requirements of B2B relationships based on the literature review, which represent the necessary conditions for the relationship to function as desired. These requirements are then converted into the related relational capabilities, which represent the organisational means through which the relationship requirements are addressed.

Chapter 7: Consolidation of relational capabilities – Chapter 7 consolidates the relational capabilities into a framework. The framework has been developed in two parts. The first part aims to construct the framework at a conceptual level. The second part describes how this framework can be transformed into a tool that can be used to guide a South African SME in how to identify and improve the capabilities required to develop B2B relationships in business ecosystems. The tool is developed by using a maturity modelling approach.

Chapter 8: Framework validation – This chapter discusses the three stage validation process used to provide the confidence that the framework delivers on its main objective. This process includes the validation of the individual relational capabilities through a ranking questionnaire; a practical validation through case studies; and a final external validation through interviews with industry experts. The framework is continuously refined based on the outcomes of each validation stage.

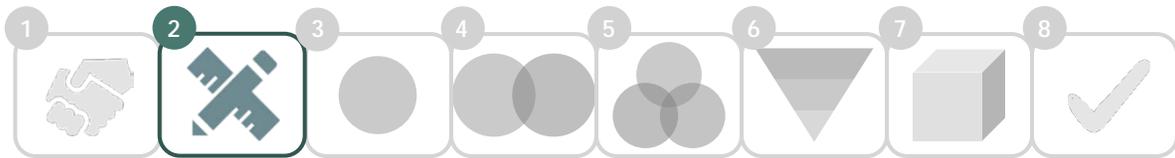
Chapter 9: Conclusion – The final chapter provides a concise overview of the research that has been conducted throughout this study. This chapter concludes the research by briefly discussing the findings of this research and the results that were obtained. Recommendations are made for possible future research.

1.7. Chapter conclusion

This introductory chapter aims to familiarise the reader with the research, and to create the context needed to approach and address the research problem. The research domains that are relevant to the problem are defined and discussed. The chapter further introduces the research strategy, and defines the objectives that guide the problem solving process. The scope and limitations have been defined to create the solution space of this study. The chapter concludes with an overview of the structure of this document. The research methodology employed to develop the research design, are discussed in the following chapter.

2. Research Methodology

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2.2. RESEARCH STRATEGY	16
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This chapter outlines the methodology that is followed throughout the execution of this study. It includes a discussion of the strategy that has been developed to guide the problem solving process. Mixed methods are used to implement the strategy, and consequently reach the research objectives.

2.1. Approaching the research

This section aims to provide context for the type of research by discussing the philosophical perspective employed to conduct this study, as well as the classification of the research type as proposed by Mouton (2013).

2.1.1. Philosophical perspective

Any researcher who is in pursuit of new knowledge, does so from the perspective of existing beliefs or assumptions. This perspective, named the philosophical perspective, represents the nature of the researcher's reality. It essentially defines the starting point for the researcher and determines the path that they choose to extend their reality. For this reason, it is necessary for the researcher to state their philosophical perspective explicitly (Guba and Lincoln, 1994; Ungerer, 2015).

There are four philosophical perspectives that are most commonly employed. Table 2.1 provides a short description of each of these perspectives, summarised from a discussion by Ungerer (2015) and based primarily on the findings of Guba and Lincoln (1994) and Gay and Weaver (2011).

Table 2.1: Summary of philosophical perspectives

Perspective	Description
Positivism	The primary purpose of the research is to verify priori hypotheses. This is done through rigorous testing to determine whether or not empirical support is observed.
Post-positivism	The primary purpose of the research is to falsify priori hypotheses. This is done through rigorous testing to determine whether or not empirical support is observed.
Critical Theory	Critical theory argues that reality is historically moulded through a series of social, political, cultural, economic, ethnic and gender factors.
Constructivism	Constructivism accepts that the researcher is subjective of nature. It is assumed that the researcher and the object of inquiry are inevitably linked.

In order to determine which perspective is most fitting for a particular research problem, it is critical to consider the context of the research objective. The context of this research is centred predominately on SMEs, which can be considered to be a complex system of cultural, process, and technological components that interact with each other. For this reason, this research requires an exploratory approach. The constructivism perspective has consequently been deemed best suited for this research problem. The constructivism perspective accepts that an absolute truth will most likely not be found and it rather aims to provide a more informed and sophisticated truth than the preceding truths.

2.1.2. Classification of research

The classification of different research types enables the researcher to select an appropriate direction for their research, based on specific characteristics of their research project. Mouton (2013) provides a broad classification of research types based on two dimensions. These dimensions include empirical versus non-empirical studies, and the use of primary versus secondary/existing data. The research conducted in this study, makes use of inductive and logical argumentation to support the expansion and refinement of existing theories. For this reason, this study is of a non-empirical nature, primarily through the use of existing data or information. As shown in Figure 2.1, it includes conceptual studies, philosophical analysis and theory and model building.

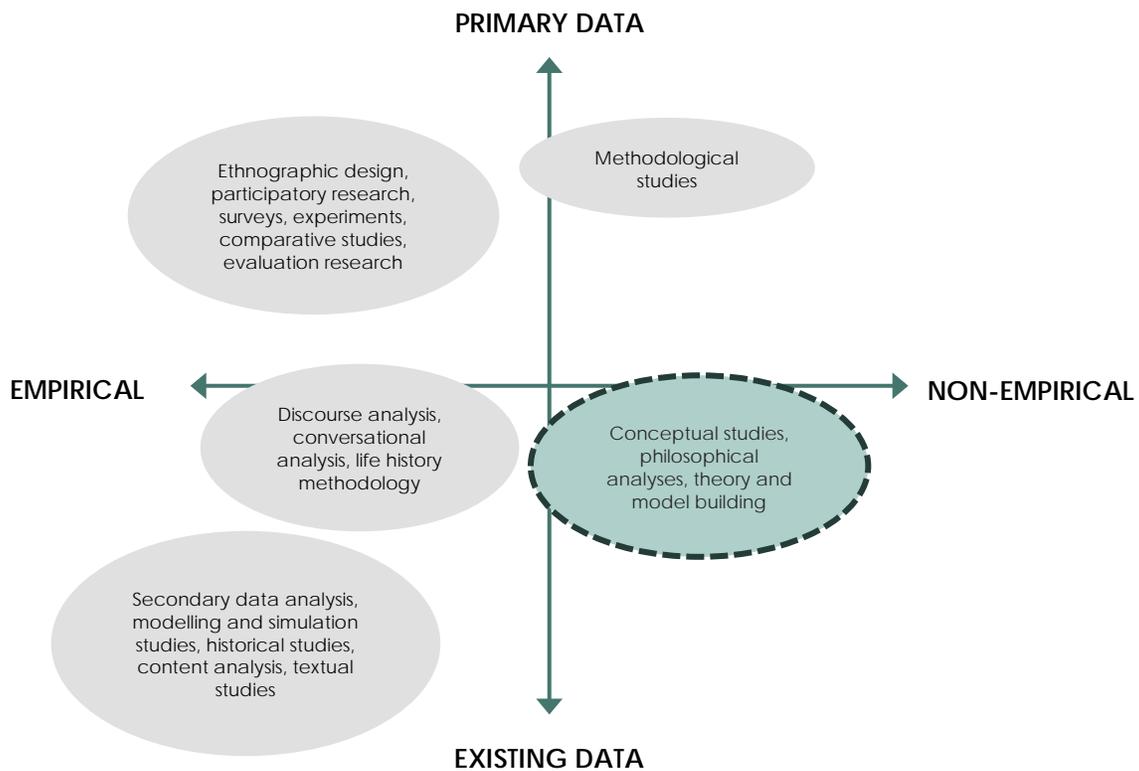


Figure 2.1: Research design map (Mouton, 2013).

A mixed method approach is used to collect the data throughout the study. Secondary, non-empirical data is obtained through completing a literature study. Consistent with the constructivist perspective, the purpose of the literature study is mainly to test for falsehoods in the initial problem construction. Primary data is collected through semi-structured interviews with industry experts. The purpose of the primary data is to fill the unknown gap between theory and the real world.

2.2. Research strategy

Sarantakos (2013) explains that a research strategy guides the way through which a researcher makes sense of the object of inquiry. The strategy should be deployed according to the aims and the objectives of the study, while considering the extent of existing knowledge and the availability of time and resources. Various types of methods to develop a research strategy exist, including experiment, survey, case study, action research, grounded theory, ethnography, and archival research (Saunders, Lewis and Thornhill, 2009). While each of

these methods are able to address different types of research problems, the complexity of the research problem presented in this study desires a more holistic and exploratory approach.

Problem solving methods were considered in pursuit of a predefined method that can systematically guide the solution finding process. Upon that, systems engineering was identified as a rigorous method for developing complex systems by utilising a systematic, iterative and holistic approach (Sage, 1992; Stevens *et al.*, 1998; Ungerer, 2015). Derived from systems engineering, enterprise engineering is a sub-discipline that views enterprises as complex systems that comprise various products, processes, business operations and human capital (Du Preez *et al.*, 2009). As SMEs are a central theme in this study, systems engineering is considered an appropriate method to guide the design of the research methodology.

While problem solving and research methods often reside within different traditions of research development, a clear hierarchy can be developed with the problem solving approach providing the guiding methodology, and the research methods supplying the means to generate answers to specific questions (Yearworth *et al.*, 2013). The hierarchy as developed in the context of this study is displayed in Figure 2.2.

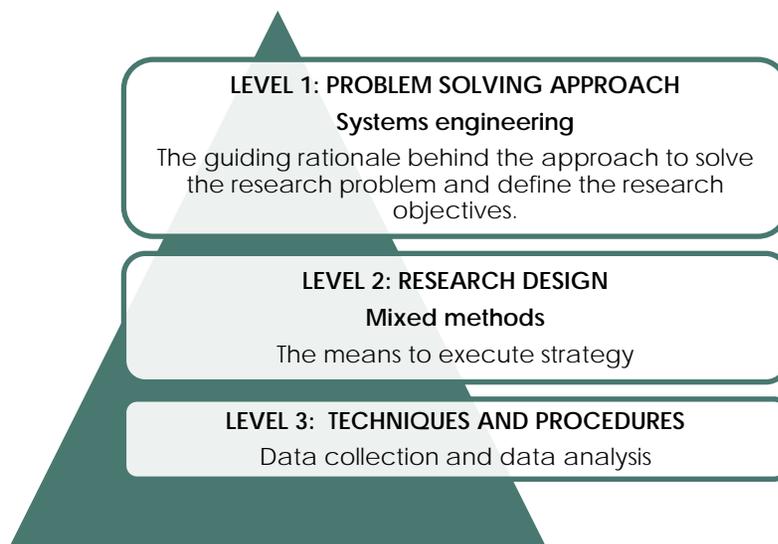


Figure 2.2: Research strategy hierarchy

As displayed in Figure 2.2, systems engineering formulates the high-level strategy that guides the rationale behind the problem solving approach and the research objectives. The strategy is supported by applying various research methods. The research methods are required to supply the means to achieve the research

objectives. The research methods refer to the specific processes that are used to generate the required knowledge.

A systems engineering approach to problem solving is graphically depicted in Figure 2.3. This approach acknowledges that the problem as a whole would be too vast and complex to solve at once. Flood (2010) explains that a better overall understanding of a problem can be gained by viewing the whole problem as a sum of individual parts. Therefore, the problem needs to be systematically broken down into smaller, more manageable sub-problems while keeping its context of the whole problem. Each of the sub-problems can then be solved, also keeping in mind the context of the whole solution. Each sub-solution is evaluated separately, and then pieced together to find the whole solution. Finally, the whole solution can be validated according to the degree that it solves the initial whole problem.

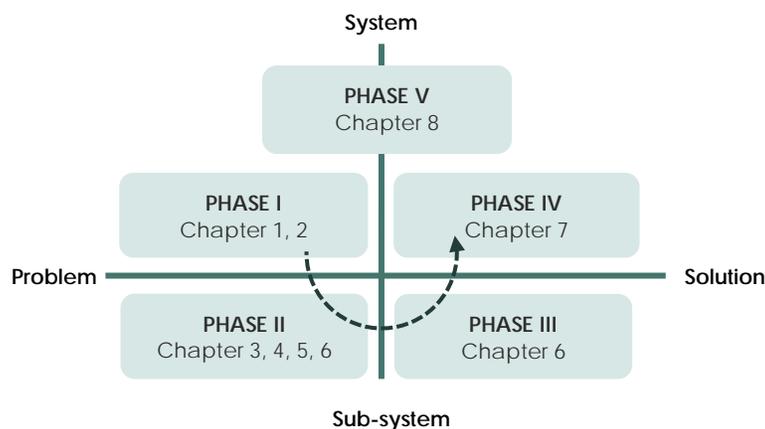


Figure 2.3: Systems engineering approach to problem solving

With regards to the research problem presented in this study, the aim is to identify the individual parts of the organisation that will be involved with the B2B relationships of a firm. Based on the principles of systems engineering, it is predicted that if the firm can improve each (or some) of the capabilities within their organisation, their overall ability to establish and sustain successful B2B relationships will be improved. The capabilities (sub-solutions) are identified by first determining what the B2B relationship in this context needs to achieve (sub-problems). The application of systems engineering is as follows:

- i. **Phase I: Problem definition** – This phase of the systems engineering approach is dedicated to presenting the problem. A deep understanding and comprehensive knowledge of the problem is

required before an appropriate solution can be found. Chapter 1 presents the background and context of the problem, as well as the need for a solution.

- ii. **Phase II: Relationship requirements** – This phase of the systems engineering approach aims to provide the problem in parts. This phase proves to be the most ambiguous part of the process, as the sub-problems first need to be identified. The process is initiated through breaking down the main research problem into sub-research questions. The sub-research questions serve as a guideline to explore the literature that is relevant to the main research problem. Through conducting a literature review that addresses all of the research questions, a large body of literature is assembled that contains considerable information, which is helpful towards achieving the main research objective. The information as it is contained in the literature review is however of an implicit nature. For the information to be used meaningfully, it needs to be made explicit. The explicit knowledge derived from the body of literature thus presents the problem in parts. The sub-problems are in the form of the required relationship conditions.
- iii. **Phase III: Relationship solutions** – This phase of the systems engineering approach seeks to provide solutions to each of the sub-problems that were identified during the previous phase. The problems that were identified are of a specific nature, making the process to address each one relatively straightforward. The sub-solutions are in the form of relational capabilities required by a firm.
- iv. **Phase IV: Framework** – This phase of the systems engineering approach requires the sub-solutions to be integrated into a whole solution. During this phase, the relational capabilities are synthesised into a framework that aims to guide SMEs to identify and improve their relational capabilities. The output of this phase is thus a whole solution to the main research problem.
- v. **Phase V: Evaluation** – The final phase of the systems engineering process determines the extent to which the whole solution provides an answer to the whole problem. This is done through the means of a validation process. In systems engineering, validation refers to whether the developed system is suited for the purpose it is intended for (Shishko, 1996).

2.3. Research design

To execute the strategy as it is described in the section above, the appropriate research methods need to be employed together with certain techniques or procedures to achieve specific outcomes. The research has subsequently been designed in four parts, as displayed in Figure 2.4. The parts include 1) literature review, 2) conceptual framework analysis, 3) conceptual output, and 4) validation. Each part is displayed with the corresponding systems engineering phase, the research objectives, and the chapters where it is included.

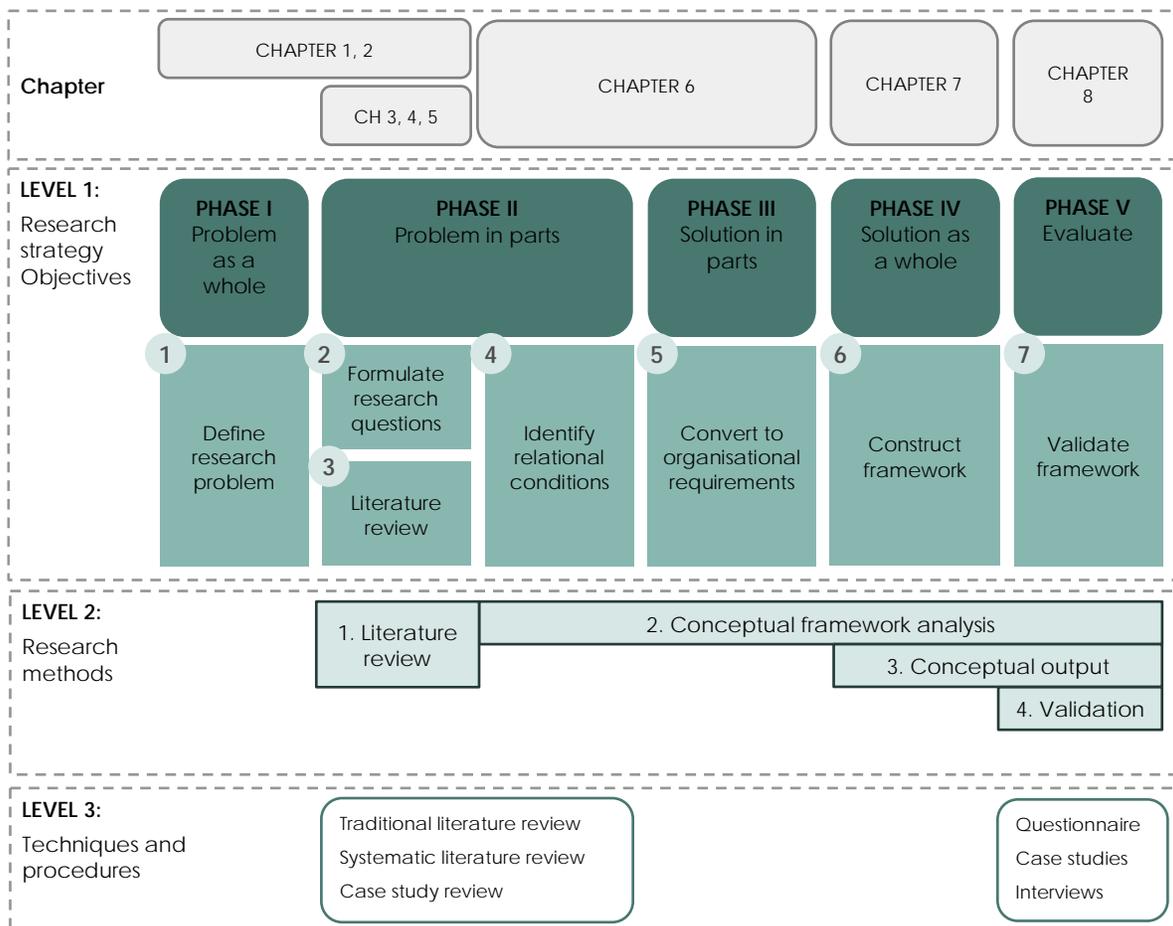


Figure 2.4: Research design structure

As mentioned in the previous section, various research methods exist such as experiment, survey, case study, action research, grounded theory, ethnography, and archival research (Saunders, Lewis and Thornhill, 2009). These methods can be divided into quantitative, qualitative or mixed methods. Quantitative methods are

mostly associated with a deductive approach whereas qualitative methods are mostly associated with an inductive approach. It is however possible to find mixed approaches that look at observable objective facts through the use and manipulation of numbers, and to also look at the perceptions of those that are involved with the facts (Greener, 2008). A mixed method approach was considered to be the most fitting to this research problem due to the fact that it is able to use the “best of both worlds”. The methods are implemented through using various tools and techniques to address specific parts of the research problem. The four parts of the research design are discussed in the following sections together with the methods employed in each part.

2.3.1. Part 1: Literature review

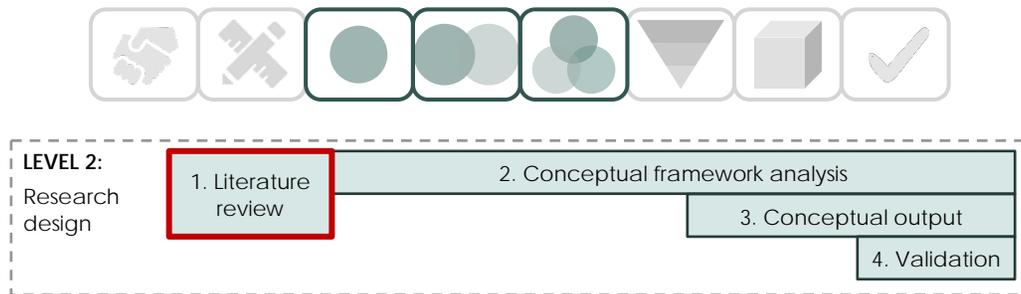


Figure 2.5: Level 2 research design part 1

The following section aims to explain the development of the research domains through the execution of the literature review. The chapters corresponding to each of the domains are structured as displayed in Figure 2.6. As can be seen from this figure, the majority of the chapter concerns the relevant domain while the final part of the chapter introduces the interaction with the domain that follows.

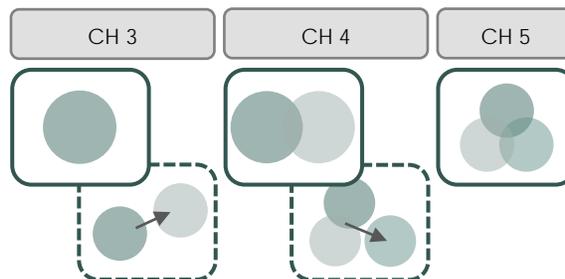


Figure 2.6: Literature review development

Each of the domains has been investigated primarily through an exploratory research approach that is guided by the research questions as it is defined in Chapter 1. The literature review covers a wide body of knowledge. For this reason additional tools and techniques have been applied to assist in parts of the literature review. These procedures include a systematic review and a secondary case study analysis.

2.3.1.1. *Level 3: Systematic review*

The primary motivation behind conducting a systematic review lies in the benefits that this method provides. A systematic review is a powerful means to obtain an objective summary of existing literature concerning a particular topic. This approach highlights where further investigation might be needed by enabling the researcher to identify any gaps that exist in the current research. Furthermore, it enables the researcher to examine the extent to which a given construct is supported or contradicted by the available empirical evidence (Budgen and Brereton, 2006).

The main purpose of the systematic literature review is to provide an exhaustive summary of the literature that is currently available on a specific topic, while ensuring that it remains unbiased (Popay, Rogers and Williams, 1998). Systematic reviews are conventionally understood to have specific characteristics, including (Bonas *et al.*, 2006):

- Addressing pre-specified, highly focused questions;
- Explicit methods for collecting studies;
- Appraisal of studies to determine scientific qualities; and
- Explicit methods to combine findings across a wide range of studies.

The advantages of this method are mainly viewed in its rigour and transparent process (Bonas *et al.*, 2006). The findings of the studies are systematically interpreted against a range of expert criteria that represents the meaning of the work. Judgement-based conclusions are then drawn from the research (Bearman and Dawson, 2013). A sequence of steps are typically defined to perform the systematic review. These steps are displayed in Figure 2.7 (Bearman and Dawson, 2013).

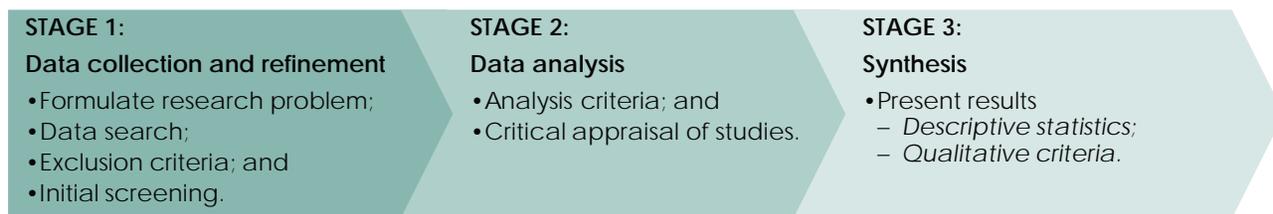


Figure 2.7: Systematic review process, constructed from Bearman and Dawson (2013).

Despite the benefits, it is necessary to acknowledge that systematic reviews have disadvantages, the main disadvantage being the considerable amount of effort that it requires. The methodical approach can be time-consuming when compared to traditional reviews (Kitchenham, 2004). For this reason, a clear and accurate definition of the research problem is required, and it is critical that the scope of the research is determined prior to conducting the review.

2.3.1.2. *Level 3: Secondary case study analysis*

A case study is an investigative approach to understand the dynamics present within individual settings. Case studies are considered to be an appropriate tool in the early phases of a research project when key variables and their interrelations are being explored (Eisenhardt, 1989; Yin, 1994; Gibbert, Ruigrok and Barbara, 2008). Case studies are compatible with different philosophical perspectives and is well suited for exploratory questions such as “how” and “why” (Yin, 1994; Myers and Avison, 1997). Dalmaris *et al.* (2007) explained that a case study is an appropriate tool to investigate a phenomenon that cannot be separated from its context.

Case studies can involve either single or multiple cases and can be conducted at numerous levels of analysis (Yin, 1984). It also often involves various methods of data collection such as interview data, participatory observation derived data, direct observation derived data, and archival data. The data collection methods are based on the required outcome of the case study, where external data is mostly related to obtaining external validation (Gibbert, Ruigrok and Barbara, 2008).

At this point however, the case study analysis forms part of the literature review. This means that the primary purpose of using this tool is not to obtain validation, but rather to understand and explicitly describe relationships between variables and outcomes. For this reason, the case study analysis makes use of secondary archival data that is obtained primarily from web-based sources or secondary articles.

2.3.2. Part 2: Conceptual framework analysis

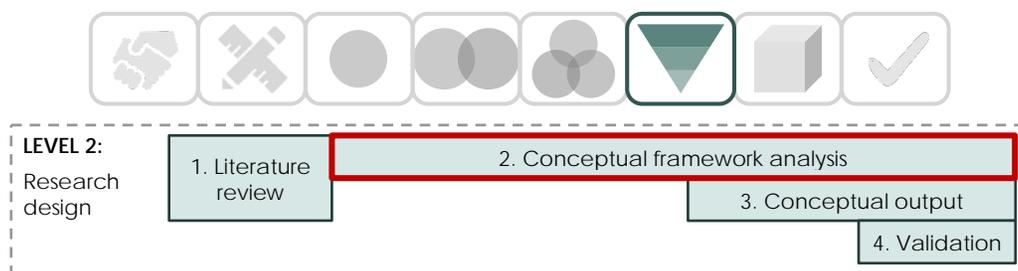


Figure 2.8: Level 2 research design part 2

The second part in the research design aims to convert the implicit knowledge that has been captured in the literature review into explicit knowledge that can be used to construct the framework. Grounded theory is an important mixed method approach that is used to collect and analyse qualitative data. It is a flexible yet systematic method of investigation that requires the reviewer to consistently code the data. Through this process, different categories of data are produced as recurring themes and concepts become apparent. These concepts are ultimately used to form the foundation towards a new theory (Corbin and Strauss, 1990; Allan, 2003; Charmaz, 2006; Greener, 2008).

The principles of grounded theory is the appropriate vehicle to use for the conversion of the implicit knowledge found in the theoretical base into the desired explicit knowledge, as required during Phase II of this study. Jabareen (2009) developed a well-known conceptual framework analysis (CFA) method that is based on the principles of grounded theory. The CFA method is commonly used to build conceptual frameworks from multiple bodies of knowledge that belong to different disciplines (Jabareen, 2009). Due to the ability of the CFA method to clarify conceptual linkages between different domains, it is used to guide the activities during phases II to IV as indicated on Figure 2.4 (p. 20).

Jabareen's 8 step CFA method is adapted to suit the needs of the study, as can be seen in Figure 2.9. The activities of this method will primarily be included in Chapter 6, with the literature review in Chapters 3, 4 and 5 representing the activities of Step 1. While this method includes the synthesis and validation of the framework, these steps should be used prudently, and are thus included in separate parts of the research design.

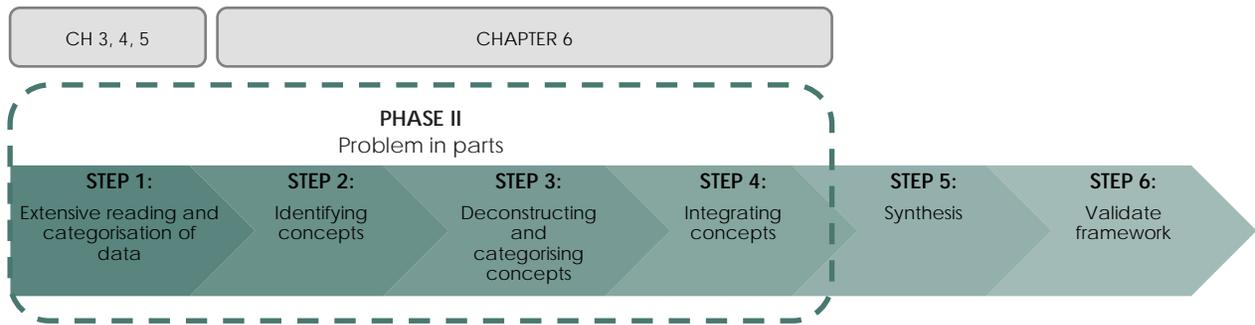


Figure 2.9: CFA method, adapted from Jabareen (2009)

Since the application of CFA will mainly focus on Steps 2, 3 and 4, a short discussion of each follows.

- i. The aim of **step 2** is to read and reread the relevant data to discover concepts. The outcome of this step would be an exhaustive list of concepts that are competing and sometimes contradictory (Glaser and Strauss, 1968; Corbin and Strauss, 1990; Jabareen, 2009).
- ii. **Step 3** aims to deconstruct each of the concepts. This includes the identification of the main attributes and characteristics of each concept followed by the categorisation of the concepts according to these features (Jabareen, 2009).
- iii. **Step 4** aims to integrate and group together similar concepts. The reason for the integration is to reduce the number of concepts and to manipulate it to a reasonable number of concepts (Jabareen, 2009).

After step 4 has been completed, a reasonable number of concepts should have been identified that represents the explicit sub-problems of Phase II.

2.3.3. Part 3: Conceptual Output

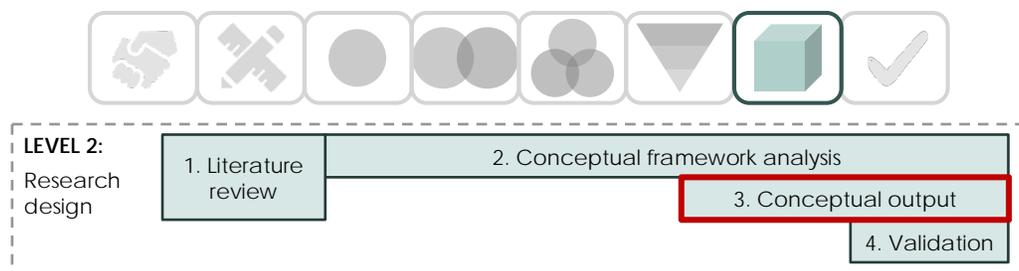


Figure 2.10: Level 2 research design part 3

While the conceptual output is not a research method per se, it is necessary to consider at this point that the intended output of a study influences the direction that the research takes from its initiation. The conceptual output represents the output of the “synthesis” step of Jabareen's (2009) CFA method. Jabareen (2009) however explains that during synthesis the researcher should be “open, tolerant, and flexible with the theorisation process” and that the process is “iterative and includes repetitive synthesis and re-synthesis until the researcher recognises a general theoretical framework that makes sense” (Jabareen, 2009, p. 6).

Based on this explanation, synthesis is an open-ended process with little guidance. This makes it critical to clarify what type of conceptualisation best describes the envisioned output, as it will inevitably influence the process of data collection and analysis (Miles and Huberman, 1994).

Depending on the required output, frameworks are developed at different levels of detail. At a conceptual level, a framework will be able to identify the relevant factors and illustrate how each might affect the desired results. If more detail is required, a framework can be developed at a strategic level to provide goals and objectives to achieve the desired results, and even include the activities necessary to achieve each of the goals or objectives. At an even higher level of detail a framework can provide the logic behind the inputs, expected outputs, outcomes and the impact of each of the activities on the objectives and goals. There is however, no ideal framework as different frameworks are used for different situations (Frankel and Gage, 2007). A framework should be developed at the minimum level of detail that is sufficient to achieve the required output (Nawrocki, Walter and Wojciechowski, 2001). A higher level of detail increases the complexity of the framework and also reduces its transferability.

When considering the type of framework that would be suitable for this particular research problem, it is necessary to clarify what the framework aims to achieve. Considering that the framework developed in this study is targeted as SMEs, it will require high transferability and also low complexity. To ensure that it will be useful to a wide range of users, the framework is developed at a conceptual level. As explained above, a conceptual framework includes the relevant factors but it does not include any specific activities or objectives. This means that the use of the framework is highly dependent on how it is interpreted by the user. For this reason it is necessary to develop a method that guides the application of the framework.

The framework development therefore constitutes two parts. The first which concerns the appropriate structuring into a conceptual framework, and the second which concerns an appropriate methodology needed

to use the framework. During the second part, the framework is essentially transformed into a tool that can be used by an SME. Consistent with systems engineering, it is proposed that the tool is used to analyse the existing state of a firm, identify the problem areas and their root causes, after which a solution is developed that will enable capability improvement. This means that the development of the tool involves an improvement process that takes the capabilities of a firm from an AS-IS state to a TO-BE state.

To achieve this, the tool has been developed according to a maturity modelling approach. While several other methods do exist to achieve the same outcome, a maturity modelling approach has been deemed best suited in the context of the case studies conducted in this study. The use of the maturity model is demonstrated through conducting an illustrative case study as part of the validation process (see following section).

2.3.4. Part 4: Validation

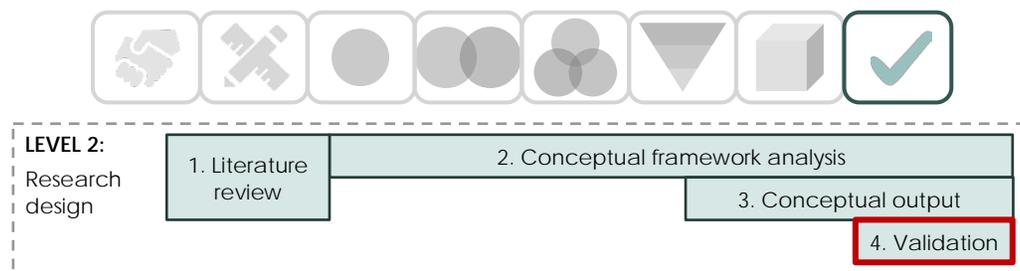


Figure 2.11: Level 2 research design part 4

The final part of the research design aims to validate whether the proposed solution addresses the research problem. The validation, displayed in Figure 2.12, is a three stage process that includes both quantitative and qualitative elements. This process includes conducting a framework ranking questionnaire, an illustrative case study, and a series of interviews with industry experts.



Figure 2.12: Three stage validation process

The framework has to be adapted continuously according to the feedback of the validation process. This is done to ensure that the framework becomes more realistic, useful and resilient.

2.4. Chapter conclusion

This chapter describes the research methodology followed throughout this study. The methodology is based on systems engineering and comprise five phases. The objectives are aligned with the strategy, and are displayed in Figure 2.13. Certain research methods are employed to achieve specific objectives or parts of an objective. The activities of each method and the corresponding objective are also included in Figure 2.13.

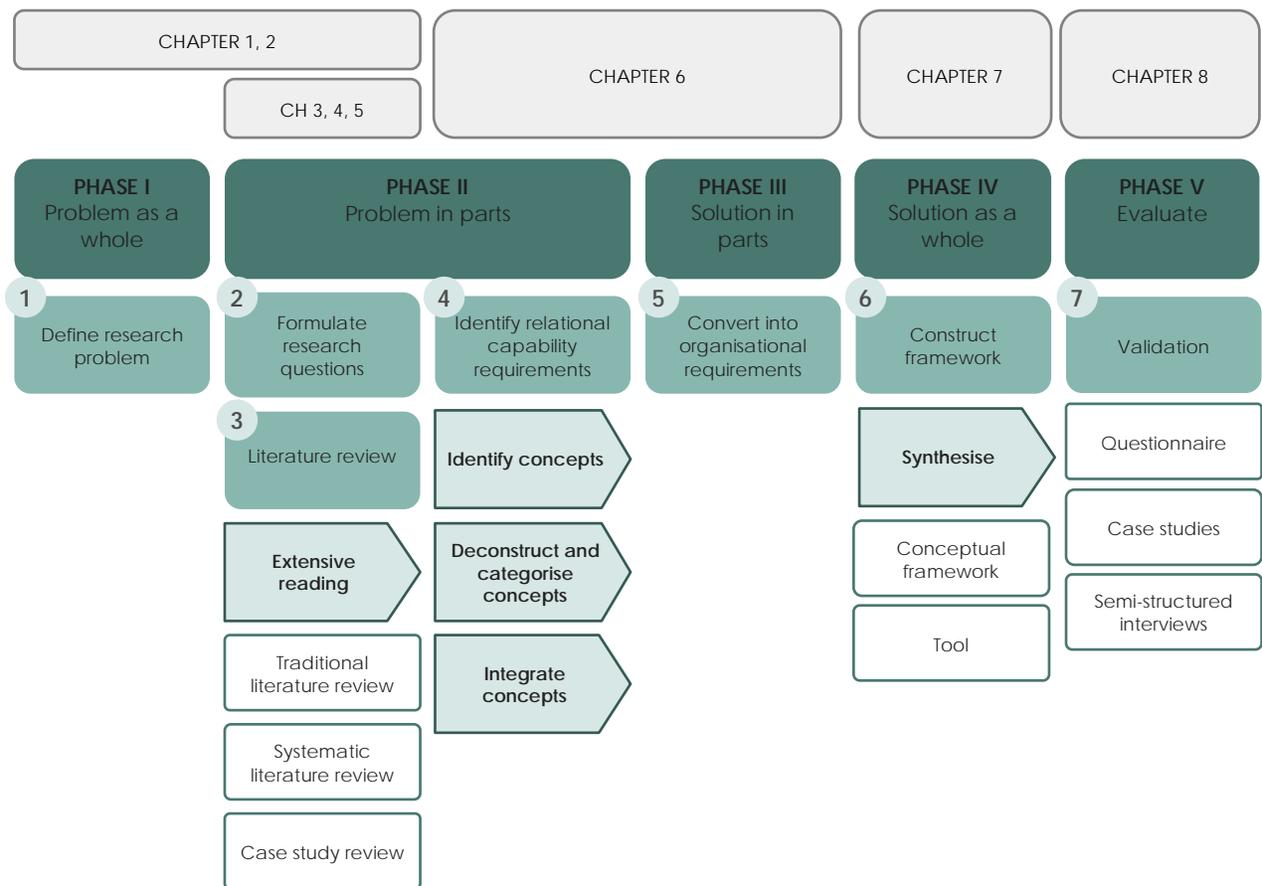
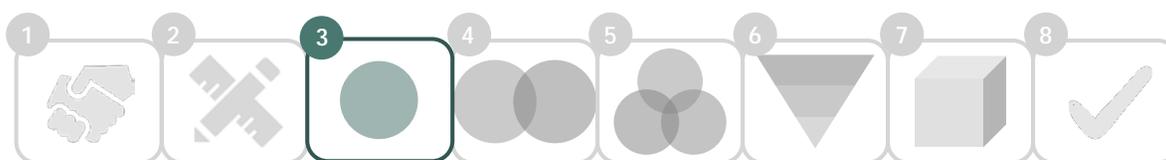


Figure 2.13: Summary of research design activities

3. Small and medium enterprises in South Africa

3.1. THE ROLE AND IMPORTANCE OF SMEs.....	29
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This chapter aims to introduce the reader to small and medium enterprises (SMEs) in South Africa. The definition of SMEs within a South African context will be discussed, along with their role and contribution to the economy. Finally, the characteristics and attributes that are typical of SMEs will be described. The literature reviewed includes studies on entrepreneurship and organisational economics.

3.1. The role and importance of SMEs

SMEs lie at the core of any country's economic development, but particularly so in developing countries. It plays the dual role of contributing to the country's gross domestic product (GDP), while encouraging entrepreneurship and efficiently creating jobs (Storey, 1994; Berry *et al.*, 2002). Evidence supporting the contribution of SMEs to the South African economy varies significantly, but it does provide a broad confirmation of the importance of SMEs in South Africa.

The believed contribution to the GDP varies yearly and ranges between 36% and 57% in the early 2000's (Fatoki and Odeyemi, 2010; Kongolo, 2010), to 45% in 2014 (Kelley, Singer and Herrington, 2015) and 36% in 2015 (Herrington and Kew, 2016).

SMEs are one of the most powerful tools to fight unemployment due to their ability to make jobs available in the private sector. They are believed to be more labour intensive than large firms, which means that the growth of SMEs can result in higher employment levels (Ayyagari, Beck and Demirguc-Kunt, 2007; Dhanah, 2016). SMEs' contribution to employment, range from 56% (Fatoki and Odeyemi, 2010), 61% (Berry *et al.*, 2002), up to 84% (IISD, 2004). In South Africa, where unemployment affects 26.6% of the population, SME development is a critical issue (StatsSA, 2018). In addition to employment, SME development is key to poverty alleviation as it encourages inclusive development and economic decentralisation (Chimucheka, 2013). The achievement of economic and socio-economic objectives can be accelerated by utilising society's resources, which in return increases opportunities to reinvest in society (Cook and Nixon, 2000; Chimucheka, 2013).

SMEs occupy a gap in the economy that larger enterprises do not find attractive, while providing alternative services and support to these enterprises. They can however, also directly compete with their larger counterparts. Competition between SMEs and larger enterprises creates a more competitive economy, improving quality of services and goods produced by both small and large enterprises (Chimucheka, 2013). SMEs have a critical role in their immediate communities as well as in the wider economy. Despite the significant role that SMEs play, they face numerous challenges, resulting in high failure rates and increasing challenging environments.

3.2. Classification of SMEs in South Africa

The term "SME" is used widely and informally to describe the segment of businesses that occupy the space between micro-enterprises and large firms. Beyond that, there appears to be no universally accepted definition of an SME. In multiple cases the government of a country will define SMEs in their own context (Gibson and van der Vaart, 2008).

In South Africa, SMEs are described by The National Small Business act of 1996, amended in 2004, as "a separate and distinct business entity, together with its branches or subsidiaries (if any), including co-operative enterprises and non-governmental organisations, managed by one owner or more" (South African Government, 2004, p. 2). The act further defines SMEs according to five categories, namely, industrial sector and sub-sector classification, size of class, equivalent of paid employees, as well as turnover and asset value - excluding fixed property. The schedule of SME size standards is presented in Table 3.1.

Table 3.1: Size standards of South African SMEs (South African Government, 2004).

Size of class	Total full time equivalent of paid employees	Total turnover	Total gross asset value (fixed property excluded)
Small	1-49	Maximum R13m	Maximum R5m
Medium*	50-200	Maximum R51m	Maximum R13m

*Medium agricultural enterprises are defined as having less than 100 employees.

This definition of SMEs encompasses a very broad range of firms, including formally registered, informal and non-VAT registered firms (DTI, 2008). According to a study by The Small Enterprise Development Agency (SEDA)³ the vast majority of SMEs operate in the informal sector as can be seen in Figure 3.1. Of the 2.2 million SMEs, most are found in the domestic trade and accommodation sector, followed by the community, social and personal services sector, as displayed in Figure 3.2. The total number of SMEs operating per industry accounts for 39% of GDP. When only SMEs operating in the formal sector are considered, the correlation increases to 78%. When only SMEs operating in the informal sector are considered, the correlation decreases to 28% (SEDA, 2016).

³ The estimation is based on the Quarterly Financial Labour Survey (QFLS) published by StatSA (www.statssa.gov.za).

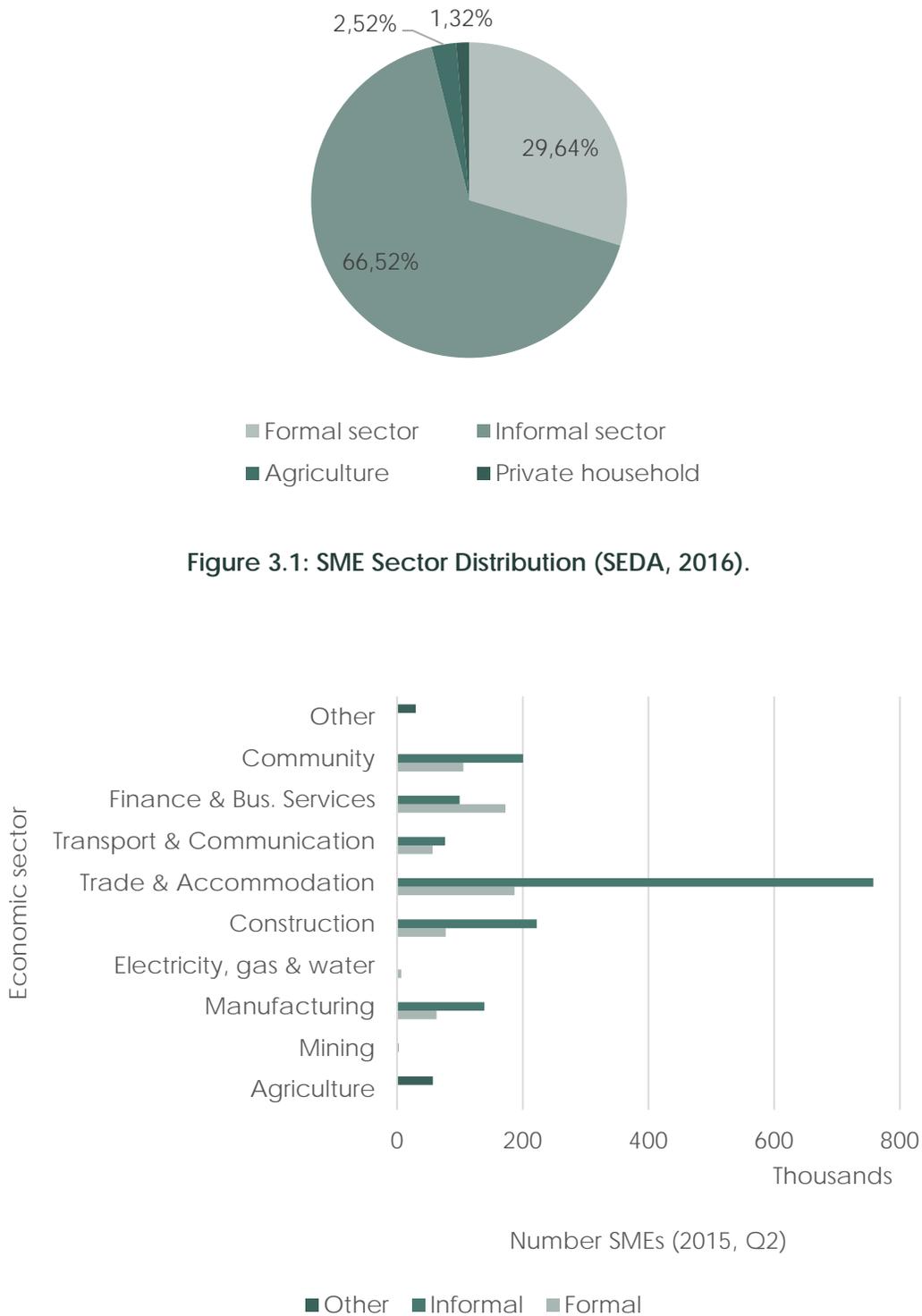


Figure 3.1: SME Sector Distribution (SEDA, 2016).

Figure 3.2: SME Industry Distribution (SEDA, 2016).

Surveys by Krause and Schutte (2015)⁴ and Cant and Wiid (2013)⁵ confirmed that most South African SMEs are owner-managed. According to SEDA (2016), the majority of SME owners have some level of secondary education. Figure 3.3 displays the opposite trends for education in formal and informal SMEs. The majority of formal SME owners have obtained a tertiary education, while the majority of informal SME owners have less than a secondary education. Figure 3.3 also indicates that SME owners with only a primary education or less operate mostly in the informal sector.

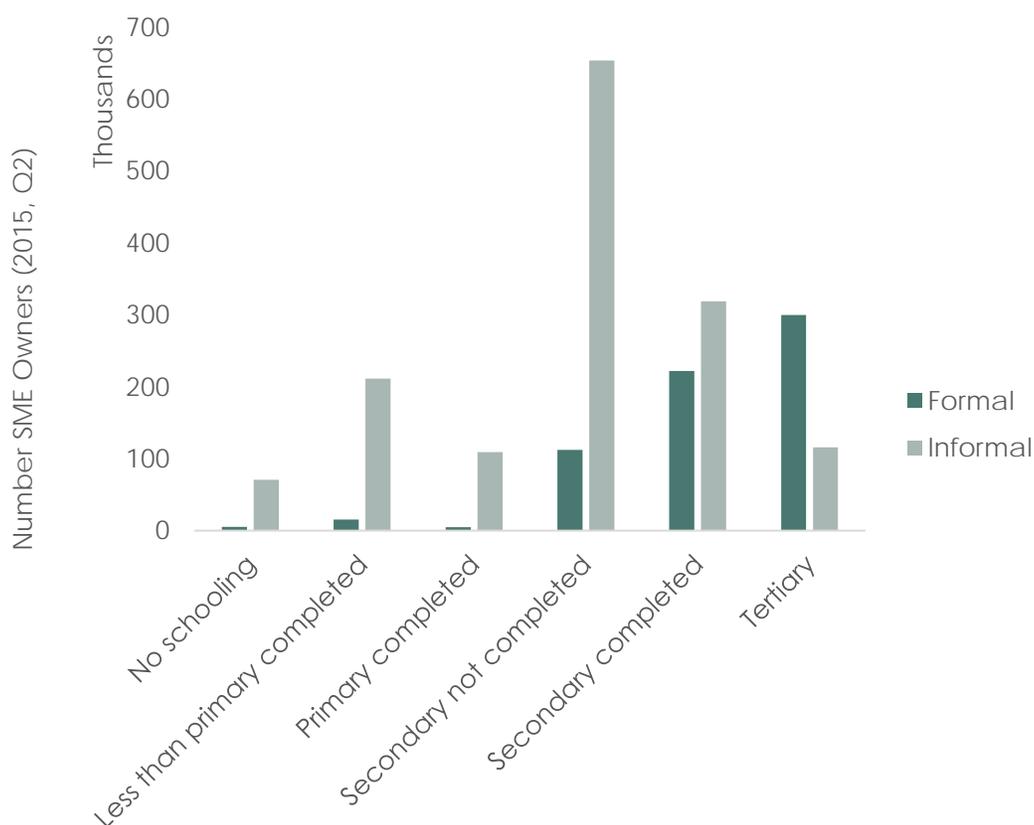


Figure 3.3: SME owners per education group (SEDA, 2016).

⁴ 531 people were reached through various SME business groups on the professional online platform LinkedIn (www.linkedin.com). The qualified response rate was 15.9%.

⁵ A survey done on 81 respondents in the Tshwane area, in the Gauteng province of South Africa.

3.3. The common characteristics of SMEs

SMEs as they are described in the section above, include a wide range of firms with very different attributes. This makes it difficult to describe an internal structure that is common to all SMEs. It is however important to understand the characteristics of the internal structure and organisation of an SME to determine the implications on their position within business ecosystems. As discussed in Chapter 1, this study focuses particularly on the more technical and specialist SMEs. By limiting the focus to this type of SME, it is possible to identify certain characteristics that these SMEs share.

The characteristics inherent in these SMEs set them apart from their larger counterparts. While it provides them with an advantage to form and sustain meaningful partnerships, it is often also one of the biggest sources of friction (Blomqvist, 2002). It is thus believed that if these inherent characteristics are properly understood, much of the friction could be addressed or avoided and it could instead become a source of synergistic benefits. Du Preez *et al.* (2009) suggests a top-down approach to understand the characteristics of a firm. This approach is able to provide a holistic representation of the internal organisation. Starting on a strategic level, this approach also informs the exploration and analysis on the lower levels. As a reference for the analysis, the Adaptive Enterprise Reference (AER) Model™ has been identified as a suitable model due to its simplicity and comprehensiveness. The AER Model is displayed in Figure 3.4 together with the top-down approach.

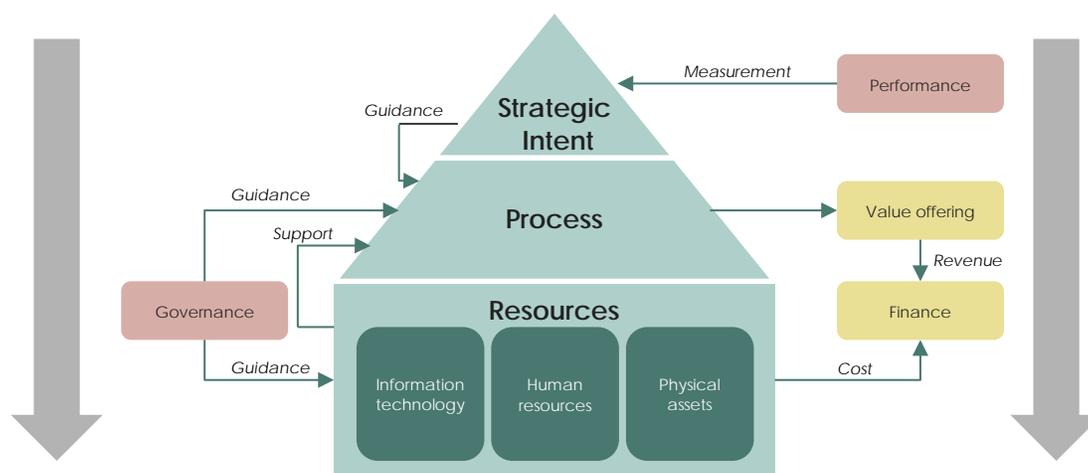


Figure 3.4: Top-down analysis approach (Du Preez et al., 2009).

3.3.1. Strategic intent

According to du Preez *et al.* (2009), the strategic intent of a firm is the management response to sometimes conflicting external demand. The strategic intent provides the direction for growth and establishes the goals and targets.

3.3.1.1. *SME management*

Small businesses are mostly characterised by the influence of the owner-manager. The significant impact of the owner-manager means that the management process is much more dependent on the individual's general demeanour compared to large firms. As a result, the many findings of entrepreneurship theory, which refer to single persons, can be applied to SMEs (Freiling, 2008). Researchers argue that the management is therefore heavily dependent on the bearing of an owner-manager, and the dominant beliefs driving an entrepreneur (Prahalad and Bettis, 1986; Storey, 1994; Beaver, 2002).

Entrepreneurial behaviour can be conceptualised as psychological characteristics of an individual (Stevenson and Jarillo, 1990). Entrepreneurship is thus often described by the willingness and inclination to take risks, as well as being innovative and open to change (Georgelli, Joyce and Woods, 2000; Covin and Slevin, 2008). Puumalainen (1998) explains that both entrepreneurs and managers highly value achievement, however managers focus on the risk inherent in entrepreneurship more so than entrepreneurs. This means entrepreneurs could be described as less risk averse. Small firm owner-managers or entrepreneurs are thus characterised as those willing to take risks in order to obtain their goals (Blomqvist, 2002). In an analytical study of small business managers by Hyrsky (2000), characteristics such as work commitment, energy, economic values and results, innovativeness, risk taking, ambition, as well as achievement have been identified as dimensions of entrepreneurship (Sadler-Smith *et al.*, 2003).

In small firms, top management usually has a greater interest and control through ownership. This means that they are more involved with operations across the different business functions. There is usually a stronger personal relationship between the manager and the employees and greater transparency with regards to their strengths and weaknesses. The managers often have a better understanding of the business activities and processes, and are thus able to perform these better (Berg and Harral, 1998; Zaheer, Rehman and Ahmad,

2006). Greater transparency and closer personal relationships consequently enable faster and more efficient internal communication in smaller firms (Bos-Brouwers, 2010).

3.3.1.2. *Culture*

The owner-managers of smaller firms have a direct influence on the organisational culture due to their personal involvement. Culture can be defined as the patterns of shared values and beliefs that explain the organisational functioning and the norms of behaviour (Deshpande and Webster, 1989). Entrepreneurial management promotes a culture of creativity, communication and risk taking (Sadler-Smith *et al.*, 2003). As a result, high motivation and a “teamwork” atmosphere is cultivated in small firms (Oakey, 1991). Small firm culture can be described as more informal, however it does not necessarily mean it is more relaxed. The informality of small firm culture does not necessarily translate into indifference or incompetence (Zaheer, Rehman and Ahmad, 2006).

Ettlie, Bridges and O’Keefe (1984) explain that firms with more informal cultures may have an advantage in terms of radical innovations. Radical innovation projects require for team members to have the freedom to generate ideas that are different from existing practices. In order for firms to be able to develop new products at a fast pace, they would require a lightweight team structure and a culture which encourages learning rather than control (Clark and Wheelwright, 1992; Levy and Powell, 1998; Pullen *et al.*, 2009). In many small firms, work time and free time traditionally have been combined more flexibly, which also contributes to increased flexibility within the firm (Blomqvist, 2002).

3.3.1.3. *Strategy*

Kotey and Meredith (1997) explain that the personal values of the owner-manager are empirically related to business, strategies, and enterprise performance. According to Knight (2000), the strategy of a firm reflects both the short and long-term responses to challenges and opportunities in the external business environment. Strategies are deployed to attract customers and deal effectively with environmental concerns such as competitors, suppliers, and resources. Entrepreneurial orientation is associated with strategies that are focused on opportunity seeking and risk taking (Knight, 2000; Sadler-Smith *et al.*, 2003).

Planning and strategizing procedures are often not executed formally. This however does not mean that planning does not take place. Instead, it is practiced in a more informal manner which, in turn, is typically more

effective in small business settings (Freiling, 2008). Speed and flexibility is emphasised over planning (Brady, 1995). This is possible due to shorter decision chains, rapid decision-making, rapid and effective internal communication, and the ability to adapt quickly (Vossen, 1998; Sullivan-Taylor and Branicki, 2011).

The lack of long-term strategy however, may result in a lack of long-term capability planning and development. The general criticism of small firm strategy has been that it is too focused on short-term goals and the use of immediately available funds. Consequently, strategically poor choices can sometimes be made. This can negatively impact a small firm's ability to remain competitive and sustainable in the long-term (Blomqvist, 2002).

3.3.2. Organisational structure

According to du Preez *et al.* (2009), the organisational structure is the formal structure defined by management in pursuit of strategic intent. One of the main characteristics attributed to SMEs is a flexible organisational structure. Flexibility can be described as the ability to change direction rapidly or to have the ability to do something other than that which was originally intended (Evans, 1991; Eardley, Avison and Powell, 1997). The reason for the flexibility in SMEs is manifold. Firstly, the flexibility can be attributed to the role of management and their considerable knowledge about the firm's capabilities. Secondly, management teams are mostly small and they work together closely on a day-to-day basis. As a result, SMEs tend to have a flat management structure with an absence of bureaucracy (Gupta and Cawthorn, 1996; Levy and Powell, 1998). Other reasons cited for flexibility include smaller personnel numbers and greater transparency (Zaridis and Mousiolis, 2014).

Due to their flexibility, small firms are more easily able to adapt to environmental changes and absorb new technologies (Fu and Robertson, 2000). The organisational flexibility enables them to respond quickly to changing market and customer needs (Landau, 1987; Levy and Powell, 1998). It also increases work pace, and affords a competitive edge in developing innovative products with shorter life cycles (Blomqvist, 2002).

3.3.3. Organisational processes

The process architecture addresses the consolidation and optimisation of the business processes throughout the firm. It describes the process in terms of inputs, outputs, governance and enablers (Du Preez *et al.*, 2009). In small firms, the organisational processes are often simple and rarely clearly structured. Process descriptions

and documentation are often underdeveloped, and the codification of knowledge in the form of blueprints may not be sufficiently emphasised. As a result, small firms often encounter problems when employees change positions or leave the firm. At the same time, small firms have informal routines which are more difficult for external parties to recognise (Venkataraman *et al.*, 1990; Nelson, 1991).

The entrepreneurial orientation means that SMEs often have a capacity for changing business processes and innovating new products and services (Georgelli, Joyce and Woods, 2000). SMEs often however, do not have a well-equipped R&D department or specialised R&D personnel. Instead, innovation is cultivated in SMEs as the owner-managers as well as employees rethink the given processes and products more frequently and fundamentally. Due to the limited structural complexity, they have more control over major issues concerning the company, regardless of the lack of R&D capacity (Freiling, 2008).

3.3.4. Resources

Firms require various information technology resources, human resources and physical assets to function effectively. Small firms however, are known to be severely constrained in terms of resources with researchers pointing specifically to a lack of financial resources (Keizer, Dijkstra and Halman, 2002; Garengo, Biazzo and Bititci, 2005; Laforet and Tann, 2006; Woschke, Haase and Kratzer, 2017). The resource constraints in small firms may limit their ability to carry out innovations (Halme and Korpela, 2014). As a result, they are often dependent on external resources (Segers, 1992). Small firms are often required to finance their innovations and R&D primarily with loan funding and available subsidies. The lack of finance together with the heavy and risky investments in R&D, can make the small firm more vulnerable during the subsequent product launch and marketing phase (Venkataraman *et al.*, 1990).

Due to the strong focus on innovation, other areas like marketing or organisational development often receive less attention. Small firms may also lack marketing skills due to the technical background and orientation of their core personnel (Schein, 1996). Additionally, due to resource constraints, small firms usually do not offer a large product and service variety. They often maintain a more limited scope in terms of products or services, customer base and geographic market. Focus enables them to master the few products and services on offer (Landau, 1987; Zaheer, Rehman and Ahmad, 2006).

3.4. The challenges that SMEs face

South Africa is regarded as a country with a relatively challenging environment for business start-ups, as it is ranked in the bottom 32% in the World Bank Starting a Business Rating (Herrington and Kew, 2016). Of all the Global Entrepreneurship Monitor (GEM)⁶ participating developing countries, South Africa's small businesses have the lowest probability to survive beyond 3.5 years (Wood, von Broembsen and Herrington, 2005). It is estimated that as much as 75% of new businesses will not survive the first two years of operation in South Africa (Fatoki and Odeyemi, 2010).

The reasons for South African new businesses to fail are many and varied. These include challenges in both the macro and micro environments. The main challenges and difficulties faced by South African SMEs, as discussed and summarised by Kennon (2017) are included in Table 3.2.

Table 3.2: Challenges of South African SMEs

Challenge	Description
Access to finance and credit	<p>Lack of access to finance and poor profitability are among the main reasons for business failure in South Africa (Herrington, Kew and Kew, 2014). Due to the conservative nature of South African banks and lenders, resources for small businesses are often only available in later stages of development (FSB, 2007). Some of the reasons contributing towards the reluctance of early stage SME finance include inadequate collateral, lack of credit history, the inability to produce an adequate business plan, poor market research and the lack of access to markets (FSB, 2007; Herrington, Kew and Kew, 2014; SEDA, 2016).</p> <p>Finance enables SMEs to hire high quality employees, purchase required equipment and technologies and have sufficient cash flows. However, managerial competency is required to effectively source, manage and allocate funds (Fatoki and Odeyemi, 2010; Chimucheka, 2013).</p>

⁶ GEM is a comprehensive study of entrepreneurship that includes the data of more than 100 countries (www.gemconsortium.org)

Challenge	Description
Managerial competencies, education and training	<p>Managerial competencies can be described as sets of knowledge, skills, traits, attitudes, values and other personal characteristics that contribute to personal effectiveness (Abraham <i>et al.</i>, 2001; Hellriegel <i>et al.</i>, 2008). The managerial competencies of the owner-manager are very important to the survival and growth of SMEs (Fatoki and Garwe, 2010). Researchers have however, found that a lack of managerial experience, skills and expertise in functional areas such as marketing, human resources and finance are some of the main reasons why SMEs fail (Martin and Staines, 1994; Brink, Cant and Ligthelm, 2003; Cant and Wiid, 2013).</p> <p>In South Africa, the lack of education and training in business management negatively affects management capacity in firms (Brink, Cant and Ligthelm, 2003; Turton and Herrington, 2012). This is one of the reasons for the low level of entrepreneurial creation and the high failure rate of newly established SMEs (Fatoki and Garwe, 2010). Management competencies which are lacking include the ability to set strategic goals, plan forward, as well as the willingness to seek advice and commitment (Cant and Ligthelm, 2002; Brink, Cant and Ligthelm, 2003).</p>
Market information	<p>Information has long been regarded as a very important aspect of an informed decision-making process (Mutula and van Brakel, 2006). Information concerning a firm's customers and competitors is a powerful resource that is critical to enable the development of market orientation (Narver and Slater, 1990). Firms are required to continuously gather information on customer needs and competitor capabilities. Furthermore, they are required to analyse and utilise the information to their advantage (Slater and Narver, 1998).</p> <p>In order for SMEs to benefit from valuable information, they need the capacity to leverage information as a resource (Forgionne, 1991; Drucker, 1993). Mutula and van Brakel (2006) note that access to timely, current, relevant and adequate information is one of the most notable obstacles limiting SMEs. SMEs are confronted with this struggle because they either do not understand what relevant information is needed, or they do not have the ability to obtain it.</p>
Access to markets	<p>Marketing is one of the fundamental concepts which is not always employed effectively within SMEs (Brink, Cant and Ligthelm, 2003). Van Scheers (2011) expressed that one of the greatest needs of SME owner-managers is to understand and develop marketing strategies for their products and services. This includes research on markets and competition, product demand, customer needs, pricing strategies, as well as product variety and branding. SME owner-managers often lack the time or funds to invest in</p>

Challenge	Description
	research to establish their target market, customer trends and general marketing campaigns (Van Scheers, 2011; Cant and Wiid, 2013).
Government legislation and lack of support structures	<p>The success and growth of SMEs are affected by the wider social, economic, political and institutional context over which the government has a major influence (Smallbone and Welter, 2001). While the government provides various support incentives, the majority of SMEs are not aware of the government incentives that are available to them (Maas and Herrington, 2006).</p> <p>There are various legislations, costs and taxes related to the registering and licencing of businesses which are large inhibitors to success. In addition, the low quality of basic infrastructure like transportation, telecommunication and electricity can affect the growth prospects of SMEs (Fatoki and Garwe, 2010).</p>
Location	The location of firms has been found to have a large impact on innovation performance, rates of growth and survival (Gilbert, McDougall and Audretsch, 2008). The physical proximity to markets and access to technology and infrastructure has an impact on the success of a firm in a number of ways. This includes the identification of promising opportunities and access to the resources necessary to exploit those opportunities (Dahl and Sorenson, 2007; Fatoki and Garwe, 2010).
Crime	Crime that target businesses are increasing. Moreover, most business-related robberies were on small firm premises (McDonald, Schlemmer and Rankin, 2008). Due to the high incidents of crime, firms are focusing on the safety of not only goods but customers and staff as well. As a result, firms are incurring huge costs to invest in security measures to eliminate or minimise the likelihood of crime (Fatoki and Garwe, 2010; Cant and Wiid, 2013).
Access to technology	It is becoming increasingly important for firms to invest and stay up date with continuously developing technology (Chimucheka, 2013). Technology plays a critical role in the development of new SMEs by enabling them to evolve a multi-pronged strategy, maximise business opportunities and increase sales (Fatoki and Garwe, 2010). SMEs however, often do not have their own IT department. This means that it remains the responsibility of the owner-managers to assess the various technologies with regard to their technological maturity and business potential. As a result, SMEs frequently encounter difficulties to select the right technological solutions (Schröder, 2016). Furthermore, the use of technology often involves high costs due to the fact that both the correct hardware and software is required and need to be properly installed (Chimucheka, 2013).

Challenge	Description
Economic activity	Economic variables such as the fiscal and monetary policies of the government, inflation, interest rates and foreign exchange rates influence the demand for goods and services and hence the growth of SMEs (Ehlers and Lazenby, 2007). In South Africa, the economic environment is characterised by high interest rates, low growth rates, high inflation rates and declining exchange rates. This has a direct impact on most sectors as it affects suppliers, raw materials and the customers' ability to purchase goods and services (Fatoki and Garwe, 2010).

3.5. SMEs in ecosystems: a systematic review

The following section zooms in on how the domain of SMEs interacts with the domain of business ecosystems, as displayed in Figure 3.5.

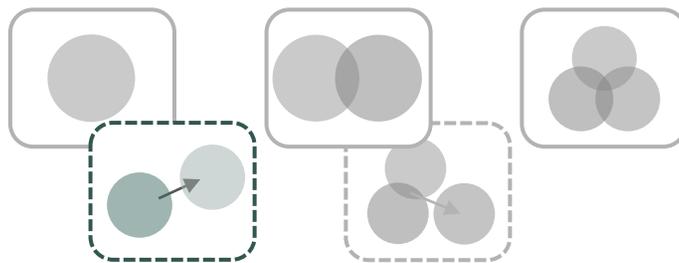


Figure 3.5: Section 3.5 in literature review development

To determine where these domains begin to overlap, a systematic review has been conducted. The primary motivation behind using a systematic review at this stage is due to its ability to summarise the existing evidence within a field, while identifying the research gaps that may exist. This is achieved through identifying and interpreting all of the research pertaining to a specific field. The results of this systematic review would be used to indicate the direction which the research should take. The steps of the systematic review followed in this section are displayed in Figure 3.6 (Bearman and Dawson, 2013).

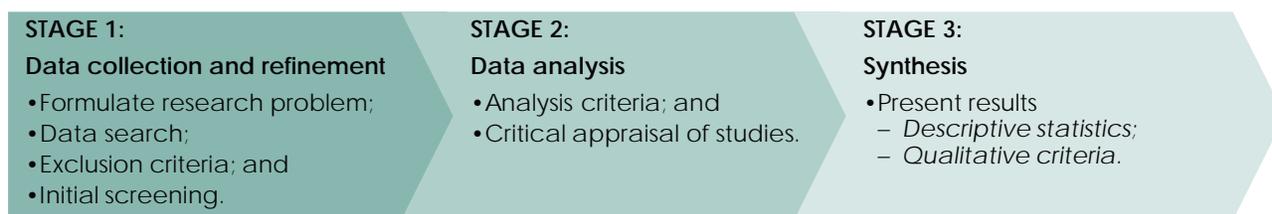


Figure 3.6: Systematic review process, constructed from Bearman and Dawson (2013).

The execution of the systematic review, together with the results, will be discussed in the following section.

3.5.1. Stage 1: Data collection and refinement

The first stage of the systematic review serves to focus on the search and select of relevant literature works. Data has been collected through the use of the web based service, Scopus®.⁷ The search was completed by using a combination of the keywords “business ecosystem” and “SME”. Table 3.3 includes a summary of the criteria used to collect the relevant data.

Table 3.3: Systematic review data collection criteria

Criteria	Description
Search engine	Scopus
Latest search date	31 May 2017
Search terms	“SME” + “business ecosystem”; “Small business” + “business ecosystem”; and “Small firm” + “business ecosystem”.
Publication types included	Academic journals and conference papers
Publication types excluded	Magazines and news articles
Other excluding criteria	Foreign language papers; inaccessible papers; papers not relevant to topic; and repetitive papers
Initial search yield	38
Result	Results included in Appendix B

Figure 3.7 illustrates the data selection and filtering process. As can be seen from this figure, the initial search delivered a total of 38 documents. Documents that were not English, or documents that were inaccessible or

⁷ www.scopus.com

repetitive, were immediately excluded from the study. The remaining documents were screened to determine whether or not they were relevant to the scope of this study. This was done through an examination of the main heading and abstracts of each document. Through this process a total of 6 documents were considered to be irrelevant to this study.

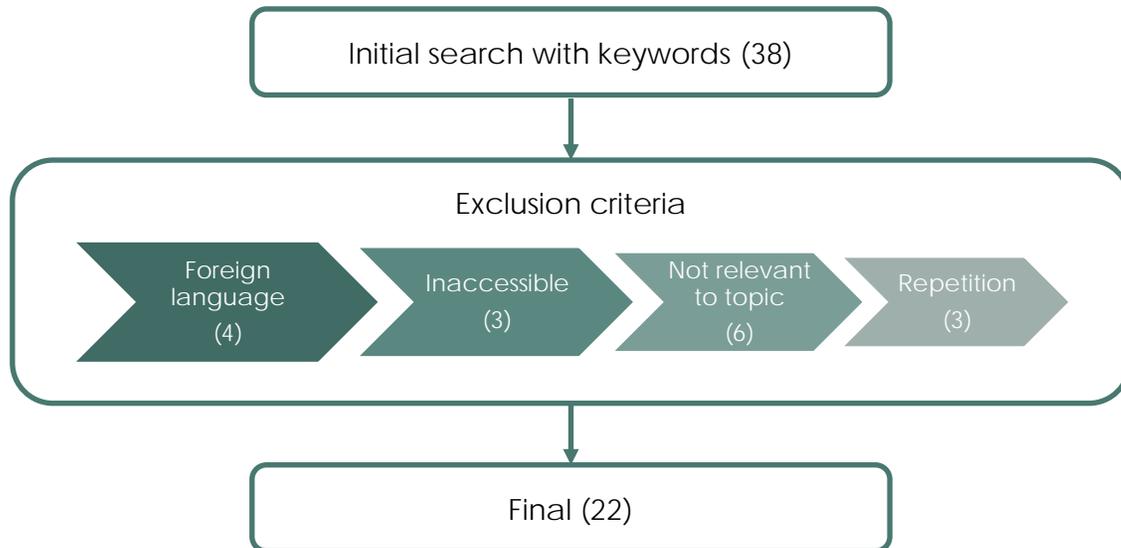


Figure 3.7: Data filtering methodology

After these documents have undergone the screening process, the final dataset has been reduced to 22 documents. These 22 documents formed the subject of analysis in the remainder of the systematic review process.

3.5.2. Stage 2: Data analysis criteria

After the initial screening process displayed in Figure 3.7, the final 22 documents were critically analysed according to the categories described in Table 3.4. The data analysis criteria were broken up into two sections namely 1) descriptive statistics, and 2) qualitative criteria. It is necessary to note that the qualitative criteria have been developed through an iterative process, while the documents were critically analysed. At the start of the systematic review, it will not be possible for the reviewer to know what the content of the dataset would entail. This means that the criteria evolve as the reviewer becomes more familiar with the documents and the subject matter.

A qualitative data analysis and research software package, *Atlas.ti*[®], was used to assist in this process. *Atlas.ti* enables the reviewer to extract specific data through the coding of the documents. Coding refers to the assignment of a specific code to a piece of literature within a publication. The 22 studies included in the review were individually coded in order to standardise the information contained in the studies and to assist in the identification of trends in the literature. The main aspects of the articles that were coded were included in Table 3.4. A summary of the results are included in Appendix B.

Table 3.4: Data analysis criteria

Main category	Component
Descriptive statistics	<ul style="list-style-type: none"> • Title of document; • Author(s); • Year document was published; • Document type; • Document source; • Citations; and • Geographic focus of study.
Qualitative criteria	<ul style="list-style-type: none"> • Perspective of analysis; • Layer of ecosystem addressed; and • Application level of detail.

3.5.3. Stage 3: Synthesis

The results of analysis of the papers according to the criteria described above will be discussed in the proceeding sections.

3.5.3.1. *Descriptive statistics*

The empirical elements of each publication include the year it was published, publication type, citations and geographical area of focus. The industries on which the publications focus, cover a broad range, however each publication has been selected due to a specific focus on SMEs. The reviewed publications are strongly technology-oriented. Due to the rapid pace of technology change, new technological solutions are developed at a fast pace, while existing technological solutions can quickly become outdated. For this reason, the timeline of the publications must be taken into account.

The timeline of the papers displayed in Figure 3.8 indicates that more than 50% of the papers were written in 2011 or before. From a technological point of view the publications are not that recent, however the non-technological components have remained consistent and relevant. It is also important to note the differences in technological capabilities between developed and developing countries. Lundvall (1992) explains that the technological capabilities of a country are composed of a variety of sources of knowledge and of innovation. The integration of new technology systems requires the mastering of previous technologies to allow the competencies to be built cumulatively (Pavitt, 1988; Bell and Pavitt, 1997). While the technological capabilities vary severely between countries, developing countries are generally lagging behind developed countries in this regard (Archibugi and Coco, 2004).

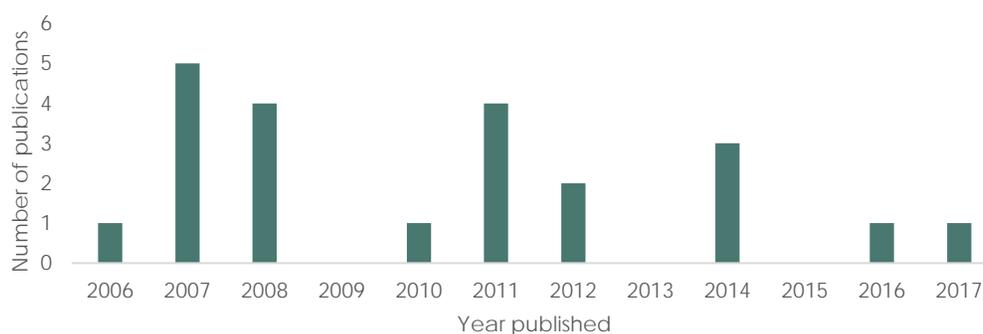


Figure 3.8: Timeline of publications

Figure 3.9 displays the geographical areas where the publications are focused. Some of the publications are country-specific, focussing on SMEs in countries such as Finland or Hungary. Other publications include a wider scope by focusing on, for example, European SMEs. Lastly, 9% of publications are not location specific and describe SMEs from a global perspective. From this figure it can be seen that the minority of the publications are focused on SMEs in developing countries. SMEs in developing countries such as South Africa, often experience considerable technological constraints. This means that more modern solutions may be inaccessible. However, 'outdated' technological solutions should not be disregarded, and can even prove to be valuable to South African SMEs. At the same time, the notion of technological leapfrogging could also be considered. This refers to the concept of emerging countries that are able to bypass the resource intensive and expensive stages of technological development, by skipping to the most advanced technologies available (Gallagher, 2006; Amankwah-Amoah, 2015). In effect, the possibilities with regards to technological development in developing countries are on the increase.

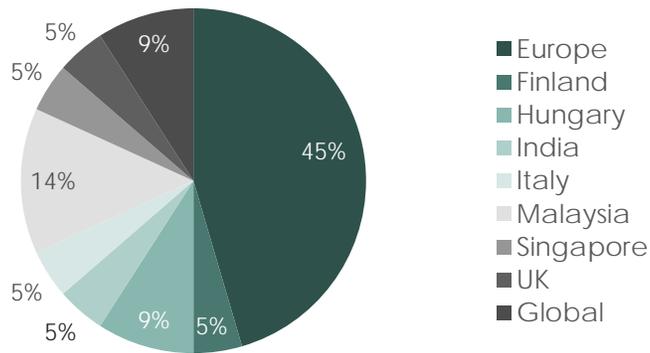


Figure 3.9: Geographical area of focus of publications

The number of citations (Table 3.5) is fairly limited. This could be attributed to the immaturity of the research field. As a result, it can be concluded that more research is still required on SMEs in business ecosystems, especially due to the important role they play in the economy of South Africa.

Table 3.5: Citations of publications

Type of publication	Number of Citations
Article	31
Conference Paper	33

3.5.3.2. Qualitative criteria analysis

A qualitative analysis on the 22 publications was done to determine the status quo of the content of research regarding SMEs in ecosystems. As displayed in Table 3.4, the qualitative analysis contains three criteria including 1) Perspective of analysis, 2) layer of ecosystem addressed, and 3) application level of detail. The first analysis criterion determines the ecosystem component on which the perspective of the publication is based.

The possible perspectives include the following:

- i. **Keystone / Leader:** These publications are mainly focused on the ecosystem as a whole. It most commonly takes the perspective of the ecosystem owner, designer or facilitator;
- ii. **SME:** These publications are from the perspective of the SME participating in the ecosystem. It mainly discussed elements relevant to each individual SME.

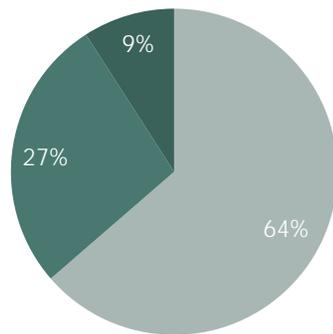
- iii. **Relationship:** These publications focus on the relationships within the network. It contains elements of both the SMEs and the ecosystem, focusing specifically on the interaction.

The results are displayed in Figure 3.10 and it reveals that the majority of the publications (64%) are based from the perspective of the keystone or platform leader. Publications that are based on the perspective of the SME only make up 27% of the total publications. This means that even though all the publications are focused on SMEs, the unique characteristics and requirements of SMEs to participate in the ecosystems are mostly ignored in the reviewed literature. Also shown in the figure is that only 9% of the publications were conducted from the perspective of the relationships. As ecosystems specifically emphasises a more relationship and collaboration-based economy, the interaction between the components of ecosystems need to be better understood.

The second criterion determines which layer of the ecosystem is addressed in the publication. The layers include:

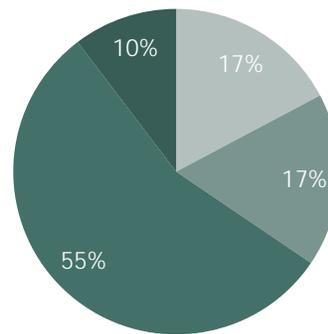
- i. **Governance and policy:** These papers focus on the systems of governance that are required to develop and implement support structures to guide technological development and the operation of ecosystems.
- ii. **Human capital, knowledge and practices:** These papers focus on the knowledge sharing routines that companies use to leverage the ecosystem for knowledge acquisition and exploitation.
- iii. **Service and technical infrastructure:** These papers focus on the software platform that enables firms to digitally interact with one another.
- iv. **Business and financial conditions:** These papers consider the business and financial implications of ecosystems.

Figure 3.11 displays the distribution of the ecosystem structure layers addressed in the publications. As can be seen from the figure, the majority (55%) focusses on the service and technical infrastructure. While the technical aspect and platform architecture is an important component of the ecosystem, its main purpose is to facilitate the remaining layers of the ecosystem. Not addressing each of the ecosystem layers will result in fundamental inconsistencies which means the ecosystem will not be functional.



- Keystone
- SME
- Relationship

Figure 3.10: Component perspective



- Governance and Policy
- Human capital, knowledge and practices
- Service & Technical Infrastructure
- Business & Financial conditions

Figure 3.11: Ecosystem structure layer

The third criterion looks at the level of detail included in the publication. The different levels can be described as follows:

- i. **High Level:** High level publications mainly discuss behavioural aspects with the purpose to enhance the understanding of the specific topic. They do however, not contain detail about why it behaves the way it does, and how to facilitate or manage it;
- ii. **Conceptual Level:** These publications include high level observations together with insight as to why they occur and how it should be managed or facilitated. Solutions at a conceptual level are included;
- iii. **Detailed Level:** Detailed level publications mainly provide technical solutions to very specific applications. These publications normally discuss a case studies or specific examples.

Figure 3.12 displays the distribution of this criterion. An overwhelming majority (68%) of the publications are detailed level publications, while another 27% of the publications are high level. This shows that the conceptual understanding that is required for detailed level analysis still remain underrepresented. Many of the concepts and design decisions that have been explored in the literature are based only on a high-level understanding, which is insufficient for designing a functional and sustainable system. This becomes problematic as many attempts are made to design the infrastructure of a business ecosystem without a deep understanding of a foundation of lower levels to make the system functional, while higher levels of understanding are also lacking.

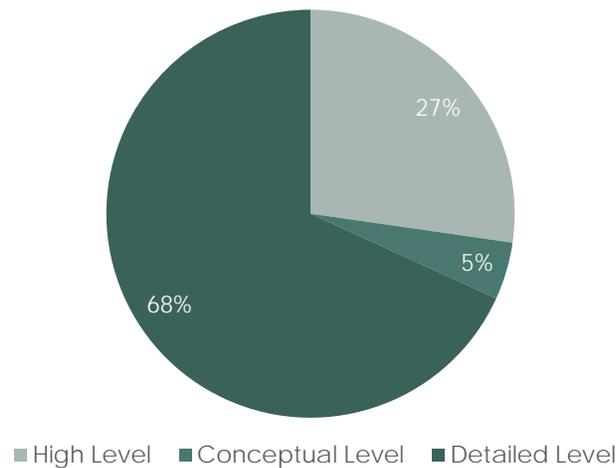


Figure 3.12: Detail level of application

3.5.4. Summary of SMEs in ecosystems

The systematic review was conducted to determine the status quo of the current literature pertaining to SMEs in ecosystems. The results of the review contained some important points that become fundamental considerations moving forward in this study. Firstly, the criteria used for the analysis proved to be central themes in the discussions of ecosystems. These criteria are thus included and discussed in the following chapter.

Secondly, a need for a conceptual understanding of the topic has emerged from the review. Due to the lack of conceptual research, the remainder of this study aims to address the research problem primarily at a conceptual level. Furthermore, this serves as motivation in part to develop the framework at a conceptual level (as discussed in Chapter 2).

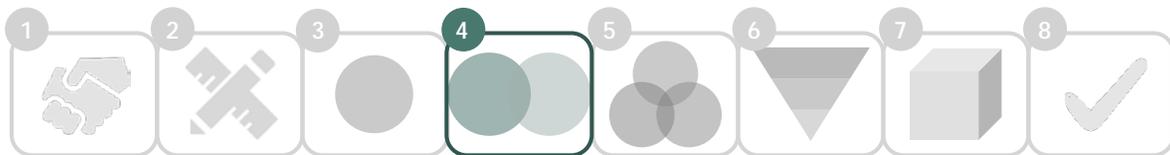
The final result that largely influences the formulation of the remainder of the study is the need for research from the perspective of 'relationship' and the SME. This in part motivates the decision to use the relationship as a unit of analysis, and to then apply the results to the context of the SME. Thus, through this framework, the SME can be observed from an internal point of view, which is based on the relationship requirements. This framework is subsequently able to fill a gap that currently exists in literature.

3.6. Chapter conclusion

This chapter provides an overview of SMEs in the context of South Africa. The definition and classifications of SMEs are described in accordance with The National Small Business act of 1996. The remainder of the chapter focuses on specialised SMEs. The common characteristics of these SMEs are identified and discussed. This is done with the purpose to consider the implications of these characteristics on their role within business ecosystems. The chapter ends with a systematic review that investigates the status quo of the existing research on SMEs in the ecosystems. The results of the systematic review indicated that there is a need to research the topic on a conceptual level, as well as from the perspective of relationship and SMEs, as opposed to the perspective of larger firms. This chapter completes the first research domain, and the results determine the direction in which the remainder of the study should go.

4. Business ecosystems

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This chapter introduces the concept of business ecosystems and describes how ecosystems are structured. This chapter focuses largely on how value is created within ecosystems followed by a clearer definition of the role that SMEs play in the value creation process. The linkages between complementary partners are identified as a key source for value creation in ecosystems.

4.1. Introduction to business ecosystems

Globalisation is increasing the intensity of competition between and across different industries and regions. Digitisation, increased connectivity and declining transportation and communication costs drive the need for firms to extend their network beyond their physical and geographical boundaries (Damaskopoulos, Vitkauskaitė and Gatautis, 2008). Moore (1993) explains that firms should no longer be viewed as a member of a single industry, but rather as part of a business ecosystem that may reach across a variety of industries.

‘Ecosystems in a business context’ is a concept derived from the biological sciences. Just as biological ecosystems consist of various interdependent species, business ecosystems similarly consist of a variety of interdependent organisations. These dynamic and co-evolving communities create and capture new value through sophisticated models of collaboration and competition (Iansiti and Levien, 2004; Canning and Kelly, 2015). Multiple players of different types and sizes are brought together to serve markets in ways that are beyond the capacity of any single organisation or even any traditional industry. Firms co-evolve and cooperate

competitively to support new products, satisfy customer needs and innovate. Diversity and a collective ability to learn and adapt are key determinants of longer term success (Canning and Kelly, 2015).

Business ecosystems attract all sorts of resources including capital, partners, suppliers, and customers. Companies, such as manufacturers, suppliers and service providers, are linked to organisations such as research laboratories, educational facilities, and other organisations in a given economical field. Through relations of interdependence and complementarity, cooperative networks are created (Moore, 1993; Damaskopoulos, Vitkauskaitė and Gatautis, 2008). The participants often are connected by some type of shared interest, purpose or values, which serves as incentive for them to collectively nurture, sustain, and protect the ecosystem (Canning and Kelly, 2015).

The diverse usage of the term 'ecosystem' has however, provoked a certain level of criticism. In fact, several other terms are used in literature that describe concepts similar to business ecosystems, including dynamic clusters, collaborative networked organisations and virtual organisations (Damaskopoulos, Vitkauskaitė and Gatautis, 2008; Jansson and Karvonen, 2014). The term 'ecosystems' is also used in various contexts such as digital ecosystems, innovation ecosystems and entrepreneurial ecosystems amongst others (Nachira *et al.*, 2007; Rao and Jimenez, 2011; Oh *et al.*, 2014). Oh *et al.* (2014), who conducted a critical review of innovation ecosystems, also critiqued the concept of ecosystems due to the possible false analogies between biological and artificial ecosystems. According to Papaioannou, Wield and Chataway (2009), business ecosystems differ from biological ecosystems in both the presence of an intention and the required governance.

While business ecosystems have so far defied a precise and universally accepted definition, the increasing use of this term in the business context makes it an attractive option. At the very least, ecosystems provide a powerful metaphor from the natural world that makes it easier to explore and understand the abstract concepts emerging in the changing and dynamic business landscape (Canning and Kelly, 2015). Oh *et al.* (2014) agree that literature on ecosystems can make a positive contribution if it is viewed as a metaphor rather than a rigorous comparison. Ecosystems are thus able to provide a powerful lens that captures a profound shift in the business landscape by emphasising relationships, partnerships, networks, alliances, and collaborations.

4.2. Ecosystem behaviour: The sharing economy

The trends in ecosystem behaviour are not only based on technological advances, but also on the interactions between people and amongst firms. While technology greatly enables new possibilities in the business landscape, the behaviour and the attitudes of the participants are driven by a so-called shift in consumer behaviour (Nachira *et al.*, 2007). The change in consumer behaviour is a complex topic and it can be attributed to various economical, historical and psychological factors. However, a 'sharing economy' provides an interesting perspective into ecosystem behaviour in the context of unsustainable consumption.

Several researchers have argued that a long history of consumerism is what led up to the unsustainable nature of modern day consumption (Fuchs and Lorek, 2005; Botsman and Rogers, 2010; Thøgersen, 2014). A mass consumption binge and disposable lifestyle started in the 1920s, and became synonymous with convenience and freedom (Strasser, 1999). Both manufacturers and economists have realised the potential in products that ensure return business (Slade, 2009). Deliberate dissatisfaction has become a market strategy and obsolescence is often designed into physical products. Products are designed to have shorter life spans, to be non-repairable and are even designed with certain aesthetic characteristics that influence premature disposal (Packard and McKibben, 1960; Cooper, 2004; Guiltinan, 2009).

When credit was introduced, people were able to buy even more products. The economy became primarily focussed on products. Firms designed, manufactured, sold, and shipped physical things, while business was about inventory and cost-plus pricing (Tzuo and Weisert, 2018). More things meant more resources, which led to more waste (Kamp, 2007; Akerlof and Shiller, 2010). Waste creation and resource exhaustion were originally unanticipated effects, and are often still unintended consequences of consumerism actions. Well-known psychologist, Robert Merton (1936), explained that unintended consequences are often rooted in ignorance and immediate self-interest.

It is however in these traits that a shift is starting to occur in a new generation of consumers. Botsman and Rogers (2010) explain that these consumers have more awareness of the environmental and social impact of their actions. A European study concluded that 88% of consumers believe that it is important to protect the environment, and 87% believe that environmental protection is at least partly their own responsibility (European Commission, 2011). Furthermore, 89% of the consumers believe that purchasing green products

makes a difference to the environment, and 95% feel that purchasing green products is the right thing to do (European Commission, 2013; Barbarossa and Pastore, 2015).

With increasing environmental awareness, more people are realising that the value of a product lies in its use rather than its ownership. At the same time they are enjoying the benefits of access over ownership in saving money, space, time and building new relationships (Botsman and Rogers, 2010). Sharing does not necessarily have to require for people to sacrifice personal freedom and lifestyle. It is more aimed at putting a system in place that is based on core values such as simplicity, transparency and participation (Pollan, 2006). The increasing presence and willingness of the shared use of assets is what is referred to as 'the sharing economy'. While the term has undergone a significant evolution in the last decade, a lot of ambiguity still remains as to its meaning. In fact, the name 'sharing economy' may be interpreted under several different terms such as collaborative consumption, collaborative economy, peer-to-peer economy, or crowd-based capitalism to name a few (Selloni, 2017).

Regardless of the ambiguity, the concept of the sharing economy and its trends cannot be ignored and the impact thereof reaches far beyond customer behaviour. Armstrong, Engelbrecht and Kelly (2015) explain that for firms, considerations about mergers and acquisitions (M&A) and divestiture have become more complex. Traditionally, firms have always used M&A to accelerate their entry into new markets and to grow their competitive strengths. Similar to the new generation of consumers in the sharing economy, firms are now also realising the potential to make productive use of assets without owning them. The assets that they acquire are often present in their ecosystem and readily available. In this sense, ecosystems are creating new pathways for growth in the form of strategic alliances (Armstrong, Engelbrecht and Kelly, 2015).

4.3. Business ecosystem structure

The ambiguity and diversity related to the term 'business ecosystem' have resulted in a large body of literature with little convergence. Research has been conducted from various perspectives and for different purposes. The structure of business ecosystems described in literature vary greatly depending on the perspective from which research is conducted (see e.g. Iansiti and Levien, 2002; Nachira *et al.*, 2007; Gawer, 2014; Tzuo and Weisert, 2018). While these structures vary, they are not contradicting. Each description merely addresses a different part of the ecosystem. Three perspectives have been identified which each addresses a critical part

of the ecosystem structure. While these perspectives are by no means the only way to look at the structure of an ecosystem, this combination provides a relative holistic depiction of how ecosystems are structured. The perspectives, displayed in Figure 4.1, include 1) the components of an ecosystem, 2) the layers of an ecosystem, and 3) the functions of an ecosystem.

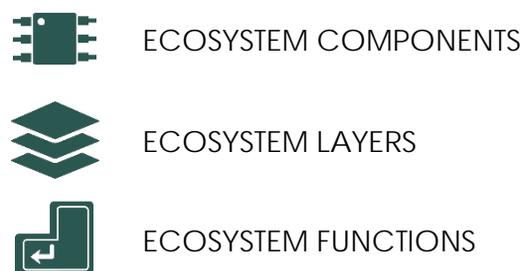


Figure 4.1: Ecosystem structure perspectives

4.3.1. Ecosystem components

Ecosystems comprise various interdependent components that each has a unique role in the ecosystem. The components have complex interrelations with each other and create value through their interaction. The main components of an ecosystem include the platform on which the ecosystem operates, as well as the participants in the ecosystem. In effect, the term ‘ecosystem’ refers to the platform and its participating members collectively.

4.3.1.1. *Platforms*

Many ecosystems are organised around a platform that provides a core, which allows several entities to transact with each other. Platforms provide the layers of infrastructure that impose standards on a system in which the various independent entities can operate for their own gain. Platforms are not a new concept (Canning and Kelly, 2015). Examples of existing platforms include shopping malls that bring together buyers and seller, and newspapers that connect advertisers and potential customers (Huotari *et al.*, 2016). Platforms in the digital era have however, empowered many new possibilities to create value. From a digital perspective, platforms can be described as a technological foundation that connects multiple entities for a common purpose (Cusumano and Gawer, 2002).

Technological platforms are conceptualised as a dynamic and evolving organisation. It entails a modular technological architecture that attracts and coordinates various interdependent entities that compete and collaborate, share and create resources and co-evolve (Gawer, 2014). This enables participants to derive value for themselves, while simultaneously yielding strong returns for the platform builder or owner (Cusumano and Gawer, 2002). Platforms can be powerful catalysts for rich ecosystems of resources and participants. It makes resources and participants more accessible to each other, particularly on an as-needed basis. As a result, it enables the firms to be more responsive to increasingly demanding customers (Canning and Kelly, 2015).

Herman, Grobbelaar and Pistorius (2018) explain that the platform owner is responsible for the underlying technology of the platform upon which the ecosystem operates. The architecture of a platform comprises certain stable and reusable core architectural components that remain fixed. On top of the core components, other peripheral components can be developed that are variable and change over time. The variable components typically have a high variety but low reusability (Cusumano and Gawer, 2002; Baldwin and Woodard, 2008; Boudreau, 2010). The modular nature of the platform architecture allows the design and production to be divided amongst multiple entities, enabling more innovation and specialisation (Gawer, 2014). This architectural design enables the core platform to be re-used for a variety of applications, without extensive modification (Tiwana, Konsynski and Bush, 2010).

4.3.1.2. *Ecosystem participants*

Platforms are deliberately designed to attract the participation of a large number of players (Hagel, 2015; Kelly, 2015). The ecosystems that are created on top of these platforms come in many varieties, but they all comprise some key participants. The participants, as with the remainder of the structure, can be portrayed in many different ways. One particular way that has received wide recognition in literature, is to categorise the participants according to the keystone, niche players and the customer. These participants have been identified through the completion of the systematic review, included in Chapter 3 (refer to Section 3.5, p. 42). Though the nature of their roles differs in each type of ecosystem, they can each be identified from the core characteristics they share. The participants can be described as follows:

- i. **Keystones**, also referred to as platform leaders or ecosystem leaders. They are arguably the most significant member of the ecosystem. The keystone regulates the overall function of the ecosystem, influencing the success of all the other members, including its own. Keystones exert substantial power

within the ecosystem, thus demanding a greater share of overall profits (Moore, 1993; Cusumano and Gawer, 2002). The keystone often also provides and owns the platform which other members in the ecosystem could utilise (Iansiti and Levien, 2004);

- ii. The **niche players** support the keystone. They form the great majority of the ecosystem by contributing the largest portion of innovation and created value. Niche players have specialised functions which differentiates them from other members of the ecosystem (Cusumano and Gawer, 2002). Niche players focus on their own, specialised value offering by utilising the provided platforms, as well as the products from other niche players within the ecosystem (Iansiti and Levien, 2004); and
- iii. The **customers** are the buyers or the users of the value that the ecosystem offers. It is important to identify the consumer of the ecosystem, as they are increasingly becoming more active participants in the value creation process (Canning and Kelly, 2015).

4.3.2. Ecosystem layers

As discussed in the previous section, platforms provide different layers of infrastructure to regulate the various independent entities that operate within the ecosystem. These layers enable the ecosystem to facilitate, manage and sustain the interactions within the ecosystem, as well as manage and sustain the ecosystem itself (Herdon, Várallyai and Péntek, 2012). These layers have been identified through the completion of the systematic review, included in Chapter 3 (refer to Section 3.5, p. 42). The layers, as defined by Nachira *et al.* (2007) include the following:

- i. **Governance and policy:** The self-organising nature of a business ecosystem requires a higher order capability (Tsatsou *et al.*, 2007). Reliable systems of governance are required to develop and implement support structures to guide technological development and communal decision making (Darking, Whitley and Dini, 2006). The governance structure should determine who can participate, the roles they might play, how they might interact, and how disputes get resolved. A set of protocols or standards is also required to facilitate connection, coordination, and collaboration (Canning and Kelly, 2015). Furthermore regulatory policies should be established to determine the level of data sharing, for both business-to-business (B2B) and business-to-customer (B2C) that would not violate data protection regulations (Tsatsou *et al.*, 2007);

- ii. **Human capital, knowledge and practices:** Knowledge and information are critical assets in a business ecosystem. The ecosystem builds relation-specific assets and knowledge sharing routines that allows companies to leverage the network for knowledge acquisition and exploitation (Tsatsou *et al.*, 2007; Ndou *et al.*, 2010). This interaction and sharing of knowledge enhances innovation capabilities for all partners (Dominic *et al.*, 2011). The interaction also enables firms to integrate their services with those of their peers to increase the value offered to customers. Each firm will have established their own operational processes to deliver their services. The more complex and time or cost-critical these processes are, the more challenging the management and integration processes are (Dominic *et al.*, 2011; Jansson and Karvonen, 2014);
- iii. **Service and technical infrastructure:** The ecosystem uses a digital infrastructure that allows companies to create, integrate and operate services (Dominic *et al.*, 2011). The infrastructure is a well-defined software platform that creates a digital environment where firms can dynamically interact (Estanyol and Lurgi, 2011; Herdon, Péntek and Várallyai, 2011); and
- iv. **Business and financial conditions:** The nature of small and medium enterprises (SMEs) creates special conditions that should be considered for the ecosystem they operate in. SMEs generally display more flexibility and adaptability to own the technology, making them the ideal candidates to operate in a dynamic environment (Dominic *et al.*, 2011). However, they are often under severe resource constraints (e.g. time and money), and have a lack of internal expertise (Estanyol and Lurgi, 2011; Weiss and Minshall, 2014). This means that they are not able to invest a lot of time and money into studying and selecting from the ever-growing technologies that are best suited for their activities (Herdon, Péntek and Várallyai, 2011).

4.3.3. Ecosystem functions

Value creation in ecosystems places a strong emphasis on relationships and collaboration. Ecosystems create the possibility for firms to deploy and utilise assets they do not control or own. Naturally this would require the complex coordination of expertise and activities (Canning and Kelly, 2015). In order to achieve this, Els, Grobbelaar and Kennon (2017) identified and summarised the functions included in Table 4.1.

Table 4.1: Summary of ecosystem functions, adapted from Els, Grobbelaar and Kennon (2017).

Functions	Description
Communication	<p>In business ecosystems, knowledge is exchanged and adapted in real time. The participants share and use resources, applications, services and knowledge (Sarkar, Prabhakar and Chatterjee, 2007; Herdon, Péntek and Várallyai, 2011). This means that ecosystems are heavily dependent on the effectiveness of communication between businesses, including both B2B and B2C (Pappas <i>et al.</i>, 2007; Ndou <i>et al.</i>, 2010). For a firm to be able to communicate effectively, they require the following capabilities (Liu <i>et al.</i>, 2004; Ndou <i>et al.</i>, 2010):</p> <ul style="list-style-type: none"> • The ability to create and sustain data relationships; • The transformation of data and data constraints across different platforms; • The ability to handle complex queries across multiple sources; and • The ability to retrieve, store and combine information that accumulates throughout the network.
Knowledge and information management	<p>Advanced mechanisms are required to capture and manage complex information (Pappas <i>et al.</i>, 2007). The information shared between members of the ecosystem is likely to contain sensitive information which will require privacy controls (Tsatsou <i>et al.</i>, 2007). Sensitive information raises issues such as trust, security and consumer protection (Darking, Whitley and Dini, 2006). The management of sensitive data requires the following (Tsatsou <i>et al.</i>, 2007):</p> <ul style="list-style-type: none"> • A defined level of data sharing that will not violate regulations on data protection; • Agreement between partners that ensures data will not be shared with unauthorised third parties; and • A means of generating traceable records to deal with any data breaches.
Integration and interoperability	<p>In business ecosystems, business processes and information are transferred and exchanged both inter and intra-firm. This means that two or more components in the ecosystem must not only be able to exchange information, but they must also be able to utilise the shared information (Herdon, Péntek and Várallyai, 2011). This is achieved by the collaboration of multiple processes and applications to become one functional unit. This integration is required at the following two levels (Herdon, Péntek and Várallyai, 2011):</p> <ul style="list-style-type: none"> • Technological integration, including the processes and applications, as well as the system interface; and

Functions	Description
	<ul style="list-style-type: none"> Information integration, including the accumulated data and knowledge within the system.
Dynamics and reconfiguration	<p>Firms in ecosystems operate in a complex environment and interact dynamically. This means that the firms in the ecosystem should be adaptable and be able to survive in a dynamic environment (Damaskopoulos, Vitkauskaitė and Gatautis, 2008; Ndou <i>et al.</i>, 2010). Dynamic capabilities refer to the following (Damaskopoulos, Vitkauskaitė and Gatautis, 2008):</p> <ul style="list-style-type: none"> The ability to re-deploy existing competencies to build new products that better match emerging markets; The ability to sense the environment to identify market needs and new opportunities; and The learning capacity to generate new knowledge and enhance existing resources;
Self-organisation and evolution	<p>Technological platforms aim to provide a flexible, distributed infrastructure that will imitate the self-organising and evolutionary behaviour of biological ecosystems (Darking, Whitley and Dini, 2006). Self-organising capabilities include the following:</p> <ul style="list-style-type: none"> The ability to facilitate the emergence of long-lasting collaborative partnerships (Estanyol and Lurgi, 2011); Intelligent behaviour and the ability to learn and adapt to produced and derived knowledge on a short time scale (Pappas <i>et al.</i>, 2007); The ability of self-optimisation through differentiation and selection of its own components on a long time scale (Pappas <i>et al.</i>, 2007); and The ability to support user decision-making by providing optimal solutions and combinations (Kurz and Heistracher, 2007);
Service offerings	<p>In business ecosystems, firms are able to create, integrate and utilise services via inter and intra organisational links (Khalil <i>et al.</i>, 2011). The service architecture of the firms in the ecosystem will require the following capabilities (Leong <i>et al.</i>, 2007; Dominic <i>et al.</i>, 2011):</p> <ul style="list-style-type: none"> Services must be designed as loosely-coupled independent units of functionality to ensure that minimum coordination is required; and A clearly defined, externally visible interface must provide a unified view for other system members to use their functionality.

Functions	Description
Open innovation	<p>Open innovation is a term used to describe the use of external knowledge flow and expanded markets to accelerate internal innovation (Chesbrough, Vanhaverbeke and West, 2006). A business ecosystem creates an environment with increased possibility for open innovation due to the exchange of knowledge and skills (Sarkar, Prabhakar and Chatterjee, 2007).</p> <p>The firms in the ecosystem do however, still remain responsible to scout the environment for valuable inputs and apply it to their own complex and technical innovation processes (Weiss and Minshall, 2014). SMEs can be severely limited in this regard due to their smallness, scale limitations and restricted technological assets. For SMEs to take advantage of open innovation opportunities, they will require the following (Jansson and Karvonen, 2014; Weiss and Minshall, 2014):</p> <ul style="list-style-type: none"> • The implementation and execution of boundary spanning activities; and • Involving customers with product and service development processes.

4.4. Value creation in business ecosystems

Through business ecosystems, new means of creating value have been developing in the form of denser and richer networks of connection, collaboration, and interdependence. Ecosystems are drawing in specialised smaller firms due to their flexibility, agility and innovation capabilities. Much of the optimism around business ecosystems lie in the collaborative and cooperative relationships that are able to form between small and large firms (Canning and Kelly, 2015). While it is clear that there exists opportunities to create value, the manner in which value is created needs clarification. If the value creation within ecosystems can be understood, it will be possible to define more clearly the role of SMEs in ecosystems. This will in turn make it possible to determine in what areas SMEs need support to fulfil this role more successfully.

Vargo (2008) explains that in order to understand value creation, it would require 'zooming out' to view the ecosystem as a whole. In doing this, it becomes apparent that the process of value creation varies between different types of ecosystems. Thus, the following section aims to understand value creation by first categorising ecosystems according to their value creating processes.

4.4.1. Secondary case study analysis: Categorising ecosystems

Ecosystems exist in a broad array of shapes and sizes, and its many forms have not yet been properly defined (Sahasrabudhe *et al.*, 2012). This section aims to look at a variety of ecosystem cases, and categorise them according to their value creation process. While it is possible to categorise ecosystems in many different ways, the value creation process is chosen as unit of analysis with the specific purpose to understand how value is created within ecosystems.

A simple value creation process is used to determine the criteria according to which the ecosystems are categorised. Each step in the value creation process represents a criterion according to which the ecosystems are evaluated and categorised. Each criterion describes a specific attribute of the ecosystem within the process. The key criteria, in accordance with the value creation process, are described in Figure 4.2. Case studies that have successfully demonstrated the dynamic interaction between multiple members were selected to be reviewed. The cases were primarily obtained from secondary, web-based sources and were found through exploratory research. A full list of the case studies is included in Appendix C.

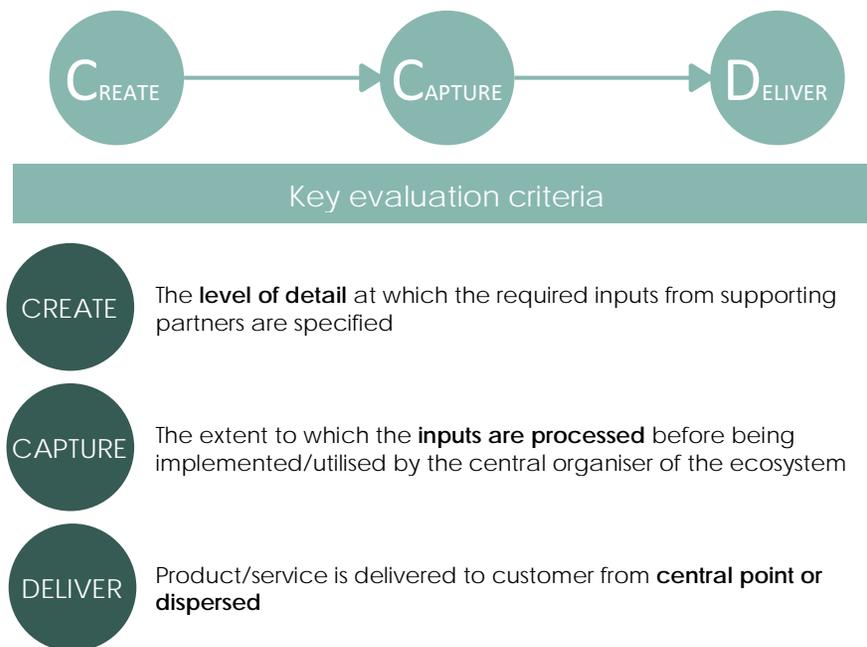


Figure 4.2: Value creation process and key categorisation criteria (Els, Grobbelaar and Kennon, 2018).

The evaluation of these case studies resulted in five types of ecosystems. This includes integration ecosystems, collection ecosystems, matching ecosystems, data collection ecosystems, and sequenced ecosystems. Figure 4.3 displays a summary of the various types of ecosystems and the corresponding categories. Els, Grobbelaar and Kennon (2018) provided a description of each of the ecosystem types which is summarised in Figure 4.4.

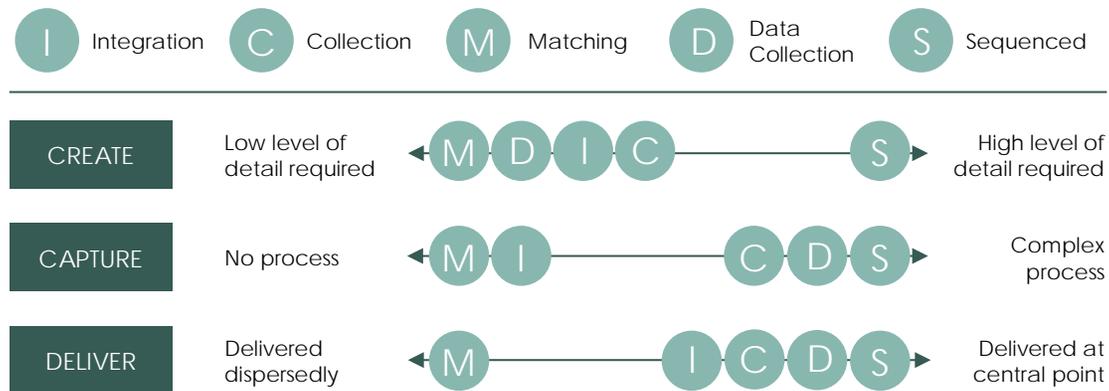


Figure 4.3: Summary of ecosystem categorisation (Els, Grobbelaar and Kennon, 2018).

Each of the ecosystem types according as categorised above is discussed in the following section.

Integration ecosystems refers to ecosystems where the offerings of multiple firms are integrated to create an enhanced product or service. Strategic partners with complementary capabilities would combine their product or service offerings or collaborate on marketing efforts, after which the customer receives an integrated value offering (Erevelles *et al.*, 2008). In essence, these firms establish win-win B2B relationships where they endorse each other to enhance themselves in the marketplace (Bengtsson and Servais, 2005). These relationships come in many forms ranging from co-branding to niche-outsourcing. An example of such an ecosystem is South African insurance group Discovery®, who teamed up with numerous wellness brands to offer their clients discounts and other offers (Swartzberg and Kim, 2016). Through these alliances, their own product is differentiated from their competitors’, enabling them to generate new profits, enter new markets, widen their current markets, and create barriers to entry for their competitors (Rao and Ruekert, 1994; Park, Jun and Shocker, 1996).

Collection ecosystems refer to ecosystems where inputs are collected in the form of contributions, information or innovations to jointly solve problems. Multiple firms contribute a combination of inputs that often require additional resources to be further developed. The collected inputs can serve as

supplementary parts of the R&D process (Sahasrabudhe *et al.*, 2012). Through collection ecosystems, firms are able to tap into the ideas and solutions from a broad and diverse range of third parties, creating real value in terms of knowledge, innovation and the evolution of products (Canning and Kelly, 2015; Hagel, 2015). Open source software such as Linux® is an example of a collection ecosystem that receives on average more than 20 000 contributions or modifications from a wide range of contributors per day (Daws, 2017).

Matching ecosystems connect producers and customers through the use of a common platform. Through these ecosystems, firms are able to access markets that they often would not have been able to reach on their own. Through digitisation particularly, the potential market reach of ecosystems is continuously expanding. As an example, Uber® has been used to book more than 5 billion rides, and more than 160 million guests have booked accommodation through Airbnb® (Smith, 2017a, 2017b). These ecosystems also have the ability to provide firms with a certain level of credibility. This is achieved through some component of trust, which refers to the assurance to both parties that they will not be cheated, defrauded or receive poor quality goods or service (Head and Hassanein, 2002).

Data collection ecosystems refer to ecosystems that collect the data from various business activities. While the use of data has already transformed traditional industries, analysing and interpreting large amounts of data is becoming an entire industry on its own (Pham, 2015; Lewis and McKone, 2016). Multiple firms are able to access and blend multiple sources of data, creating powerful combinations of information. The exploitation of this data through computational power enables business leaders to make smarter decisions and to take action more quickly. Data-driven scenarios and simulations are able to provide immediate guidance and optimal solutions based on complex business parameters (LaValle *et al.*, 2011). Discovery is an example, where through their ecosystem of wellness brands they managed to gain complete access to real-time data of the health and lifestyle of their clients. Based on this data, they are able to dynamically adjust the premiums to their policyholders, thus minimising their risk (Swartzberg and Kim, 2016).

Sequenced ecosystems represent more traditional supply chains, where required activities are specified at a high-level of detail. This set of activities is often tightly managed and should be completed in a sequential manner. The ecosystems comprise a variety of manufacturers, suppliers and service providers

(Sahasrabudhe *et al.*, 2012). The scope of these ecosystems has extended across national boundaries as global businesses often create individual ecosystems within the local areas where they operate. Global businesses such as Coca-Cola® and Toyota® often utilise local suppliers and employ local people to create supply chains similar to any other local manufacturer. By operating on a local scale, these businesses are able to streamline their products and practices for local cultures and regulations. This however involves the management of complex supply chains and requires mature supply chain management capabilities (Cox, 1999; Lupo, 2013).

While the ecosystems as described above demonstrate a simplification of reality, it provides useful insights to how value is created within ecosystems. It is also necessary to note that these ecosystems are not mutually exclusive. One ecosystem could contain several elements of each type. A summary of these ecosystems, together with additional examples are displayed in Figure 4.4.

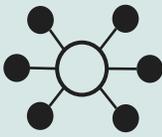
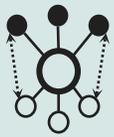
	INTEGRATION	COLLECTION	MATCHING	DATA COLLECTION	SEQUENCED
					
Types	Several businesses integrate their offerings to provide a more attractive offering to the downstream customer.	Information is collected from multiple sources and used towards jointly solving a problem or creating knowledge.	Suppliers are connected with customers to fulfil a specific purpose.	Data that is generated from the business activities in the ecosystem is collected, analysed and used for a specific purpose.	A series of activities are performed in a sequential manner to contribute to the key value offering
Examples	<ul style="list-style-type: none"> • Discovery 	<ul style="list-style-type: none"> • Wikipedia • Kickstarter • GoFundMe • LEGO • Kaggle • Innocentive • Linux 	<ul style="list-style-type: none"> • Uber • Airbnb • TutorVista • Alibaba • Taobao 	<ul style="list-style-type: none"> • Google • Discovery • AdWords • American Express • Belk 	<ul style="list-style-type: none"> • General Motors • SABMiller • Woolworths • Coco-Cola • Sabco • Toyota

Figure 4.4: Ecosystem categorisation summary

Based on the above discussions, it can be derived that the value in ecosystems lies in finding and connecting specific combinations. Ecosystems are able to attract smaller participants that do specific activities exceptionally well. These participants can then be linked to complementary partners to create unique and

powerful combinations of knowledge and capabilities. These linkages thus lie at the core of ecosystem value creation.

4.4.2. Complementary partnerships in ecosystems

The linkages between complementary partners have been identified as a core theme towards ecosystems value creation. For this reason, the following section includes a discussion on the complementarity that can be found in partnerships. While particular attention is given to partnerships between small and large firms, it is not limited to this combination. The discussion on partnerships directs this section towards the domain of ecosystems in interaction with the domain of B2B relationships, as displayed in Figure 4.5.

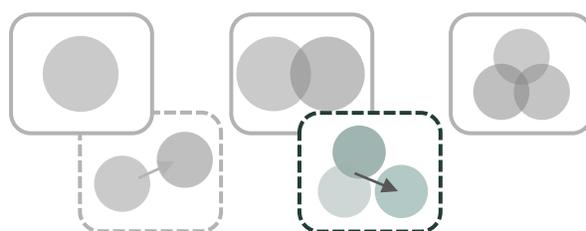


Figure 4.5: Section relevance in literature review development

Partnerships between small and large firms have the potential to create value for both parties. Larger firms can access a broad spectrum of deeply specialised capabilities and highly exclusive knowledge that would normally fall outside of their internal capacity (Canning and Kelly, 2015). Smaller firms on the other hand, can gain access to resources that otherwise would not have been possible (Blomqvist, 2002). Beyond the value that is created for each of the partners, joint or shared value is also created in partnerships (Ulaga, 2003). Shared value provides complementary benefits to the partners and is critical for a partnership to be sustainable. The following sections explain different ways that complementary benefits are created in partnerships.

4.4.2.1. *Research and development*

In terms of R&D, small and large firms have complementary strengths and weaknesses (see Figure 4.6). SMEs are especially suitable for the early stages of the innovation process where ideas are created and conceptualised. This is mainly due to their flexible structures and agile operations (Blomqvist, 2002; Narula, 2004). In the high paced environment of technological change, inter-disciplinary knowledge is becoming an

increasing important factor for firms keep pace in terms of R&D. SMEs have a relative advantage in learning and knowledge creation in emerging and risky areas (Nieto and Santamaría, 2010).

Large firms on the other hand, have existing structures that are suitable for testing, documentation and operation processes that are found at the later stages of innovation. While the larger firms mostly have the resources to afford both incremental and radical innovations, they often face barriers to create radical innovations due to their risk averse nature (Blomqvist, 2002). The deep specialisation of SMEs can complement large firms where they lack in internal expertise. Large firms can in turn expose SMEs to the critical resources and capabilities required to realise innovating ideas (Nieto and Santamaría, 2010; Canning and Kelly, 2015).

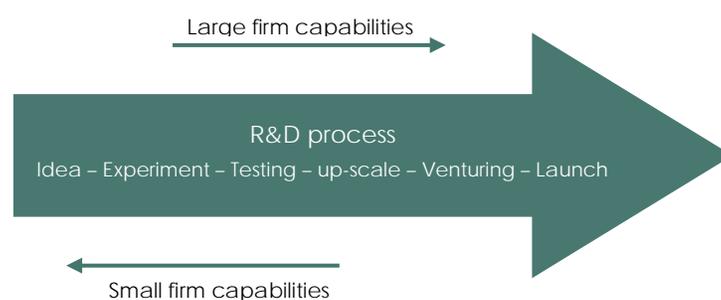


Figure 4.6: Asymmetric firms' complementary R&D capabilities (Blomqvist, 2002).

4.4.2.2. *Access to capabilities*

New and specialised capabilities are often considered a prerequisite for firms to grow into new areas. Large firms however, often only focus on products and services with major market potential. Through partnerships, they are able to access and utilise new capabilities from specialist firms. This means that they are able to expand their capabilities with less capital investment than required to internally develop those capabilities (Blomqvist, 2002; Canning and Kelly, 2015).

SMEs on the other hand, have the opportunity to access the markets of the large firm without acquiring extensive additional capabilities (Varadarajan, Yadav and Shankar, 2008). By combining the capabilities from specialised firms, it is also likely that the activities would be performed at an overall high quality (Canning and Kelly, 2015). New combinations of complementary capabilities often provide firms with first-mover advantage, and consequently enable them to increase their market share (Varadarajan, Yadav and Shankar, 2008).

4.4.2.3. *Organisational support*

SMEs often experience growth constraints due to undeveloped organisational structures and a lack of management skills (Landau, 1987). Larger firms often offer their smaller partners resources such as marketing, distribution, manufacturing or training, as well as industry related know-how and expertise (Teece, 1987; Sawers, Pretorius and Oerlemans, 2008). Large firms may even open up their contact networks to smaller partners and reference customers in the emerging industry. The reputation of the large firm usually has a positive impact on the credibility of their smaller partners. Increased credibility means that the cost of acquiring new customers or partners, and sustaining existing ones will reduce (Bocconcelli, Murmura and Pagano, 2018).

4.4.2.4. *Product and process innovation*

SMEs are often pressured by larger partners to increase their competitiveness and to continuously produce high quality services or products. These customer driven relationship requirements could mean that SMEs often need to customise technologies and systems specifically to suit their partners' needs (Blomqvist, 2002; Ngugi, Johnsen and Erdelyi, 2010). These relationship-specific adaptations often involve high risk for SMEs as it can imply considerable and non-transferable investments. Simultaneously however, it provides many learning opportunities for SMEs. SMEs acquire knowledge throughout the unique projects, which can be transferred to other partnerships or developed into products.

In this regard, partnerships are key to enable the access of external resources such as valuable organisational, technical and market knowledge held by larger partners. This knowledge can then be applied in internal product or process innovations, subsequently improving and upgrading products and services, production facilities, and organisational units and mechanisms (Bocconcelli, Murmura and Pagano, 2018).

4.4.3. Barriers to entry for SMEs

As discussed in Chapter 3 (Small and medium enterprises in South Africa), SMEs face numerous challenges with regards to survival in traditional markets. On top of these challenges, ecosystems present an additional set of challenges, which can create barriers to entry for SMEs. While it is generally agreed upon that the barriers to entry are declining for smaller firms to enter larger and mature value chains, various challenges still

exist and need to be addressed. These barriers are primarily rooted in a lack of resources such as time, money, workforce, internal expertise and managerial resources (Estanyol and Lurgi, 2011; Weiss and Minshall, 2014).

The small scale and resource strapped nature of SMEs often burden them with the challenge to successfully respond to substantial strategic discontinuities, unpredictable environmental changes and uncertain dynamism (Ndou *et al.*, 2010). Ecosystems are characterised by a high level of dynamism, and requires its participants to be flexible in both their activities and goals. There are however, two parts to flexibility that need to be noted. Firstly, flexibility refers to the ability of a firm to quickly and easily implement operational, structural or strategic changes. Secondly, flexibility refers to time and costs necessary to implement these changes (Volberda, 1997). While SMEs are mostly characterised by flexible features such as simple organisational structures, prompt decision-making and high environmental sensitivity, a lack in mobile financial resources could inhibit them from adequately responding to emerging opportunities or inhibit their ability to react to threats (Brennan, Turnbull and Wilson, 2003; Quayle, 2003; Boeck, 2009; Matejun, 2014).

Ecosystems are also characterised by a highly technological business environment, which means that the participants are continuously pressured to keep up with technology as it advances. Furthermore, technology-intensive firms in particular would be required to have sophisticated and top-of-the-range IT infrastructure (Weiss and Minshall, 2014). This means that they need to be able to select the right software for their business, have sufficient data processing capability and a high level of IT expertise amongst their employees (Wang and De Wilde, 2008; Herdon, Péntek and Várallyai, 2011). Acquiring and implementing the appropriate technologies can become critical, and can also serve as resource intensive factors for firms to survive in ecosystems. As explained by Passerini, Tarabishy and Patten (2012), SMEs are often constrained by struggling operations. They therefore tend to prioritise growing their core business over implementing the newest technologies.

Choosing the appropriate technological solutions has also been identified as a challenge for SMEs. They need to consider various factors such as cost, capacity, user requirements, upgrades, maintenance and protection against obsolescence. Due to the large number of available technologies in the rapidly changing technical environment, it is becoming more difficult for a firm to determine which investments will be profitable (Passerini, Tarabishy and Patten, 2012).

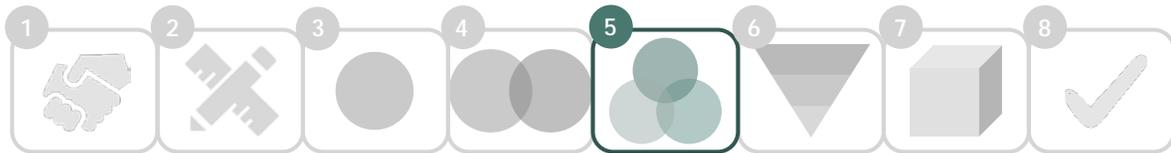
Another notable challenge for SMEs in ecosystems is the difficulties related to establishing trust relationships in the increasing opportunistic and highly technical environment. Asymmetrical power in relationships often makes trust difficult to develop. Due to a lack of negotiation power and legal expertise, SMEs can end up in an unfavourable position in a relationship (Hancké, 1998; Tsatsou *et al.*, 2007). Large firms often have more access to legal expertise and more resources available to institute legal actions. As a result, they have a better chance at avoiding opportunistic behaviour within partnerships (Blomqvist, Hurmelinna and Seppanen, 2005; Sawers, Pretorius and Oerlemans, 2008). It is however not only differences in power that can cause relationships to fail, but also differences in management, strategies, organisational structure and culture (Blomqvist, Hurmelinna and Seppanen, 2005). Due to the significant role of partnerships in ecosystems, these challenges with regards to forming relationships are particularly worrisome.

4.5. Chapter conclusion

This chapter aims to introduce the concept of business ecosystems. It further provides background information on the structuring and functioning of ecosystems to create a general understanding of the term. The remainder of the chapter focuses largely on how value is created within ecosystems with special attention given to the role that SMEs play in the value creation process. The linkages between firms are identified as key-to-value creation. Complementary partnerships are thus introduced and briefly discussed. This sets the foundation for the discussions of B2B relations in the following chapter. This chapter completes the second research domain.

5. Business-to-business relationships

5.1. INTRODUCTION TO BUSINESS-TO-BUSINESS RELATIONSHIPS	72
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This chapter provides an overview of business-to-business (B2B) relationships, which is considered to be a core aspect of partnerships. B2B relationships are constantly evolving. As such this chapter provides an overview of the different ways that relationship evolution can be portrayed. Relevant theories on B2B relationships are also discussed to determine the factors that influence the establishment and development of B2B relationships.

5.1. Introduction to business-to-business relationships

Up until this point, partnerships have been a recurring theme as it has been identified as key to value creation in business ecosystems. It is necessary to note however, that partnerships exist in many forms. Mehrotra (2017) displays partnerships on a scale that range between internal development and acquisition, as displayed in Figure 5.1. Partnerships are by no means static on this scale and at any point can display advantages and disadvantages for either party. One of the biggest factors that can impact how the partnership evolves is the relationship that exists between the two firms.

While B2B relationships have been a topic of interest to researchers for a long time, it is receiving renewed attention in the face of the business ecosystems concept. By deploying technologies and tools of connectivity, firms are able to interact and co-create in ways that would traditionally have been hard to formally coordinate.

Firms are increasingly able to utilise assets that they do not own, to engage with a larger number of participants, and to coordinate much more complex activities (Canning and Kelly, 2015).

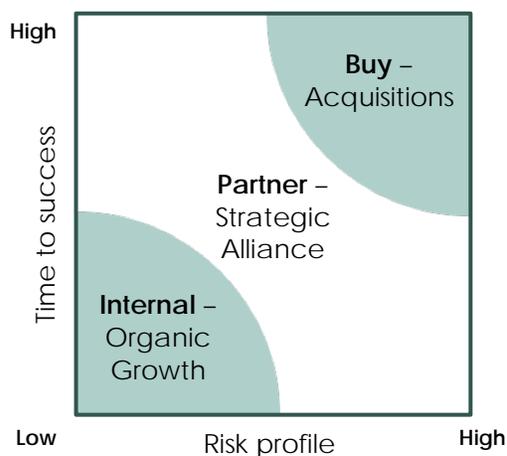


Figure 5.1: Speed vs Risk profile for capability growth (Mehrotra, 2017).

Several theories and models have been developed to describe how relationships are established, as well as how these relationships develop and become strong. Furthermore, considerable research has been done on the different factors that influence the relationship between firms. The remainder of this section therefore includes discussions on the existing literature of B2B relationships that have been deemed relevant to relationships between small and large firms.

5.2. Relationship formation and development process

One of the central themes of B2B relationships is the notion of evolution. Evolution is an important aspect of relationships as it is widely acknowledged and agreed upon that relationships are constantly changing and progressing. Several authors have developed models that describe the evolution of B2B relationships in different stages or phases. Four well-known stage models are displayed in Figure 5.2 to illustrate how different authors portray relationship evolution.

Each author portrays the relationship development process in a different series of stages with varying levels of detail. Ford's model for example, analyses the process of relationship establishment, and development over time, by considering five evolutionary stages (Ford, 1980). The model is especially useful in describing gradual commitment as it emphasises variables such as experience, uncertainty, distance, commitment and adaptations

(Blomqvist, 2002). Dwyer, Schurr and Oh (1987) also portray the relationship development process through five stages with each stage in the model representing a transition in how the parties regard one another.

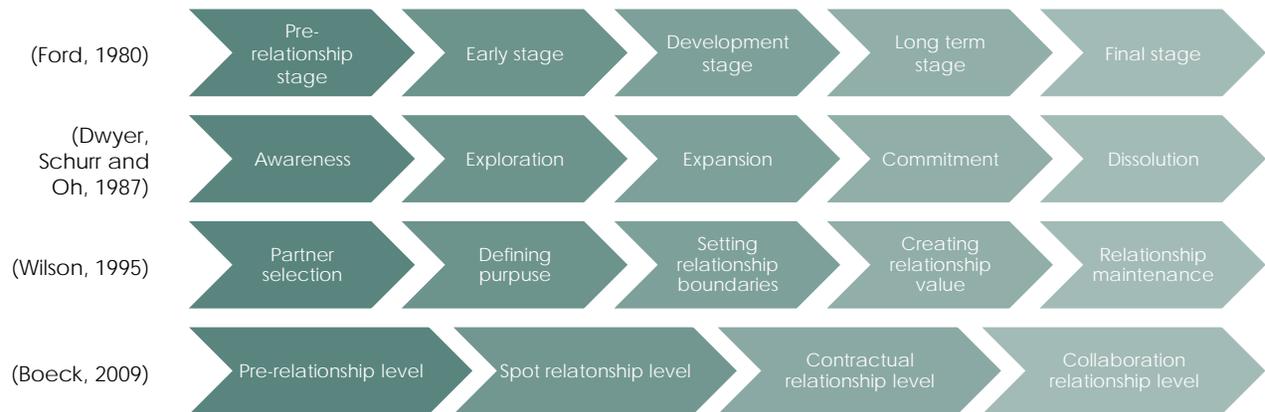


Figure 5.2: Different stage models of B2B relationship evolution

Wilson (1995) developed an integrated model that describes the relationship development process in terms of an exhaustive list of variables that have been successful predictors of relationship performance. Boeck (2009) analysed B2B relationships that develop through the use of electronic exchange platforms. The model depicts relationships at four levels and describes each level in terms of the adaptive behaviour of each party.

While each author portrays the development of B2B relationships differently, a high level of congruence exists between them. For this reason, Blomqvist (2002) created a conceptualisation that summarises the different factors of the various existing models. The conceptualisation, displayed in Figure 5.3, shows four stages including awareness, attraction, agreement and interaction.

Each of the models describes the start of a relationship as a type of a pre-relationship phase where only information is exchanged. This phase, described by Blomqvist (2002) as the awareness phase, indicates that a firm must recognise the need for a partnership, as well as the potential of partner candidates. During the awareness phase no transaction has yet been conducted. The main purpose of this phase is rather to allow each party to become aware of what the other has to offer (Boeck, 2009).

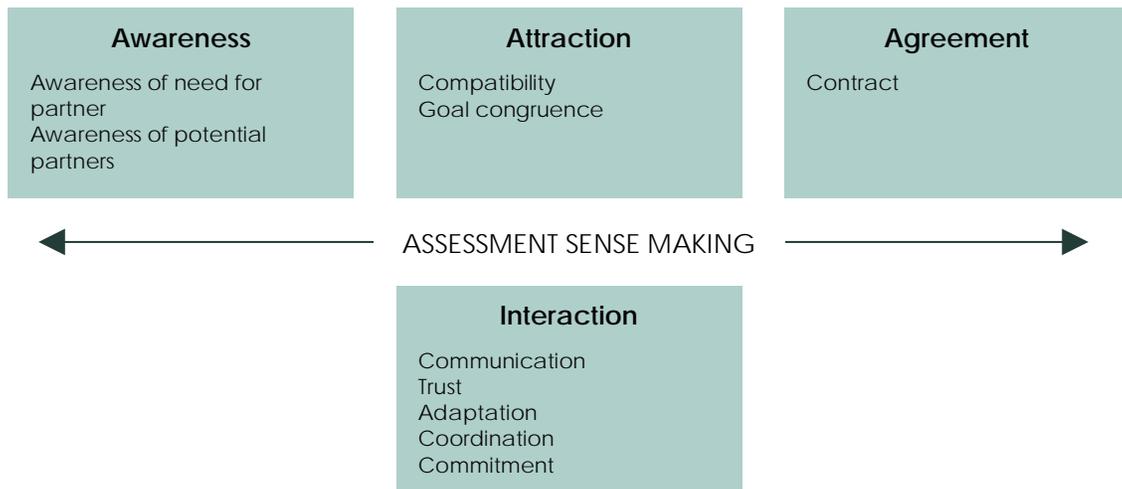


Figure 5.3: General model of the critical phases and factors in B2B relationships, adapted from Blomqvist (2002).

Dwyer, Schurr and Oh (1987) explain that once the firms become aware of one another, a certain minimum level of attraction is required to initiate interaction. This attraction is defined in terms of a reward-cost outcome. The level of attraction is often measured in relation to other potential partners, which means that the most attractive business relationship has the highest positive net present value (Blomqvist, 2002). The compatibility of the partners is one of the important dimensions of attractiveness. The knowledge, resources and skills of each of the parties should complement the other. Wilson (1995) further argues that the level of goal congruency is an important aspect of attractiveness. Goal congruency refers to the possibility for both firms to simultaneously achieve their goals (MacKenzie, 1992).

The interaction phase, as defined by Blomqvist (2002), consists of communication, trust, adaptation, coordination and commitment. Efficient communication is required for firms to define themselves, exert their influence, and assert their position in their relationships (Johnsen and Ford, 2006). Communication has a critical role in the articulation of future intentions, and is closely related to trust and commitment (Blomqvist, 2002). Trust can generally be defined as the belief that one partner will act in the best interests of another partner. In this sense, trust is viewed as a fundamental aspect of successful B2B relationships (Wilson, 1995).

Boeck (2009) explains that a firm needs to adapt to the requirements of their partner in order for the relationship to evolve. Reciprocal adaptations are however seen as a means of trust-building within the relationship as it indicates commitment (Hallen, Johanson and Seyed-Mohamed, 1991). According to Dwyer,

Schurr and Oh (1987), commitment refers to an implicit or explicit pledge of relational continuity between partners. Commitment however, involves risk as it often requires significant investments and increased dependence (Brennan, Turnbull and Wilson, 2003). For this reason, the level of trust between partners is strongly related to the level of commitment. Blomqvist (2002) explains that trust and commitment have a self-enforcing relationship, as some level of trust is needed for commitment, which is in turn increased through trust-building.

The partners enter into an agreement if the interaction phase has been sufficiently successful. This agreement can be in the form of a written or verbal contract (Blomqvist, 2002).

5.3. Relevant theories

Several theories have been developed to increase the understanding of how B2B relationships develop. These theories complement each other as each addresses different problems while ignoring others. The theories are included due to their fundamental contribution to the subject of B2B relationship, and each offers useful tools and concepts. The following theories are discussed:

- Transaction-cost theory;
- Social exchange theory; and
- Interaction approach.

5.3.1. Transaction-cost theory

Transaction cost theory has become one of the most influential theoretical frameworks for explaining the rationale behind organisational boundary decisions (Williamson, 2008). Transaction cost theory originates from the seminal work of Coase (1937) in which he describes markets and hierarchies as alternative governance structures (Geyskens, Steenkamp and Kumar, 2006).

The basic premise of transaction cost theory is that the choice of whether to produce in-house, buy from the market or establish partnerships with other firms depends on the costs related to the transaction (Williamson, 2008). The decision making rationale based on transaction costs is graphically displayed in Figure 5.4. The transaction costs can be described as the costs of doing business with another firm or entity (Axelsson and

Easton, 1992). It includes searching costs, screening the competence and goodwill of potential partners or transacting parties, negotiation and contracting costs, enforcement costs and the monitoring of the other party (Dyer, 1997; Blomqvist, 2002).

Transaction cost theory seems to be a logical starting point for studying partnership formation. At least in theory it offers a logical rationale for firms that face the decision of whether to keep the operations and control internal or whether to utilise external resources.



Figure 5.4: Boundary decisions according to the transaction cost theory, adapted from Blomqvist (2002).

Williamson (1975) later refined transaction cost theory by defining observable dimensions of both human behaviour and environmental factors that influence transactions. It provides contextual factors that are relevant when considering relationships particularly between small and large firms.

The human behaviour dimensions that Williamson (1975) defined include bounded rationality and opportunism. Bounded rationality refers to limitations of individuals to receive, store, retrieve, and process information without error (Williamson, 1975). It also suggests that individuals are not able to accurately predict the future, and make allowance for every possible effect that a certain transaction or decision would have (Blomqvist, 2002; Hallikas, Virolainen and Tuominen, 2002). Opportunism on the other hand, is based on the assumption that every action and decision of an individual or entity are motivated by self-interest (Williamson, 1985). Williamson (1975) explains that the opportunistic party will always aspire to break an agreement if benefits are available elsewhere (Hallikas, Virolainen and Tuominen, 2002).

Williamson (1975) further defined environmental dimensions namely uncertainty, frequency of transactions, and asset-specificity. Uncertainty refers to the unpredictability of the contingencies surrounding a transaction, and transaction frequency refers to recurrence of transactions. According to Williamson (1985), transaction frequency provides an incentive for firms to employ a specific governance, because the related overhead costs will reduce if the frequency increases (Geyskens, Steenkamp and Kumar, 2006).

Transaction-specific assets are assets that have been adapted, often through significant investments, to suit a specific transaction or relationship (Geyskens, Steenkamp and Kumar, 2006). Williamson (2008) explains that asset specificity by nature cannot be reemployed. This means that if the relationship is terminated, the value of the investments is likely to be lost (Hallikas, Virolainen and Tuominen, 2002). Relation-specific adaptations are however, necessary for relationships to develop. Blomqvist (2002) explains that if the uniqueness and asset specificity is higher, there would be a higher level of dependence between partners. Mutual dependency consequently leads to a higher level of commitment and trust.

Several economists have in fact, argued that trust reduces transaction costs (Bromiley and Cummings, 1992; Chiles and McMackin, 1996; Blomqvist, Hurmelinna and Seppanen, 2005). For this reason it can be said that the transaction cost theory is limited due to its static nature and its inability to incorporate the complexity of trust and partnership development (Blomqvist, 2002).

5.3.2. Social exchange theory

Social exchange theory was developed to understand the social behaviour of individuals, while undertaking economic transactions. The theory originates from the intersection of different fields including economics, psychology, and sociology (Lee, Mohamad and Ramayah, 2010). Similar to transaction cost theory, social exchange is based on the assumption that the exchange is motivated by a reward that justifies the cost. The perception that the reward is less than the required costs will cause the transaction to terminate. In comparison to transaction cost theory, social exchange deals with intangible social costs and benefits such as love, respect and knowledge (Liao, 2008). Social exchange consequently takes place in an environment with a lack of explicit rules and regulations. This means that trust plays a significant role to justify expected benefits from the exchange. In social relationships, trust reduces complexity and is essential for stability (Blau, 1964; Luo, 2002; Liao, 2008).

Social exchange theory is largely based on the assumption of mutual self-interest. This means that a party in the exchange must be able to provide rewards in order to receive rewards (Blomqvist, 2002). Blau (1964) further explains that the exchange parties intend to obtain rewards that they would not necessarily be able to achieve without the relationship (Lee, Mohamad and Ramayah, 2010). In fact, social exchange theory argues that relationships will remain superficial if the rewards exchanged are readily available from a number of sources (Huston and Burgess, 1979).

Huston and Burgess (1979) also explain that the exchange must be sufficiently profitable in order to motivate partners to intensify their involvement. In this sense, individuals can be viewed as a feedback mechanism, which means that actions with favourable outcomes are likely to be repeated (Homans, 1979). The evaluation of relationship outcomes thus lie at the core of relationship maintenance and growth (Lee, Mohamad and Ramayah, 2010). Subsequently, a relationship will emerge when the parties enter into repeated exchange with each other. It then grows, develops, deteriorates, and dissolves as a consequence of an ongoing social exchange process comprising existing and new types of exchanges (Huston and Burgess, 1979; Blomqvist, 2002).

Another important aspect of relationships according to social exchange theory is the concept of equity. Equity refers to the extent that benefits and burdens are shared (Van de Ven and Walker, 1984). Equity theory indicates that individuals will have a higher level of commitment when they perceive that the reward received by each party is proportional to the relative value of their investments (Huston and Burgess, 1979; Blomqvist, 2002; Lee, Mohamad and Ramayah, 2010).

In contrast to transaction cost theory, social exchange theory emphasises relationships as a continuous exchange process that will either intensify or terminate. Social exchange theory thus contributes to the understanding of the dynamic and evolutionary nature of B2B relationships.

5.3.3. The interaction approach

The interaction approach, in contrast to transaction cost and social exchange theory, focuses on the relationship as unit of analysis rather than focusing on the participating parties. Thus, the emphasis is not on what's happening within the firm, but rather what's happening between the firms (Guercini and Milanesi, 2016). The IMP Group (1982) developed an early model of the interaction approach to examine the issues of interaction between buyers and sellers in business markets. The model (see Figure 5.5) displays four major elements, which describe and influence the interaction between buyers and sellers. These include the interaction process, the participants in the interaction process, the environment in which the interaction takes place, and the atmosphere affecting and affected by the interaction.

The interaction approach emphasises the importance of the relationship between buyers and sellers, distinguishing between long and short-term relationships. The benefits of long-term relationships are

generally more difficult to measure compared to the immediate benefits received from short-term relationships (Haksever, Demir and Giran, 2001). According to the interaction approach, long-term relationships develop through a complex series of exchange episodes that are reflected by past interactions and impacts future interaction (Ford *et al.*, 1998; Blomqvist, 2002). Exchanges include product or service exchange, information exchange, financial exchange, and social exchange (IMP Group, 1982).

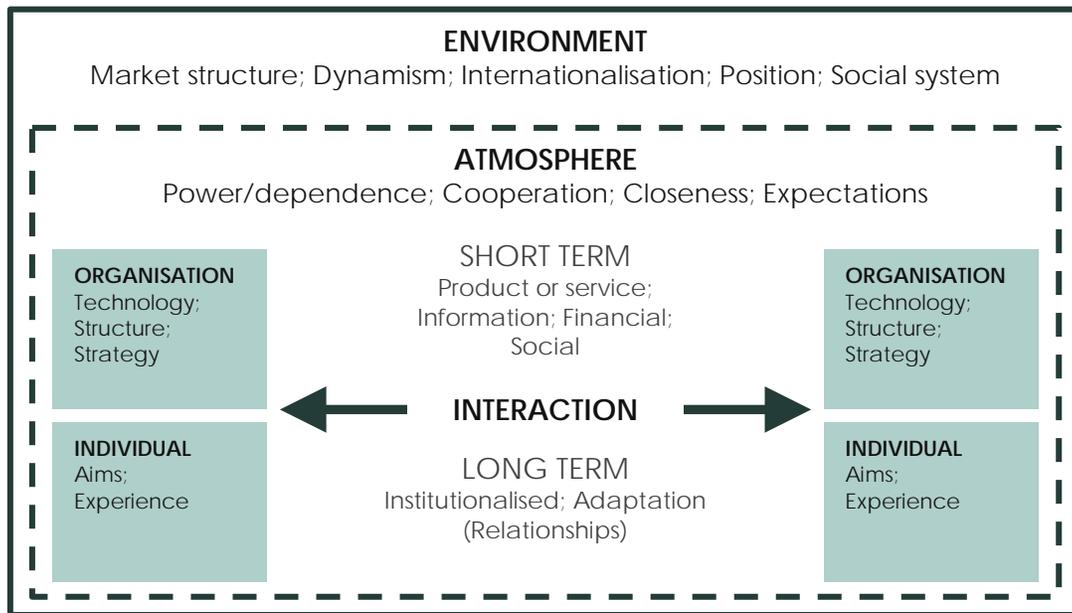


Figure 5.5: Illustration of the interaction model (IMP Group, 1982).

The buyers and sellers are also viewed as active participants in the interaction (Woo and Ennew, 2004). The characteristics of the organisations and individuals are considered to influence both the short and long term aspects of the interaction. It is further explained that the interactions do not happen in isolation. For this reason, environmental aspects such as the existing market structures, the degree of dynamism, internationalisation, the position in supply or value chain, and the social system must be considered (IMP Group, 1982).

The atmosphere in which the relationship exists is the final element to be addressed by the interaction model. While the relationship between firms is dynamic, it also displays a certain level of stability. The degree of stability is derived from the length of the relationship, its routinisation and the expectations held by both parties. The stability factor determines the atmosphere of the relationship, which can be described in terms

of the power–dependence relationship, the state of conflict or co-operation, and the overall closeness of the relationship (IMP Group, 1982).

The interaction approach provides a holistic view of B2B relationships, and identifies several variables that influence and shape the relationship between firms. It highlights the importance of considering both long-term relationship and environmental aspects.

5.3.4. The applicability of different theories

Each of the theories discussed in the sections above were developed in different contexts and for different purposes. While these theories have different approaches to understanding B2B relationships, they do share several fundamental similarities. This means that if the fundamental aspects of each of these theories are combined, a more holistic understanding of B2B relationships can be formed.

Transaction cost theory provides a measurable approach to determine the costs and benefits related to a relationship. With its emphasis on opportunism and bounded rationality, it focuses on the management and control of opportunistic players. Thus, transaction cost theory overlooks the relationships that form between individuals, and it does not consider long-term or secondary benefits related to these relationships. Social exchange theory on the other hand, strongly emphasises the human emotions that are involved when relationships are formed. This shifts the focus away from controlling the opportunistic factors of a relationship, but rather towards leveraging the possible benefits that the relationship might offer. The interaction approach takes a step back from motivation at firm level, and looks at the environment in which the relationship exists. Various factors that may influence the evolution of the relationships are determined with the individual firms being one of those factors.

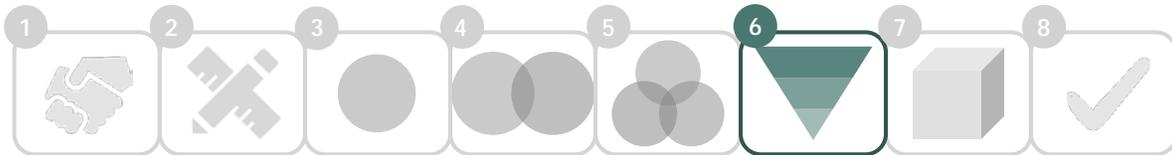
These theories in combination provide complementary outlooks on relationships. Firstly, the contractual aspect of the relationship that measures costs and benefits are considered. Secondly, it is acknowledged that relationships form between individuals, which can involve possible secondary or immeasurable benefits. Lastly, it is recognised that relationships do not form or operate in isolation, and various external factors can influence the direction in which relationships evolve.

5.4. Chapter Conclusion

This chapter introduces the concept of B2B relationships. B2B relationships are discussed in response to the identification of partnerships as a critical aspect in business ecosystems. B2B relationships are of an evolutionary nature, and can be portrayed in different and evolving stages. Relevant and well-known theories of B2B relationships are discussed to determine a holistic view of the topic. This chapter completes the third and final research domain. In conjunction with the previous two literature chapters, this chapter forms the literature base that makes up the foundation of the remainder of the study.

6. Identification of relational capabilities

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This chapter presents the relational capabilities that were collected from the literature review in the preceding chapters. The capabilities are identified following the conceptual framework analysis (CFA) process as proposed by Jabareen (2009). The intermediate goal is to identify the requirements of B2B relationships based on the literature review. These requirements are then converted into the related relational capabilities.

6.1. Introduction to relational capabilities

The relational capabilities of a firm presents to potential partners its ability to contribute to knowledge development, creativity and innovation within relationships (Chesbrough and Teece, 1996). The interaction within a relationship will determine the way in which the capabilities of the firms will develop. Johnsen and Ford (2006) therefore explain that a firm must consider how the capabilities will be viewed in the relationship and how it will be able to contribute to the success of the relationship.

There can be distinguished between hard and soft capabilities. Hard capabilities refer to aspects such as structures, processes, procedures, physical infrastructure, metrics, resources, *etc.* Soft capabilities refer to aspects such as culture, climate, leadership, *etc.* that ensure proper and effective management of the hard

aspects (Essmann, 2009). While this distinction is not explicitly made in the discussions of relational capability, it is important to note that it does form a significant consideration.

Relationship-specific theory of capability is fundamental in order to understand the need to build capabilities in increasingly complex and dynamic business environments (Gadde and Håkansson, 2001). For this reason, the remainder of this section aims to identify relational capabilities that will enable firms to relate to other firms more successfully, contributing not only to their own knowledge but also to that of their relationships. The capabilities that are identified in this section are based on the theoretical foundation discussed in Chapters 3, 4 and 5.

6.2. Identification of relational requirements

Figure 6.1 displays a brief overview of the CFA process, which is used to identify the relational requirements. As can be seen from this figure, the first step has been addressed in Chapters 3, 4 and 5. The relational requirements refer to the conditions that a relationship is required to have in order to function as needed in ecosystems. The rationale behind using the relationship as unit of analysis is based on the results of the systematic review, as discussed in Section 3.5.4, p. 50. To recap, the systematic review concluded that there was a need for ecosystems to be studied from both the perspective of the relationship angle, as well as from the context of smaller firms or niche players. For this reason, this section aims to conduct an analysis from the perspective of the relationship. At a later stage, the results of this analysis will be converted to the perspective of SMEs.

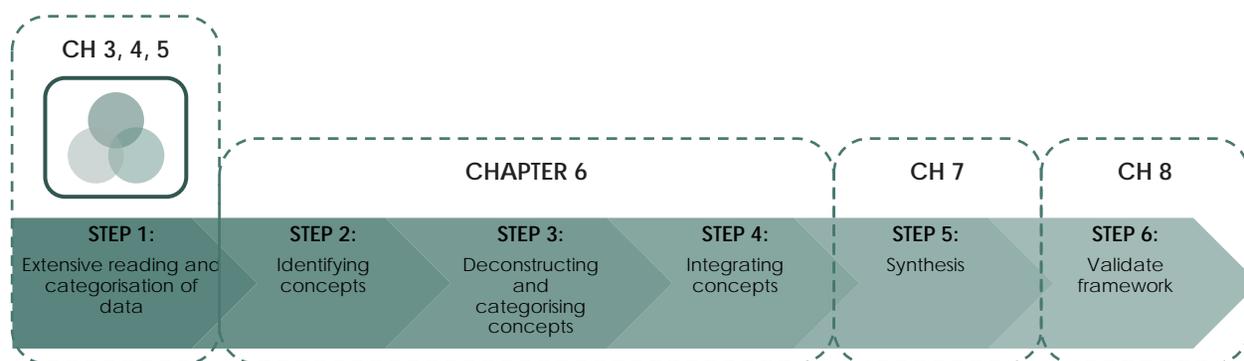


Figure 6.1: Concept identification process, adapted from Jabareen (2009).

As specified in Chapter 1, the main objective of this study is to determine how a South African SME can be guided to identify and improve the capabilities required to develop B2B relationships in business ecosystems. Three research domains have been identified and discussed (refer to Chapters 3, 4 and 5), each of which provides a fundamental building block to achieving this objective. An in-depth review of the research domains has resulted in a comprehensive theory base which contains a large amount of implicit knowledge that needs to be made explicit in order to contribute to achieving the research objective. This is achieved through completing the activities of Step 2, 3 and 4 of the CFA process, as displayed in Figure 6.1.

6.2.1. Step 2: Identifying concepts

According to Jabareen (2009), the aim of the second step in the CFA process is to discover various concepts through an iterative and repetitive process of reading. The collective results of an intensive multidisciplinary literature review is included in Chapters 3, 4 and 5. Through this review, numerous concepts have been identified that are deemed relevant to the main research objective. An exhaustive list of these concepts are included in Table 6.1 (refer to the column marked with ‘Step 2’). Each of the concepts are displayed with the section it is related to in the literature review.

6.2.2. Step 3: Deconstructing and categorising concepts

The aim of Step 3 is to deconstruct each of the concepts into its main attributes and characteristics (Jabareen, 2009). This was done by labelling each of the concepts with a relevant theme that describes the attributes, characteristics of and assumptions around each. Table 6.1 displays the theme allocation for each concept. In total, 24 themes have been identified to describe the concepts.

Table 6.1: Identification and deconstruction of concepts

Related section	Theme (Step 3)	Concept (Step 2)
Strategic Intent (SME Characteristics)	Responsive	SME management is personalised, characterised and deeply impacted by the influence of owner-managers (Prahalad and Bettis, 1986; Storey, 1994; Freiling, 2008)
	Responsive	SME owner-manager is dependent on the entrepreneurial logic (Prahalad and Bettis, 1986; Storey, 1994)
	Flexible; Responsive	SME owner-managers have to respond professionally to a broad range of different managerial challenges (Freiling, 2008)
	Innovation	SME owner-manager is innovative (Sadler-Smith <i>et al.</i> , 2003)
	Adaptation; Risk	SME owner-manager is inclined to take risks (Sadler-Smith <i>et al.</i> , 2003)

Related section	Theme (Step 3)	Concept (Step 2)
	Growth	SME management is growth oriented and ready to change (Sadler-Smith <i>et al.</i> , 2003)
	Growth; Innovation	SME owner-manager goes beyond the conventional ways on how to do business and create new ones (Freiling, 2008)
	Responsive	SME-owner-manager is self-efficient (Sadler-Smith <i>et al.</i> , 2003)
	Adaptation; Strategy	SMEs are shaped according to the company's vision instead of adapting to the 'given' circumstances (Freiling, 2008)
	Responsive; Strategy	SME management is proactive, anticipate and recognise up-and-coming developments in the business environment and identify the consequences of these developments as early and precisely as possible (Freiling, 2008)
	Strategy	SMEs usually target a small customer base (Freiling, 2008)
	Dependency; Power	SMEs have limited bargaining power (Freiling, 2008)
	Strategy	SMEs need to deploy assets to find attractive positions in niche markets (Freiling, 2008)
Organisational Structure (SME Characteristics)	Agile; Flexible; Responsive; Resilient	SMEs have a low degree of structural complexity (Jennings and Beaver, 1997; Freiling, 2008)
	Innovation	SMEs have high innovation potential due to low complexity (Freiling, 2008)
	Agile; Responsive; Resilient	SMEs are independent and free from outside control (Freiling, 2008)
	Strategy	SMEs are close to customer (Freiling, 2008)
	Responsive; Resilient	SMEs do not have extensive hierarchies (Jennings and Beaver, 1997)
	Agile; Responsive	Management can overlook and control entire business (Jennings and Beaver, 1997)
	Agile; Flexible; Responsive; Resilient	SMEs do not require extensive formal planning procedures (Freiling, 2008)
	Growth; Innovation	SMEs have a larger capacity for changing business processes (Sadler-Smith <i>et al.</i> , 2003)
	Co-evolving; Growth; Innovation	SMEs are constantly looking out for ways to improve business processes (Freiling, 2008)
	Adaptation; Growth; Investment	SMEs have a larger capacity to launch new products and services (Sadler-Smith <i>et al.</i> , 2003)
	Knowledge; Transparency	Process descriptions and documentation are often underdeveloped, codification of knowledge in the form of blueprints not are not always sufficient (Venkataraman <i>et al.</i> , 1990)
	Agile; Flexible	SMEs have a smaller number of personnel (Zaridis and Mousiolis, 2014)
	Transparency	There is greater transparency within SMEs (Zaridis and Mousiolis, 2014)
	Growth; Responsive	Owner-managers and employees rethink processes and products more frequently and fundamentally (Freiling, 2008)
Resources (SME Characteristics)	Complementary; Dependency	SMEs are dependent on external resources (Segers, 1992)
	Dependency; Risk	SMEs often acquire finance through loan funding and available subsidies (Venkataraman <i>et al.</i> , 1990)
	Strategy	SMEs have limited scope in terms of products or services (Landau, 1987; Zaheer, Rehman and Ahmad, 2006)
	Complementary; Risk	Focus enables them to master their few products and services (Landau, 1987; Zaheer, Rehman and Ahmad, 2006)
Ecosystem functionalities	Data; Knowledge; Transparency	Knowledge is exchanged and adapted in real time (Liu <i>et al.</i> , 2004; Ndou <i>et al.</i> , 2010)
	Cooperative; Shared	Partners share and use resources, applications, services and knowledge (Liu <i>et al.</i> , 2004; Ndou <i>et al.</i> , 2010)
	Data; Shared; Transparency	Data is created and shared between partners (Liu <i>et al.</i> , 2004; Ndou <i>et al.</i> , 2010)

Related section	Theme (Step 3)	Concept (Step 2)
	Data; Knowledge; Shared; Transparency	Data is transformed across different platforms (Liu <i>et al.</i> , 2004; Ndou <i>et al.</i> , 2010)
	Data; Transparency	Firms must handle complex queries across multiple sources (Liu <i>et al.</i> , 2004; Ndou <i>et al.</i> , 2010)
	Data; Transparency	Firms must be able to retrieve, store and combine information that accumulates throughout the network (Liu <i>et al.</i> , 2004; Ndou <i>et al.</i> , 2010)
	Data; Shared; Transparency; Trust	Firms should define the level of data sharing to not violate regulations on data protection (Tsatsou <i>et al.</i> , 2007)
	Data; Trust; Transparency	Partners must make an agreement to ensure that data will not be shared with unauthorised third parties (Tsatsou <i>et al.</i> , 2007)
	Data	Firms must generate traceable records to deal with data breaches (Tsatsou <i>et al.</i> , 2007)
	Data; Innovation; Knowledge	Accumulated data and knowledge should be integrated within the system (Herdon, Péntek and Várallyai, 2011)
	Agile; Resilient	Firms must be able to adapt in order to survive in a dynamic environment (Damaskopoulos, Vitkauskaitė and Gatautis, 2008)
	Agile; Resilient; Responsive	Firms should re-deploy their existing competencies to build new products to match emerging markets (Damaskopoulos, Vitkauskaitė and Gatautis, 2008)
	Alignment; Environment; Strategy	Firms must be able to sense the environment to identify market needs and new opportunities (Damaskopoulos, Vitkauskaitė and Gatautis, 2008)
	Growth; Knowledge	Firms must have a learning capacity to generate new knowledge and enhance existing resources (Damaskopoulos, Vitkauskaitė and Gatautis, 2008)
	Adaptation; Growth; Knowledge	Firms must learn and adapt to produced and derived knowledge on a short time scale (Pappas <i>et al.</i> , 2007)
	Agile; Flexible; Resilient	Services of a firm must be designed as loosely-coupled independent units of functionality (Leong <i>et al.</i> , 2007; Dominic <i>et al.</i> , 2011)
	Environment	Firms should have a clearly defined, externally visible interface (Leong <i>et al.</i> , 2007; Dominic <i>et al.</i> , 2011)
	Environment; Knowledge; Strategy	Firms must scout their environment for valuable knowledge and inputs (Weiss and Minshall, 2014)
	Growth; Innovation; Knowledge	Firms must incorporate knowledge to internal processes (Weiss and Minshall, 2014)
	Adaptation; Co-evolving; Cooperation	Firms must involve customers with product and service development processes (Weiss and Minshall, 2014)
Value creation in partnerships	Complementary; Innovation	SMEs are suitable for early stages of innovation (Blomqvist, 2002; Narula, 2004)
	Flexible; Agile	SMEs have flexible and agile operations (Blomqvist, 2002; Narula, 2004)
	Growth; Innovation; Knowledge	SMEs have an advantage in learning and knowledge creation in emerging and risky areas (Nieto and Santamaría, 2010)
	Complementary; Strategy	Deep specialisation of SMEs complement large firms (Nieto and Santamaría, 2010; Canning and Kelly, 2015)
	Alignment; Complementary	Large firms expose SMEs to critical resources and capabilities (Nieto and Santamaría, 2010; Canning and Kelly, 2015)
	Growth	Firms need new capabilities to grow (Blomqvist, 2002; Canning and Kelly, 2015)
	Co-evolving; Cooperative	SMEs can access markets of new firms without additional investment (Varadarajan, Yadav and Shankar, 2008)
	Dependency; Risk	SMEs have underdeveloped organisational structures (Landau, 1987)
	Dependency; Power	SMEs have a lack of management skills (Landau, 1987)

Related section	Theme (Step 3)	Concept (Step 2)
	Adaptation; Co-evolving	Large firm pressure SMEs to increase their competitiveness and continuously produce high quality services or products (Blomqvist, 2002; Ngugi, Johnsen and Erdelyi, 2010)
	Adaptation; Co-evolving	SMEs receive customer-triggered requirements (Blomqvist, 2002; Ngugi, Johnsen and Erdelyi, 2010)
	Adaptation; Co-evolving	SMEs often need to customise technologies and systems to suit their partners (Blomqvist, 2002; Ngugi, Johnsen and Erdelyi, 2010)
	Co-evolving; Knowledge; Cooperative	Relationships provide learning opportunities (Bocconcelli, Murmura and Pagano, 2018)
	Cooperative; Shared; Co-evolving	Partners hold valuable organisational, technical and market knowledge (Bocconcelli, Murmura and Pagano, 2018)
Relationship formation	Strategy	Firms should recognise the need for a partnership (Blomqvist, 2002)
	Alignment; Environment; Strategy	Firms should be aware of potential partner candidates (Blomqvist, 2002)
	Alignment; Environment	Firms must be aware of what partners can offer (Boeck, 2009)
	Alignment; Complementary	Knowledge, resources and skills of each of partners should complement each other (Dwyer, Schurr and Oh, 1987)
	Alignment; Complementary	Goal congruency influences attractiveness (Dwyer, Schurr and Oh, 1987)
	Alignment; Complementary	Both parties must be able to achieve their goals (Dwyer, Schurr and Oh, 1987)
	Power; Transparency	Firms must exert influence and assert position in a relationship (Johnsen and Ford, 2006)
	Commitment; Investment; Power; Trust	Firms must articulate future intentions (Blomqvist, 2002)
	Commitment; Trust	Firms must communicate (Blomqvist, 2002)
	Risk; Trust	Partners must believe that the other will act in their best interest (Wilson, 1995)
	Adaptation; Co-evolving; Risk	Firms must adapt to the requirements of their partner (Wilson, 1995)
	Investments; Risk; Trust	Reciprocal adaptations are a means of building trust (Hallen, Johanson and Seyed-Mohamed, 1991)
	Adaptation; Dependency; Risk	Adaptations increase dependence (Hallen, Johanson and Seyed-Mohamed, 1991)
	Investment; Risk	The choice to establish partnerships depend on the cost of transactions (Williamson, 2008)
	Environment; Strategy	Searching costs increases transaction costs (Dyer, 1997; Blomqvist, 2002)
	Commitment; Trust; Risk	Screening the competence and goodwill of potential partners increases transaction costs (Dyer, 1997; Blomqvist, 2002)
	Commitment; Trust; Risk	Contract negotiation, enforcement and monitoring increase transaction costs (Dyer, 1997; Blomqvist, 2002)
	Risk; Uncertainty	Individuals cannot receive, store, retrieve, and process information without error (Williamson, 1975)
	Risk; Uncertainty	Individuals are not able to accurately predict the future and make allowance for every possible outcome (Blomqvist, 2002; Hallikas, Virolainen and Tuominen, 2002)
	Risk; Uncertainty	It should be assumed that every action and decision are motivated by self-interest (Williamson, 1975)
Transaction-Cost theory	Risk; Uncertainty; Trust	It should be assumed that a party will always aspire to break an agreement if benefits are available (Hallikas, Virolainen and Tuominen, 2002)
	Risk; Uncertainty	The contingencies surrounding a transaction is unpredictable (Geyskens, Steenkamp and Kumar, 2006)

Related section	Theme (Step 3)	Concept (Step 2)
	Commitment; Trust; Risk	Transaction frequency will reduce overhead costs (Geyskens, Steenkamp and Kumar, 2006)
	Investments; Risk	Transaction specific investments cannot be redeployed (Williamson, 2008)
	Investments; Risk	If a relationship is terminated, the value of the investments will be lost (Geyskens, Steenkamp and Kumar, 2006)
	Commitment; Investment; Risk; Trust	Relation specific investments is necessary for a relationship to develop (Blomqvist, 2002)
	Adaptation; Co-evolving; Dependency	High uniqueness and asset specificity would increase dependence between partners (Blomqvist, 2002)
Social exchange theory	Alignment; Risk	Exchange is motivated by a reward that justifies the cost (Lee, Mohamad and Ramayah, 2010)
	Commitment; Risk	If the reward is less than the cost, the transaction will terminate (Lee, Mohamad and Ramayah, 2010)
	Commitment; Trust	Trust can justify expected benefits in future (Blau, 1964; Luo, 2002; Liao, 2008)
	Commitment; Risk; Trust	Trust reduces complexity and is essential for stability (Blau, 1964; Luo, 2002; Liao, 2008)
	Investment; Risk	A firm must provide rewards in order to receive rewards (Blomqvist, 2002)
	Commitment; Risk	Relationship will remain superficial if the rewards exchanged are not unique (Huston and Burgess, 1979)
	Commitment; Investment; Risk	The exchange must be sufficiently profitable in for partners to intensify involvement (Huston and Burgess, 1979)
	Commitment; Trust	Relationship will emerge from repeated exchange (Huston and Burgess, 1979)
	Commitment; Growth; Investments	Relationship evaluation is at the core of growth (Lee, Mohamad and Ramayah, 2010)
	Dependency; Power; Risk	Individuals will be more committed if the reward received by each party is proportional to the value of their investments (Huston and Burgess, 1979; Blomqvist, 2002; Lee, Mohamad and Ramayah, 2010)
Interaction approach	Commitment	There is a difference between long term and short term relationships (Haksever, Demir and Giran, 2001)
	Adaptation; Co-evolving; Commitment	The benefits of long term relationships are more difficult to measure compared short term relationships (Haksever, Demir and Giran, 2001)
	Commitment	Long term relationships develop through a series of exchange episodes that reflects past and future interaction (Ford <i>et al.</i> , 1998; Blomqvist, 2002)
	Alignment; Environment	Buyers and sellers are active participants in the interaction (Woo and Ennew, 2004)
	Alignment; Environment;	Characteristics of the organisations and individuals influence interaction (IMP Group, 1982)
	Complementary; Environment	Existing market structure impacts relationships (IMP Group, 1982)
	Alignment; Environment	Position in supply chain impacts relationships (IMP Group, 1982)
	Alignment; Environment	The social system impacts relationships (IMP Group, 1982)
	Commitment; Risk	The length of the relationship impacts the relationship atmosphere (IMP Group, 1982)
	Alignment; Complementary	Expectations of parties impacts the relationship atmosphere (IMP Group, 1982)
	Dependency	The atmosphere determines the power and dependence in a relationship (IMP Group, 1982)
	Alignment; Complementary	The atmosphere determines the state of conflict and cooperation in a relationship (IMP Group, 1982)

After each of the concepts have been deconstructed, Jabareen (2009) explains that the concepts should be categorised according to their characteristics. Following the theme allocation of each concept, the concepts that share similar themes are grouped together. The subsequent categorisation of the themes is included in Table 6.2.

Table 6.2: Categorisation of concepts

Theme	Description	Author(s)
Adaptation	Uniqueness and asset specificity would increase dependence between partners. This means that firms must adapt and customise technologies and systems to the requirements of their partner. Firms must involve their partners with product and service development processes. SMEs receive customer-triggered requirements when larger partners pressure them to increase competitiveness and produce high quality services or products. Firms must learn and adapt to on a short time scale, but SMEs have a larger capacity to launch new products and services and they are inclined to take risks. SMEs are shaped according to a long term vision, however the benefits of long term relationships are more difficult to measure compared short term relationships.	(Sadler-Smith <i>et al.</i> , 2003) (Freiling, 2008) (Pappas <i>et al.</i> , 2007) (Weiss and Minshall, 2014) (Wilson, 1995) (Hallen, Johanson and Seyed-Mohamed, 1991) (Blomqvist, 2002) (Haksever, Demir and Giran, 2001) (Ngugi, Johnsen and Erdelyi, 2010)
Agile	SMEs have agile operations due to a low degree of structural complexity and independency and free from outside control. Management can control the entire business because they have a smaller number of personnel. They do not require extensive formal planning procedures. In order to be agile the must be able to adapt in a dynamic environment, they should re-deploy existing competencies to match emerging markets, and their services should be loosely-coupled independent units of functionality.	(Jennings and Beaver, 1997) (Freiling, 2008) (Damaskopoulos, Vitkauskaitė and Gatautis, 2008) (Leong <i>et al.</i> , 2007) (Blomqvist, 2002) (Narula, 2004) (Dominic <i>et al.</i> , 2011)
Alignment	Goals of partners should be aligned for both firms to be able to achieve their goals. SMEs can access knowledge, resources and skills of larger partners to achieve internal and relationship objectives. The exchange in resources will be motivated by a reward that justifies the cost to firm. Both parties are active participants in the interaction, which means that the characteristics and expectations of the individual firms will influence the interaction, the atmosphere, the state of conflict and cooperation of the relationship. Firms must sense their environment to identify new opportunities. Both the social system and their position in the supply chain will impact relationships. They should be aware of potential partner candidates and know what they can offer.	(Damaskopoulos, Vitkauskaitė and Gatautis, 2008) (Blomqvist, 2002) (Boeck, 2009) (Dwyer, Schurr and Oh, 1987) (Lee, Mohamad and Ramayah, 2010) (Woo and Ennew, 2004) (Nieto and Santamaría, 2010) (IMP Group, 1982) (Canning and Kelly, 2015)
Co-evolving	Firms in partnerships reciprocally affect the evolution of each other by demanding high quality services or products. As a result, SMEs are constantly looking out for ways to improve business processes. Firms adapt to the requirements of their partner by customising technologies and systems to suit them. By involving partners with the product and service development processes, firms receive partner-specific requirements provide learning and growth opportunities. Firstly, partners hold valuable organisational, technical and market knowledge, and secondly, firms will be able to access markets of their partnering firms without excessive investments. Asset specificity increase the dependence between partners, which could lead to long term benefits.	(Freiling, 2008) (Weiss and Minshall, 2014) (Varadarajan, Yadav and Shankar, 2008) (Blomqvist, 2002) (Ngugi, Johnsen and Erdelyi, 2010) (Bocconcelli, Murmura and Pagano, 2018) (Wilson, 1995) (Haksever, Demir and Giran, 2001)
Commitment	Relationships emerge from repeated exchange that reflects past interactions and impacts future ones. Interactions will terminate if the reward is less than the cost, which means that the exchange must be sufficiently profitable for partners to become committed. Firms must communicate to articulate their future intentions, however trust is necessary to justify future benefits and	(Blomqvist, 2002) (Geyskens, Steenkamp and Kumar, 2006) (Lee, Mohamad and Ramayah, 2010) (Huston and Burgess, 1979) (Haksever,

Theme	Description	Author(s)
	immediate costs. Screening the competence and goodwill as well as contract negotiation, enforcement and monitoring increase immediate costs. Higher transaction frequency and commitment reduces complexity and increases stability, which means that the immediate costs will be less. Firms need to adapt to and invest in the relationship in order to show commitment. The length of the relationship will also impact the atmosphere, however the long term benefits and costs are more difficult to measure compared short term benefits and costs. As a result relationships need to be continuously evaluated.	Demir and Giran, 2001) (IMP Group, 1982) (Dyer, 1997) (Blau, 1964) (Luo, 2002) (Liao, 2008) (Ford <i>et al.</i> , 1998)
Complementary	Smaller firms usually have fewer products or services which they master. This deep specialisation complement large firms. They are also stronger in earlier stages of innovation, however they are often dependent on external resources. Large firms can expose them to critical resources and capabilities in order to execute innovations. The knowledge, resources and skills of the partners should complement each other to achieve their goals. This means that the goals and expectations of a partnership should be aligned in order for both firms to achieve their goals simultaneously. The expectations of the partners will determine the state of conflict or cooperation in order to reach the goals.	(Segers, 1992) (Landau, 1987) (Blomqvist, 2002) (Nieto and Santamaría, 2010) (Canning and Kelly, 2015) (Dwyer, Schurr and Oh, 1987) (IMP Group, 1982) (Zaheer, Rehman and Ahmad, 2006)
Cooperative	Partners are able to work jointly in order to achieve their goals. Partners hold valuable organisational, technical and market knowledge. Which means that relationships provide opportunities for firms to learn and improve their products and processes. Resources, applications, services and knowledge are jointly used and shared between partners. Firms are also able to access the markets of their partnering firms.	(Ndou <i>et al.</i> , 2010) (Varadarajan, Yadav and Shankar, 2008) (Bocconcelli, Murmura and Pagano, 2018) (Liu <i>et al.</i> , 2004)
Data	Data is created, exchanged, shared and adapted between partners in real time. Firms must be able to retrieve, store and combine information the accumulated data, and integrate it within their system. As data is transformed across different platforms, firms must be able to handle complex queries from multiple sources. Partners must make an agreement to ensure that data will not be shared with unauthorised third parties. This means that they should define the level of data sharing to not violate regulations on data protection. They are thus required to generate traceable records to deal with data breaches.	(Liu <i>et al.</i> , 2004) (Ndou <i>et al.</i> , 2010) (Tsatsou <i>et al.</i> , 2007) (Herdon, Péntek and Várallyai, 2011)
Dependency	SMEs are often dependent on finance that they acquire through loan funding and available subsidies, as well as external resources. However, for them to leverage the resources from relationships, they need to proportionally invest in it. Adaptations and uniqueness are also required in a relationship for it to grow. At the same time however, it also increases the dependence between partners as transaction specific investments mostly cannot be redeployed. Dependence influences the atmosphere of the relationship and indicates lack of power. SMEs often have underdeveloped organisational structures and a lack of management skills. Consequently they have limited bargaining power.	(Freiling, 2008) (Segers, 1992) (Venkataraman <i>et al.</i> , 1990) (Landau, 1987) (Hallen, Johanson and Seyed-Mohamed, 1991) (Blomqvist, 2002) (IMP Group, 1982)
Environment	The existing market structure, social systems and supply chain position of a firm has an impact on the relationships or potential relationships of a firm. For this reason, firms must sense their environment to become aware of potential partner candidates. The characteristics of a firm also directly impacts the interaction, there firms must be aware of what the partners are able to offer. The costs of searching for partners increases the transaction costs, therefore firms should have a clearly defined, externally visible interface. Firms must also use their environment to scout for valuable knowledge and inputs, and to identify market needs and new opportunities.	(Damaskopoulos, Vitkauskaitė and Gatautis, 2008) (Weiss and Minshall, 2014) (Blomqvist, 2002) (Boeck, 2009) (Dyer, 1997) (Woo and Ennew, 2004) (Leong <i>et al.</i> , 2007) (Dominic <i>et al.</i> , 2011) (IMP Group, 1982)
Flexible	SMEs have flexible and operations because of a smaller number of personnel and non-extensive planning procedures. They have low structural complexity	(Jennings and Beaver, 1997) (Freiling, 2008) (Leong <i>et al.</i> ,

Theme	Description	Author(s)
	as the organisation consists of loosely-coupled independent units of functionality. The owner-managers have to respond professionally to a broad range of different managerial challenges.	2007) (Blomqvist, 2002) (Narula, 2004) (Dominic <i>et al.</i> , 2011) (Zaridis and Mousiolis, 2014)
Growth	SME management is growth oriented and ready to change. They will go beyond the conventional ways on how to do business. Firms need new capabilities to grow. Owner-managers and employees rethink processes and products more frequently and fundamentally as they are constantly looking out for ways to improve business processes. They also have a large capacity both for changing business processes and to launch new products and services. SMEs also need a learning capacity to generate new knowledge as well as enhance existing resources. While they have an advantage in learning and knowledge creation in emerging and risky areas, they are required to learn and adapt to produced and derived knowledge on a short time scale, and they must be able to incorporate knowledge to internal processes.	(Sadler-Smith <i>et al.</i> , 2003) (Freiling, 2008) (Damaskopoulos, Vitkauskaitė and Gatautis, 2008) (Pappas <i>et al.</i> , 2007) (Weiss and Minshall, 2014) (Nieto and Santamaría, 2010) (Blomqvist, 2002) (Canning and Kelly, 2015) (Lee, Mohamad and Ramayah, 2010)
Innovation	SME owner-managers are known to be innovative, as they create new ways to do business and the have an advantage in learning and creating knowledge in emerging and risky areas. They have high innovation potential and are especially suitable for early stages of innovation. This is due to their low structural complexity and large capacity to change business processes. SMEs are constantly on the lookout for ways to improve their processes. They are however required to integrate accumulated data into their system, and incorporate knowledge to their internal processes.	(Sadler-Smith <i>et al.</i> , 2003) (Freiling, 2008) (Blomqvist, 2002) (Weiss and Minshall, 2014) (Nieto and Santamaría, 2010) (Herdon, Péntek and Várallyai, 2011)
Investment	Firms often need to invest in their products, services and processes to suit the specific needs of a partner. Relation specific investments is necessary for a relationship to develop as it is seen as a means of building trust. Firms need to contribute value to a relationship in order to receive rewards. The evaluation of the relationship will determine whether the investment is sufficiently profitable for partners to intensify their involvement. The cost of the partnership and required investment will determine the future intentions of the firms. Transaction specific investments cannot be redeployed which means that if a relationship is terminated, the value of the investments will be lost.	(Sadler-Smith <i>et al.</i> , 2003) (Blomqvist, 2002) (Hallen, Johanson and Seyed-Mohamed, 1991) (Williamson, 2008) (Geyskens, Steenkamp and Kumar, 2006) (Huston and Burgess, 1979) (Lee, Mohamad and Ramayah, 2010)
Knowledge	Knowledge is exchanged between firms and across different platforms. For this reason, relationships is a source of knowledge and provides learning opportunities. Firms must scout their environment for valuable knowledge and inputs. SMEs need a learning capacity to generate new knowledge and enhance existing resources in emerging and risky areas. Firms must learn and adapt to new and existing knowledge on a short time scale. This means that they should have the ability to integrate the accumulated data and knowledge within the system and incorporate it to their internal processes. They also need to externalise and codify their knowledge in the form of process descriptions, documentation and blueprints.	(Venkataraman <i>et al.</i> , 1990) (Liu <i>et al.</i> , 2004) (Herdon, Péntek and Várallyai, 2011) (Damaskopoulos, Vitkauskaitė and Gatautis, 2008) (Pappas <i>et al.</i> , 2007) (Weiss and Minshall, 2014) (Nieto and Santamaría, 2010) (Bocconcelli, Murmura and Pagano, 2018)
Power	Firms must exert influence and assert their position in a relationship by articulating their future intentions. Increased dependency can lead less power in a relationship, however individuals tend to be more committed if the reward received by each party is proportional to the value of their investments. SMEs often have a lack of management skills and consequently they have limited bargaining power.	(Freiling, 2008) (Blomqvist, 2002) (Landau, 1987) (Huston and Burgess, 1979) (Lee, Mohamad and Ramayah, 2010)
Resilient	Firms must be able to adapt and recover quickly in order to survive difficulties in a dynamic business environment. This means that they should be able re-	(Damaskopoulos, Vitkauskaitė and Gatautis,

Theme	Description	Author(s)
	deploy their existing competencies. The organisation will be more resilient if the services are designed as loosely-coupled independent units of functionality.	2008) (Leong <i>et al.</i> , 2007) (Dominic <i>et al.</i> , 2011)
Responsive	SME management is personalised, characterised and deeply impacted by the influence of owner-managers. They are dependent on the entrepreneurial logic, which means they are self-efficient, proactive, and anticipate or recognise up-and-coming developments in the business environment and they identify the consequences of these developments as early and precisely as possible. Both owner-managers and employees rethink processes and products more frequently and fundamentally. The owner-managers are able to respond professionally to a broad range of different managerial challenges as they overlook and control entire business. SMEs do not have extensive hierarchies which means that they do not require extensive formal planning procedures. SMEs are free from outside control and have a low degree of structural complexity. Therefore they are able to re-deploy their existing competencies.	(Freiling, 2008) (Sadler-Smith <i>et al.</i> , 2003) (Jennings and Beaver, 1997) (Damaskopoulos, Vitkauskaitė and Gatautis, 2008) (Pralhad and Bettis, 1986) (Storey, 1994)
Risk	Reciprocal relation-specific adaptations are required to build trust in a relationship as relationships will remain superficial if the exchanges are not unique. Furthermore, a firm must provide investments in order to receive rewards from the relationship. Relation specific adaptations however, increase dependence as transaction specific investments cannot be redeployed. If the reward is less than the cost, the transaction will terminate and if a relationship is terminated, the value of the investments will be lost. Because the exchange is motivated by a reward that justifies the cost, the exchange must be sufficiently profitable in for partners to intensify involvement. SMEs are often dependent on external finance, however SME owner-managers are inclined to take risks. Firms will be more committed if the reward they receive from the relationship is proportional to the value of their investments. A firm must therefore believe that their partner will act in their best interests. It is often assumed that every action and decision made by a party are motivated by self-interest, and that a party will always aspire to break an agreement if benefits are available. Individuals are also not able to receive, store, retrieve, and process information without error. Trust reduces these complexities, however individuals are not able to accurately predict the future and make allowance for every possible outcome, furthermore the contingencies surrounding a transaction are unpredictable. This means that contract negotiation, enforcement and monitoring increase transaction costs as well as the screening of competence and goodwill of potential partners. The frequency of transaction frequency impact the transaction costs as the length of the relationship impacts the relationship atmosphere. The risk associated with the relationships are influenced by the cost of transactions.	(Sadler-Smith <i>et al.</i> , 2003) (Landau, 1987) (Venkataraman <i>et al.</i> , 1990) (Zaheer, Rehman and Ahmad, 2006) (Wilson, 1995) (Hallen, Johanson and Seyed-Mohamed, 1991) (Williamson, 2008) (Dyer, 1997) (Blomqvist, 2002) (Geyskens, Steenkamp and Kumar, 2006) (Lee, Mohamad and Ramayah, 2010) (Blau, 1964) (Luo, 2002) (Liao, 2008) (Huston and Burgess, 1979) (IMP Group, 1982) (Hallikas, Virolainen and Tuominen, 2002)
Strategy	SMEs often have proactive strategies as they are able to anticipate and recognise up-and-coming developments in the business environment, they recognise the need for a partnerships and they are able to identify the consequences of developments early and precisely. SMEs are shaped according to the vision of the firm instead of adapting to the 'given' circumstances. Firms must search their environment to identify market needs and new opportunities and potential partners, however searching costs increases the costs related to a transaction. SMEs must find attractive positions in niche markets, as they usually have limited scope in terms of products or services, target a small customer base to whom they are close and they have a deep specialisation.	(Freiling, 2008) (Zaheer, Rehman and Ahmad, 2006) (Dyer, 1997) (Landau, 1987) (Damaskopoulos, Vitkauskaitė and Gatautis, 2008) (Weiss and Minshall, 2014) (Nieto and Santamaría, 2010) (Canning and Kelly, 2015) (Blomqvist, 2002)
Transparency	The level of transparency increases between partners, as data and knowledge are shared, exchanged and created in real time. Firms must be handle complex data including the retrieval, storage and integration of accumulated	(Venkataraman <i>et al.</i> , 1990) (Zaridis and Mousiolis, 2014) (Liu <i>et al.</i> , 2004) (Ndou <i>et al.</i> ,

Theme	Description	Author(s)
	information. Due to the transparency, firms should be in agreement on the level of data sharing to not violate regulations on data protection, and also to ensure that data will not be shared with unauthorised parties. This requires firms to be able to exert influence and assert their position in a relationship. There is also greater transparency within SMEs due to smaller number personnel and non-extensive hierarchies. They do however need to establish process descriptions, documentation and codification of knowledge in the form of blueprints.	2010) (Tsatsou <i>et al.</i> , 2007) (Johnsen and Ford, 2006)
Trust	Relationships emerge from repeated exchange where both parties have invested in the relationship. Reciprocal adaptations are thus seen as a means of building trust. Firms need to communicate and articulate their future intentions for the relationship. It can be assumed that a party will always aspire to break an agreement if benefits are available, however trust can be used to justify expected benefits in future. Trust reduces complexity and is essential for stability which can make partners must believe that the other will act in their best interest. Partners should establish agreements to prevent misuse, however contract negotiation, enforcement and monitoring increase transaction costs. Trust and commitment reduce the costs related to screening the competence and goodwill of potential partners and it reduces the contract complexity.	(Tsatsou <i>et al.</i> , 2007) (Blomqvist, 2002) (Wilson, 1995) (Hallen, Johanson and Seyed-Mohamed, 1991) (Dyer, 1997) (Hallikas, Virolainen and Tuominen, 2002) (Geyskens, Steenkamp and Kumar, 2006) (Blau, 1964) (Luo, 2002) (Liao, 2008) (Huston and Burgess, 1979)
Shared	Firms hold valuable organisational, technical and market knowledge which they share in relationships. Firms also use and share resources, applications and services that are embedded in their relationships. Through the sharing of resources and knowledge, rich data is created within relationship which is also transformed and shared across different platforms. Partners should however agree on the level of data sharing to prevent regulation violations and misuse.	(Liu <i>et al.</i> , 2004) (Ndou <i>et al.</i> , 2010) (Tsatsou <i>et al.</i> , 2007) (Bocconcelli, Murmura and Pagano, 2018)
Uncertainty	Uncertainty will always be present in relationships as the contingencies surrounding a transaction is unpredictable. This is because individuals are not able to accurately predict the future and make allowance for every possible outcome. Furthermore, individuals cannot receive, store, retrieve, and process information without a certain level of error. Uncertainty also increases due to the possibility that the decisions of the partners are motivated by self-interest, and that they will always aspire to break an agreement if benefits are available.	(Williamson, 2008) (Blomqvist, 2002) (Hallikas, Virolainen and Tuominen, 2002) (Geyskens, Steenkamp and Kumar, 2006)

6.2.3. Step 4: Integrating concepts

The aim of Step 4 is to integrate and group together concepts that have similarities. The reason for the integration is to reduce the number of concepts drastically, and to whittle it down to a reasonable number of concepts (Jabareen, 2009).

The concepts were integrated by grouping together the themes that had the strongest interrelations. A theme was grouped with another theme if they were simultaneously related to at least five concepts, which is considered high in comparison to other interrelations. The interrelations between the themes are displayed in Figure 6.2.

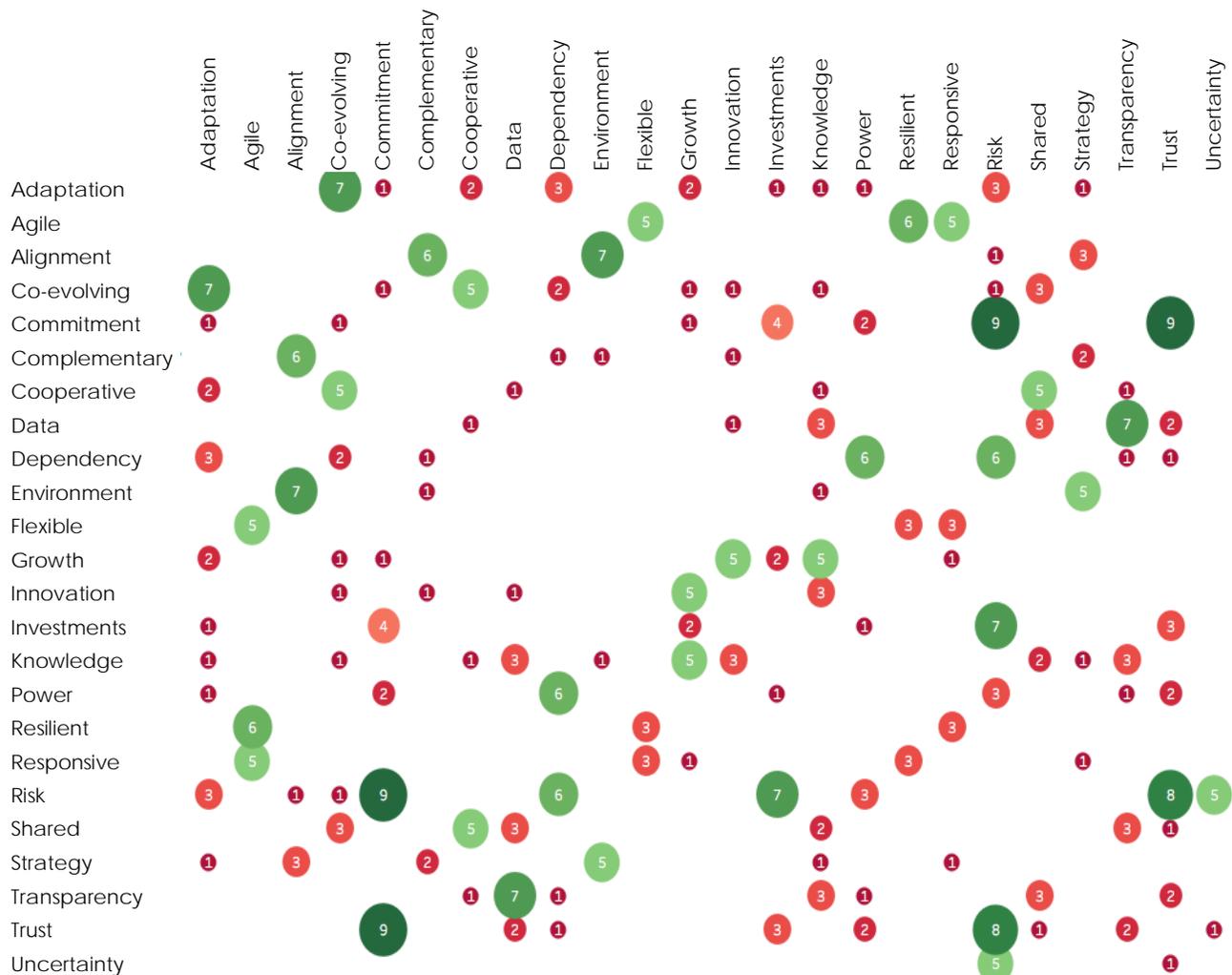


Figure 6.2: Theme interrelations

The interrelations of the themes that are indicated with green circles in Figure 6.2 are considered to be strongly related to one another. These strong interrelations are included in Table 6.3.

Table 6.3: Interrelations per theme

Theme	Interrelated themes
Adaptation	Co-evolving
Agile	Flexible – Resilient – Responsive
Alignment	Complementary – Environment
Co-evolving	Adaptation – Cooperative
Commitment	Risk – Trust
Complementary	Alignment
Cooperative	Co-evolving – Shared
Data	Transparency
Dependency	Power
Environment	Alignment – Strategy
Flexible	Agile
Growth	Innovation – Knowledge
Innovation	Growth
Investments	Risk
Knowledge	Growth
Power	Dependency – Risk
Resilient	Agile
Responsive	Agile
Risk	Commitment – Dependency – Investments – Trust – Uncertainty
Shared	Cooperative
Strategy	Environment
Transparency	Data
Trust	Commitment – Risk
Uncertainty	Risk

If the interrelations as described in Table 6.3 are combined, networks of themes are formed. These networks thus present a natural way to integrate the themes. The integrated themes consequently represent the relational requirements, which are included in Table 6.4. Each of the relational requirements represents an important condition that a relationship is required to have within ecosystem environments. This means that it addresses critical relational issues related to SMEs in dynamic business ecosystem environments. It is important to note that the relational requirements are interdependent and that complex interrelations exist between them. Identifying the relational requirements according to Jabareen's (2009) proposed method however, requires the categorisation and subsequent simplification of the relationships between the themes.

Table 6.4: Integration of concepts

Relational requirement	Interrelated themes	Description
Goal congruency	<i>Alignment; Strategy; Complementary; Environment</i>	In B2B relationships, partners work together towards reaching a common goal (Dwyer, Schurr and Oh, 1987; Archer and Yuan, 2000; Bryant and Colledge, 2002; Gadde, 2004). The level of goal congruency refers to the possibility for both firms to achieve their goals simultaneously (MacKenzie, 1992). According to Cuevas, Julkunen and Gabrielsson (2015), goal congruency can be viewed as a prerequisite for developing relationships of trust. If partnerships are goal congruent, the firms will view joint action as mutually beneficial (Naudé and Buttle, 2000).
Trust	<i>Commitment; Risk; Dependence; Uncertainty; Power; Investment; Trust</i>	Trust is widely associated with successful B2B relationships. Cooperation between partners, as well as the willingness for future collaboration, can arise directly from a strong relationship of trust. Conversely, conflict and uncertainty can be seen as a direct consequence of lack of trust (Pruitt, 1981; Morgan and Hunt, 1994).
Collaboration	<i>Co-evolving; Cooperative; Adaptations; Shared</i>	B2B relationships are increasingly involving the sharing of resources, allowing firms to create and share mutual benefits (Kandampully, 2003). Firms with complementary capabilities and expertise are connected, providing the opportunity for mutually complementary action in pursuit of a common goal (Cunningham and Culligan, 1991).
Flexibility	<i>Responsive; Agile; Resilient</i>	B2B relationships are becoming increasingly agile and adaptive as they have the need to support faster and more flexible responses to constantly changing customer needs. Due to the dynamic business environment, B2B relationships need to be resilient and anti-fragile in order to display self-organising, flexible qualities that are capable of reconfiguring and overcoming shocks and disruptions (Canning and Kelly, 2015).
Learning	<i>Transparent; Innovation; Knowledge; Data; Growth</i>	Knowledge and data is created and exchanged between partners, offering various opportunities for firms to learn and increase their own internal knowledge. Firms must be able to integrate new data and knowledge within their systems and incorporate it into their internal processes (Herdon, Péntek and Várallyai, 2011).

6.2.4. In conclusion: Overview of the CFA process

Throughout the activities of Steps 2 to 4 of Jabareen's (2009) CFA process, five relational requirements have been identified. These requirements represent what SMEs must be able to achieve in their B2B relationships if they operate in business ecosystems. With reference to systems engineering, which forms the underlying strategy of the research methodology, these requirements are considered to be the sub-problems (as displayed in Figure 6.3).

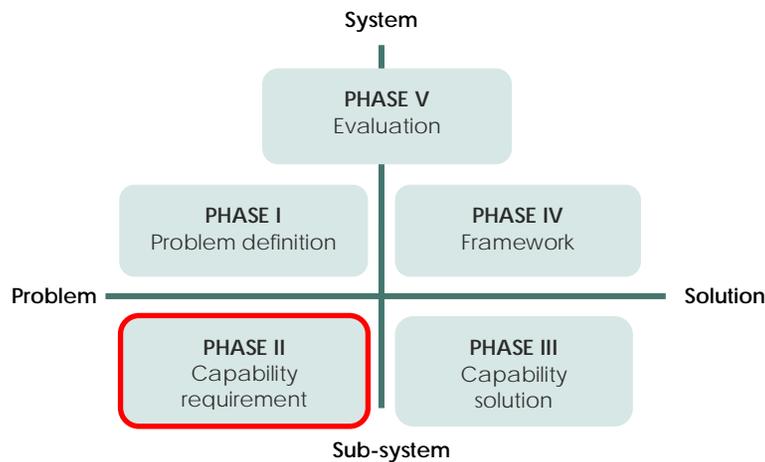


Figure 6.3: Systems engineering development

The next phase of systems engineering involves finding solutions to each of the sub-problems.

6.3. Identification of relational capabilities

After the relational requirements have been identified, it is necessary to determine solutions for each of the requirements. The solutions in this context refer to a means of dealing with a specific relationship requirement. In this case, the solutions are in the form of relational capabilities. The relational capabilities refer to the organisational means through which the relationship requirements are addressed. The relational capabilities thus identify certain internal capabilities that SMEs would require to satisfy the relationship requirements. Figure 6.4 graphically depicts how each relationship requirement is converted into the related solutions in the form of relational capabilities.

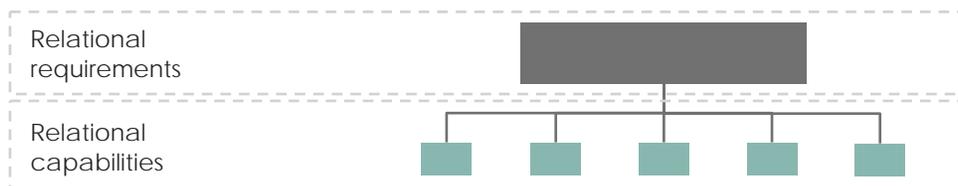


Figure 6.4: Identification of relational capability solutions

The capabilities as discussed in the following section are not in the format in which it was found in literature, but rather derived from texts that are often seemingly unrelated to the topic of research. The capabilities are however, included due to their combined fundamental contribution to the objective of this study. In an effort to keep the discussion as concise as possible, the solutions are only stated briefly together with the appropriate references. If more detail is required of a particular requirement, the referenced text should be consulted. The relationship requirements that will be addressed in the following section, as it has been identified through the CFA process, include the following:

- Goal congruency;
- Trust;
- Collaboration;
- Flexibility; and
- Learning.

6.3.1. Goal Congruency

The compatibility of goals and strategic orientation of partnering firms is an important dimension of relationship sustainability and success (Farrelly and Quester, 2005). In a relationship, each firm must establish measurable goals that are aligned with their own internal strategy. In order to align the expectations of the firms, partners need to establish common goals and reach a shared vision (Lambert and Enz, 2012). Barratt (2004) explains that this requires firms to develop close information exchange-based relationships not only at operational level, but also at tactical and strategic levels. Open and efficient communication enables partners to align their expectations. If the goals are clearly defined and communicated, the evaluation of the related tasks, risks and performance will be simplified (Goodman and Goodman, 1976). Reaching a shared vision and goals for the relationship require a multi-layered and iterative communication process where both partners try to understand the other on an individual and organisational level (Blomqvist, 2002).

In this regard, internal strategy becomes an important consideration for SMEs. It is often found that strategy emerges as a result of the owner-manager's choices. It is however rare that SMEs achieve sustainable growth without an active strategy and conscious decision making (Smallbone, Leig and North, 1995). Firms need to develop and adapt their business models, as well as strategies to keep pace with the dynamic business environment. According to Rajgopal, Venkatachalam and Kotha (2002), alliances and strategic partner selection are increasingly becoming important considerations for a firm to employ in their strategy (Dai and Kauffman, 2005). Partner selection is an important step in the partnership formation process (Blomqvist, 2002). It has been emphasised that selecting the right partner is critical to the partnership (Wang and Kess, 2006). Geringer (1991) explains that variables such as a partner's culture, favourable past associations, compatibility of and trust between partners and organisational size or structure should be considered in a firms partnering selection strategy.

To understand the dynamic market structures and shifting demands, and to become aware of potential partners, firms need to continuously screen and monitor their external and internal environments (Pisano, 1990; Johnsen and Ford, 2006). Grönroos (1994) suggests that relationship-based marketing is required to establish, maintain, and enhance the firm's attractiveness towards existing or potential partners in this environment (Barac *et al.*, 2017). Media visibility has also been identified as one of the critical factors that can influence and enhance a firm's reputation (Capriotti, 2009). New levels of transparency and new tools for establishing and checking reputations are helping to keep behaviour in line (Canning and Kelly, 2015).

Based on the above discussion, the capability solutions for a goal congruent relationship can be summarised as the following:

- **GC1:** Establish shared relationship vision and goals;
- **GC2:** Organisational vision and goals;
- **GC3:** Developing partnering strategy;
- **GC4:** Identify potential partners;
- **GC5:** Reputation and external visibility;
- **GC5:** Attract potential partners; and
- **GC6:** Market knowledge.

6.3.2. Trust

In small firms, an owner-manager with a trustworthy character may induce a trusting culture that will be adopted throughout the firm. This means that the perception of trustworthiness of an SME is mostly indicated by the behaviour of the owner-manager (Christensen, 1997). It is thus the responsibility of management to consciously exhibit trustworthy behaviour in order to create an environment that encourages trust (Whitener *et al.*, 1998). The boundary spanner is also an important consideration, as individuals often display more commitment to the people within the firm rather than the firm itself (Blomqvist, 2002). The boundary spanner can be described as the person that cements the partnership by building trust and commitment between partners. They often do not have official authority, but rather rely on trust and cooperation. Boundary spanners should be chosen based on their ability to engage with others, while displaying effective relational and interpersonal competencies (Williams, 2002). Ford *et al.* (1998) further suggests that they should have knowledge of their partner's context.

Trust and commitment will both increase through positive experiences. This indicates that the perception of relationship performance has a powerful effect on commitment and relationship satisfaction. This consequently highlights the importance for firms to continuously measure and monitor relationship performance (Luhmann, 1979; Lewis and Weigert, 1985; Larson, 1992; Ring and Van de Ven, 1992; Jap and Ganesan, 2000; Blomqvist, 2002). Firms should make an effort to sustain a unique value offering. If the value offering within a partnership is readily available elsewhere, there is less dependence between the firms and subsequently less commitment. As commitment and trust are strongly interrelated, firms will need to invest in a relationship in order to manifest commitment (Gounaris, 2003). Relationship specific investments however, raise concerns about the possible related risks. These risks primarily centre on the loss of investment or unsatisfactory return on investment. This means that firms should identify, evaluate and monitor the strategic, operational, reputational, regulatory, and information risks related to their relationships (Sutton *et al.*, 2008).

Trust is often viewed as an informal way to protect intellectual property in a partnership. While SME owner-managers often prefer to use informal methods to protect their intellectual property, they should find a balance in allocating their resources to both the development of new products and the formal (*i.e.* legal) protection of existing products (Kitching and Blackburn, 1998).

Based on the above discussion, the capability solutions for a relationship to become trustworthy can be summarised as the following:

- **T1:** Establish trustworthiness through behaviour;
- **T2:** Boundary spanner;
- **T3:** Measure relationship performance;
- **T4:** Create and sustain unique value offering;
- **T5:** Investment in relationships;
- **T6:** Relationship risk assessment; and
- **T7:** Managing intellectual property.

6.3.3. Collaboration

Diversity in knowledge and capabilities in relationships is necessary for firms to create new combinations of technologies and knowledge. The diversity however, is often a source of friction in a relationship (Nelson and Winter, 1982; Metcalfe, 1994; Blomqvist, 2002; Nieto and Santamaría, 2007). The diversity in a partnership must be understood both implicitly and explicitly in order to overcome the possible friction created by the diversity, and to leverage the synergistic knowledge bases (Blomqvist, 2002). According to Johnsen and Ford (2006), firms struggle to adapt to a relationship if the partners do not understand the context of the other or if there is a lack of common processes and standards. Inter-firm skill formation is thus advantageous to cover different stages of training, including setting of standards, delivery of training, monitoring of progress, and assessment or certification. Firms should therefore coordinate training with partnering firms based on an assessment of the relationship needs (Gospel and Foreman, 2006).

In order to sustain value co-creation, value propositions and mutual opportunities need to be identified continuously over the relationship lifecycle. Through interaction during joint value creation processes, new needs and value offerings should be communicated, and expectations adjusted (Lambert and Enz, 2012). 2011). Firms are often required to make certain behavioural or organisational modifications to meet the specific needs of their partner (Brennan, Turnbull and Wilson, 2003). These relation specific adaptations need to be aligned with the strategic goals of both the firm and the relationship (Mohr and Spekman, 1994; Mudambi and Helper, 1998; Boeck, 2009).

Value is co-created through the collaborative integration, and coordination of assets and resources (Canning and Kelly, 2015). Grönroos and Ravald (2011) defined two types of value co-creation namely open and closed. During open value co-creation, a firm can access the value creation process of their partner. During the closed part, partnering firms work individually on the required activities. For both open and closed value co-creation, continuous communication and coordination between firms are necessary. In order to facilitate cross-functional interaction, dedicated support structures, as well as governance structures have been highlighted (Lambert andENZ, 2012). Trust, mutual space and time to collaborate has been emphasised to create and transfer knowledge between firms (Miles, Snow and Miles, 2000).

Based on the above discussion, the capability solutions for a collaborative relationship can be summarised as the following:

- **C1:** Interpret and contextualise partner diversity;
- **C2:** Understand partner requirements;
- **C3:** Identify mutual opportunities;
- **C4:** Relation specific adaptations;
- **C5:** Bi-lateral knowledge creation; and
- **C6:** Leverage external resources.

6.3.4. Flexibility

B2B relationships increasingly need to support faster and more flexible responses to the dynamic business environment (Canning and Kelly, 2015). Fast and dynamic decision making is more successfully undertaken in organic, decentralised, flat structures (Smith, Binns and Tushman, 2010). Due to the fast-paced nature of B2B relationships, organisational boundaries should be defined in a more flexible way in order to facilitate a greater level of interdependence across different functions within a firm (Christensen and Overdorf, 2000; Smith, Binns and Tushman, 2010). Firms are also required to undertake experimental evaluation of products, services and processes, without any major disturbance to the functioning of their firm (Blomqvist, 2002).

Employee knowledge is particularly valuable in decision making and problem solving. Cross functional communication and worker involvement require that employees have a certain level of interdisciplinary knowledge (Laursen and Mahnke, 2001). Practices to enhance interdisciplinary knowledge include

interdisciplinary work groups, job rotation, delegation of responsibility and integration of functions (Ichniowski, Shaw and Prensushi, 1997; Baron and Kreps, 1999). Employees should also be given an appropriate level of freedom and autonomy to make decisions. This requires a reflective capacity that is achieved through engendering trust among co-workers, supporting risk-taking, reducing fear of failure, rewarding courage, and viewing mistakes as opportunities to learn (Preskill and Torres, 1999).

Different relationships imply different value creating mechanisms. This means that firms may find it desirable to consciously structure a balanced set of relationships. By better coordination of relationships, firms avoid excessive dependence on one partner, thus making their relationships more resilient (Krapfel, Salmond and Spekman, 1991). By diversifying relationship portfolios, firms are able to adapt more easily to changing customer needs. Relationship portfolios are developed over time, and it should therefore eventually become an integral function of the underlying firm, customer, and industry characteristics (Johnson and Selnes, 2004). It is also necessary for firms to assign resources to their relationships in the most profitable way, by aligning and integrating relationship activities (Lambert and Enz, 2012).

The final requirement to ensure flexibility in relationships is the contracting policies of a firm. Explicit contracts are often complex which reduces flexibility (Jap and Ganesan, 2000). Complex contracts are often used to avoid cooperation problems between partners and to regulate behaviour (Zhao, Feng and Li, 2018). Relational contracts however, require flexibility and collaboration through only loosely defined obligations, leaving room for innovation (Wißotzki *et al.*, 2014). Complex contract negotiation and enforcement could however, often only be avoided once trust between partners increase and the risk of opportunistic behaviour decrease (McKnight, Cummings and Chervany, 1998; Reuer and Ariño, 2007; Zhao, Feng and Li, 2018).

Based on the above discussion, the capability solutions for a flexible relationship can be summarised as **the** following:

- **F1:** Adaptable and flexible organisational structure;
- **F2:** Product / process experimentation;
- **F3:** Interdisciplinary knowledge;
- **F4:** Individual reflective capacity;
- **F5:** Allocate internal resources to relationship;
- **F6:** Managing relationship portfolios; and

- **F7:** Establishing contracting policy.

6.3.5. Learning

Collaboration and joint projects involve high levels of knowledge exchange and technology transfer among partners. It is critical for a firm to leverage information from internal and external sources in order to build the organisational knowledge required for innovation (Pisano, 1990; Doz and Hamel, 1998). Ounjian and Carne (1987) identified the role of people and person-to-person communication as one of the most important dimensions in relation to knowledge transfer between firms. This means that knowledge transfer is affected by any factor that either encourages or obstructs inter-personal communications (Roberts, 2000). Practices to enable communication between firms include increased socialisation, assigning boundary-spanning roles and the centralised management of communication (De Meyer, 1991). While core capabilities can be transferred formally and explicitly, much of the knowledge has rich tacit dimensions. Certain mechanisms such as teaching, mentoring and storytelling promote the transfer of the tacit dimensions of knowledge and encourage learning in individuals (Swap *et al.*, 2001).

Just as knowledge is transferred between firms, it is equally as important to transfer knowledge within the firm. This refers to the ability to transfer knowledge quickly and effectively from one part of the firm to other parts in order to solve problems or to provide new and creative insights (Goh, 2002). To enable internal knowledge transfer, firms should establish processes that reward, and encourage regular, transparent and open horizontal communication and information sharing (Davenport and Prusak, 1998). Furthermore, they need to invest time and resources in training, teaching and mentoring employees to build close relationships with equivalent skills and knowledge capacities (Goh, 2002).

The formal or explicit part of knowledge transfer requires knowledge to be externalised and documented. This enables collaboration in a time and space independent manner (Chau, Maurer and Melnik, 2003). Knowledge externalisation and the maintenance thereof can be time-consuming and resource intensive. Firms should therefore prioritise and implement agile methods such as *lean* or “*just enough*” documentations. They should also take care of the quality and presentation of documentation, as these are factors that reflect the perceived trustworthiness and competence of firms (Blomqvist, 2002; Chau, Maurer and Melnik, 2003).

Similar collaboration and information sharing is also occurring in the domain of data. The volume of data that is produced in business activities and within relationships is only increasing. As a result, the opportunities to learn and create value will proliferate (Canning and Kelly, 2015). If a firm is to exploit the potential of data, they will be required to investigate data-handling tools and methods outside their structures, and they should be prepared to actively incorporate data in their decision-making processes (European Commission, 2014). Business strategy should be taken into account in the development of data and analytics infrastructure. Insights gained from the capturing and analysis of data should also be used to guide future strategies (Kiron, Prentice and Ferguson, 2012; Coleman *et al.*, 2016).

Before implementing data infrastructures, a firm should assess the current state of maturity regarding the management and use of data (Coleman *et al.*, 2016). In order for a firm to effectively gather and use data for decision making, they will require an adequate system to capture, curate, manage, and process the data (Schaeffer and Olson, 2014). Furthermore, the analytics will continue to get smarter and more predictive (Canning and Kelly, 2015). There are however, several technologies (e.g. *Google Analytics*®) available to SMEs to support analytics for specific applications (Schaeffer and Olson, 2014). The sharing of data however, raises critical issues regarding privacy and misuse, especially when the data contains sensitive information. This means that firms will need to implement adequate safety and security architectures (Kagermann, Wahlster and Helbig, 2013).

Based on the above discussion, the capability solutions for a learning relationship can be summarised as the following:

- **L1:** Managing internal tacit knowledge;
- **L2:** Internal communication and information flow;
- **L3:** Managing external tacit knowledge;
- **L4:** Communication and the flow of information between partners;
- **L5:** Data and information externalisation;
- **L6:** Capturing, storing and retrieving data;
- **L7:** Data analysis;
- **L8:** Data exploitation strategy; and
- **L9:** Data security architectures.

6.4. Summary of relational capability solutions

Through the discussions of the solutions to each of the relational requirements, a total of 36 relational capabilities have been identified. Each capability addresses a critical aspect that a firm is required to do to enable them to relate to other firms more successfully. A summary of the identified capabilities are included in Table 6.5

Table 6.5: Summary of relational capability requirements

Req.	Theme Code	Relational capability description
1	<i>GC1</i>	Establish shared relationship vision and goals;
2	<i>GC2</i>	Organisational vision and goals;
3	<i>GC3</i>	Developing partnering strategy;
4	<i>GC4</i>	Identify potential partners;
5	<i>GC5</i>	Reputation and external visibility;
6	<i>GC6</i>	Attract potential partners; and
7	<i>GC7</i>	Market knowledge.
8	<i>T1</i>	Establish trustworthiness through behaviour;
9	<i>T2</i>	Boundary spanner;
10	<i>T3</i>	Measure relationship performance;
11	<i>T4</i>	Create and sustain unique value offering;
12	<i>T5</i>	Investment in relationships;
13	<i>T6</i>	Relationship risk assessment; and
14	<i>T7</i>	Managing intellectual property.
15	<i>C1</i>	Interpret and contextualise partner diversity;
16	<i>C2</i>	Understand partner requirements;
17	<i>C3</i>	Identify mutual opportunities;
18	<i>C4</i>	Relation specific adaptations;
19	<i>C5</i>	Bi-lateral knowledge creation; and
20	<i>C6</i>	Leverage external resources.
21	<i>F1</i>	Adaptable and flexible organisational structure;
22	<i>F2</i>	Product / process experimentation;
23	<i>F3</i>	Interdisciplinary knowledge;
24	<i>F4</i>	Individual reflective capacity;
25	<i>F5</i>	Allocate internal resources to relationship;
26	<i>F6</i>	Managing relationship portfolios; and
27	<i>F7</i>	Establishing contracting policy.

Req.	Theme Code	Relational capability description
28	L1	Managing internal tacit knowledge;
29	L2	Internal communication and information flow;
30	L3	Managing external tacit knowledge;
31	L4	Communication and the flow of information between partners;
32	L5	Data and information externalisation;
33	L6	Capturing, storing and retrieving data;
34	L7	Data analysis;
35	L8	Data exploitation strategy; and
36	L9	Data security architectures.

The relational capabilities as summarised in the table above, represent the solutions to each of the sub-problems that were identified. As displayed in Figure 6.5, the relational capabilities form part of the third systems engineering phase.

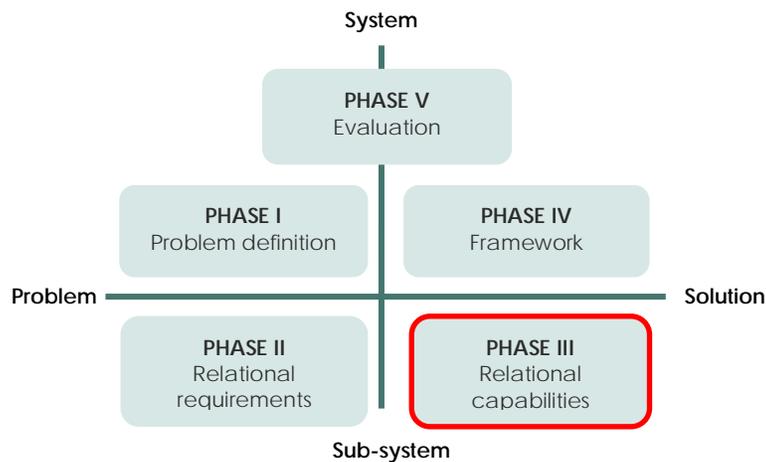


Figure 6.5: Systems engineering development

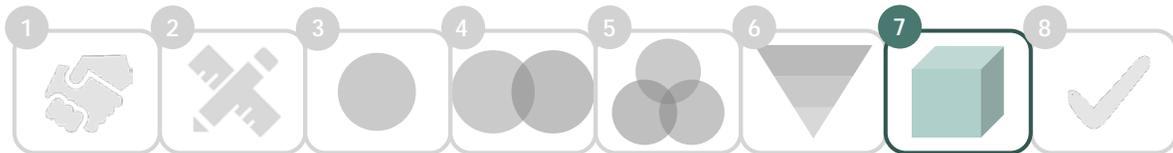
The following phase thus requires the relational capabilities to be synthesised into a framework to develop a whole solution.

6.5. Chapter conclusion

This chapter used the inputs from the literature base to identify the relational capabilities that SMEs require to form partnerships in ecosystems. The identification process followed the CFA process as proposed by Jabareen (2009). The processes first identified five relationship requirements that represent the conditions that a relationship is required to have in order to function as needed in ecosystems. These requirements were then converted into 36 relational capabilities, which refer to the organisational means through which the relationship requirements are addressed. The 36 capabilities are the primary input for the framework that is developed within the following chapter.

7. Consolidation of relational capabilities

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This chapter presents the consolidation of the relational capabilities as they were defined in the previous chapter. The capabilities are consolidated into a conceptualisation that will enable firms to identify and improve their relational capabilities. A framework is developed at a conceptual level, after which a maturity modelling approach is proposed as a tool to implement the framework.

7.1. Consolidation through conceptualisation

Through the activities of Chapter 6, a total of 36 relational capabilities have been identified (see Table 6.5, p. 107). These capabilities however, provide little value as-is. Currently, the required content is addressed through the capabilities, but the structuring thereof does little to guide a firm to identify or improve these capabilities. For this reason, the 36 relational capability solutions need to be consolidated into a conceptualisation.

The conceptual output needs to be aligned to the purpose of the research, which is aimed at guiding a South African SME to identify and improve the capabilities required to develop B2B relationships in business ecosystems. In Figure 7.1, the relationship between each of the theoretical domains and the conceptual output is displayed. Firstly, the objective refers to the main objective which is to improve SME success in business ecosystems. Secondly, the scope of the transformation refers to the user, which is in this case a South African

SME. Lastly, the transformation refers to the transformation of an SME's B2B relationships in order to reach the objective. The transformation implies that there needs to be a snapshot of its current state, a representation of a possible future state, as well as a plan to move from the one to the other.



Figure 7.1: Relevance of theoretical foundation and conceptual output

As explained in Chapter 2, the output of this study constitutes two parts. The first part aims to structure the capabilities into a conceptual framework. The second part aims to develop a tool that will enable the user to implement the framework. The remainder of this chapter thus describes the construction of the framework, after which an appropriate improvement process is proposed. The framework as developed in this chapter presents the preliminary framework. The framework will be subject to a series of validation activities that is included in proceeding Chapter 8.

7.2. Part 1: Constructing the framework

The purpose of a conceptual framework is twofold. Firstly, it needs to identify the specific factors relevant to the problem. Secondly, it needs to illustrate how each factor might affect the desired results. Through the activities of Chapter 6, various relational capabilities have been identified. These capabilities are regarded as the factors relevant to addressing the proposed research problem, thus satisfying the first part of the framework purpose. This means that that the framework must be structured so as to illustrate how each of these capabilities could contribute to solving the main research problem.

7.2.1. Outline of the Relational Capability Framework

The structure of the framework needs to address multiple dimensions of relational capability throughout various parts of an organisation. Furthermore, complex interrelations exist between the relational capabilities. For this reason, it was decided to construct the framework along two dimensions, the organisational construct and the relational construct. The structure is largely based on the structure of the Innovation Capability Maturity Model (ICMM) as developed by Essmann (2009). The ICMM guides its users to address the maturity of innovation capability, while considering the multiple dimensions of innovation, and the different parts of the organisation that is affected. The model is also designed with the applicability and practicality factor in mind. Relational capabilities share various fundamental aspects with innovation capabilities in the sense that it is multi-dimensional, dynamic and complex. The ICMM is consequently considered to be a suitable reference to structure relational capabilities. The structure that forms the Relational Capability Framework (RCF) is displayed in Figure 7.2.

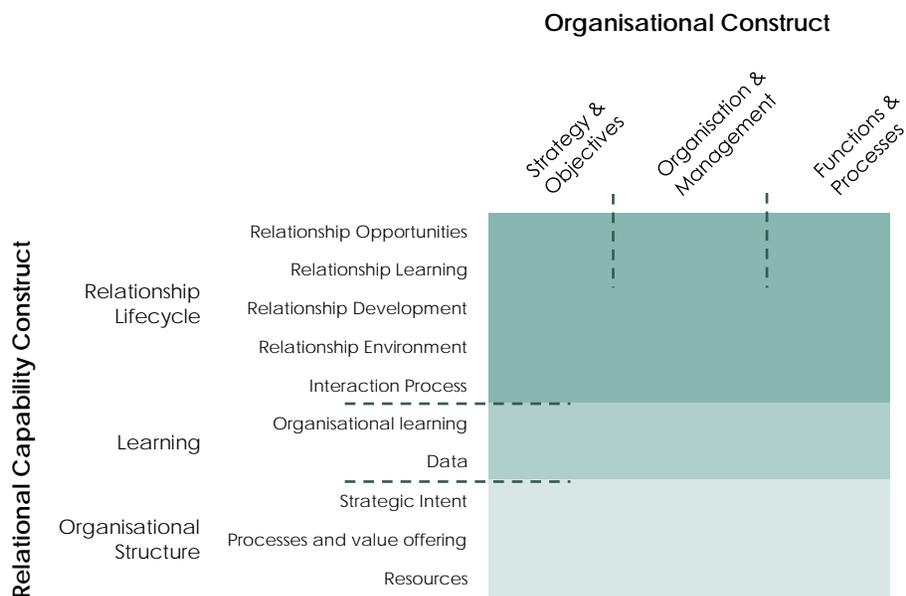


Figure 7.2: RCF structure, adapted from Essmann (2009).

As displayed in Figure 7.2, the RCF comprise two axes which include (1) Relational capability construct; and (2) Organisational construct. A discussion of each follows in the sections below.

7.2.1.1. *Relational capability construct*

The first dimension of the model structure is the Relational capability construct. The Relation capability construct can be described in two levels of detail. The high-level components are referred to as the Relational capability construct *areas*, while the next level is referred to as the Relational capability construct *items*. The Relational capability construct includes three areas:

- i. **Relationship lifecycle** – Relationships are not static, but rather evolves through a series of stages. This capability area refers to the practices, procedures and activities that are executed at the initiation of the relationship, through the growth phases of the relationship and the continuous interaction in the relationship.
- ii. **Knowledge and information** – The transfer of knowledge between partners and the subsequent learning within a firm is a fundamental part of B2B relationships. This process area addresses the capabilities to identify, acquire and manage knowledge. Also included is the organisation’s ability to capture, manage and utilise valuable data that is accumulated in the relationship.
- iii. **Organisational structure** – The infrastructure, resources, strategy, policies and management necessary to support the relationships, and knowledge and information requirements.

The three areas of relational capability each comprise a number of items. These items provide more detail of the high-level Relational capability construct areas. The items provide the main categories according to which the relational capability requirements are divided. A description of each item with its corresponding area is included in Table 7.1.

Table 7.1: Descriptions of Relational capability construct items

Area	Item	Description
Relationship lifecycle	Relationship opportunities	Searching and identifying new opportunities, being receptive to new ideas and determining the possible implications of these opportunities.
	Relationship learning	Translating and contextualising differences between partners. Leveraging these differences to realise joint opportunities and benefits.
	Relationship development	Creating and sustaining value to intensify the relationship.
	Relationship environment	Being aware of the environmental aspects that can influence relationships. Activities to enhance positioning within market.
	Interaction process	Establishing interactive channels and managing information that is transferred within relationship.
Knowledge and information	Organisational learning	Absorbing, contextualising and consolidating relevant information and knowledge.
	Data	Capturing, storage, exploitation and management of data that accumulates from relationship activities.
Organisational structure	Strategic intent	Developing and conveying a specific strategy that incorporates relational objectives, and championing and encouraging trustworthy behaviour.
	Process and value offering	Ensuring that the processes to create value are flexible and adaptable, and the necessary infrastructure is available to facilitate value creation processes.
	Resources	Investing in relationships, aligning resources with relationship requirements and appropriately measuring processes and outputs related to relationships.

7.2.1.2. *Organisational construct*

Essmann (2009) adds the Organisational construct dimension to the ICMM as a practical solution to ensure the comprehensiveness of the model while minimising repetitiveness. The Organisational construct dimension aims to ensure that the model addresses all the different parts of an organisation that is affected by the capabilities. Essmann (2009) identified the Organisational construct areas by combining various fundamental organisational elements from a range of works, including those of Zachman (1987); Zairi (1995); Williams and Li (1998); IFIP-IFAC (1999); and Mugge (2006).

This Organisational construct thus depicts the impact of the capability requirements on the different fundamental parts of an organisation. The Organisational construct areas as defined by Essmann (2009) have been modified to suit the needs of the RCF. The RCF includes the following three Organisational construct areas:

- i. **Strategy & Objectives** – the management response to uncertain environments includes the mission, vision and objectives. It provides targets and goals for the processes to steer the organisation in a particular direction.
- ii. **Organisation & Management** – the formal structure and governance of the organisation that is defined with the purpose of fulfilling the strategy and objectives.
- iii. **Function & Processes** – the activities that are performed within the organisation that drives the organisation closer to fulfilling its objectives.

It is important to note that the Organisational construct as defined above represents a simplified version of a realistic organisation. The construct is a mere abstraction to provide a certain level of detail to understand the impact of relational capability on the organisation.

7.2.2. Content of the RCF

The 36 relational capabilities (refer to Table 6.5) are at the core of the RCF. The following section therefore aims to categorise these capabilities into the structure as it has been described in the above sections. The categorisation of the capabilities is displayed in Table 7.2. Each of the 36 capabilities is assigned an Organisational construct area and a Relational construct item which best defines the capability. For example, capability *'Establish shared relationship vision and goals'* is assigned to the Strategy and objectives area as it addresses the direction in which the relationships are steered. At the same time, it is assigned to the Relationship opportunities item, as it involves searching and identifying new opportunities, as well as determining the possible implications of these opportunities. The remainder of the capabilities are distributed in a similar manner.

Table 7.2: Categorisation of relational capability requirements into RCF structure

Relational capability	Organisational construct			Relational construct									
				Relationship Lifecycle					Knowledge & Information		Organisational Structure		
	Strategy & Objectives	Organisation & Management	Functions & Processes	Relationship Opportunities	Relationship Learning	Relationship Development	Relationship Environment	Interaction Process	Organisational Learning	Data	Strategic Intent	Process and Value Offering	Resources
Establish shared relationship vision and goals	✓			✓									
Organisational vision and goals	✓										✓		
Developing partnering strategy	✓						✓						
Identify potential partners			✓				✓						
Reputation and external visibility		✓					✓						
Attract potential partners			✓				✓						
Market knowledge		✓					✓						
Establish trustworthiness through behaviour		✓									✓		
Boundary spanner		✓						✓					
Measure relationship performance			✓										✓
Create & sustain unique value offering	✓					✓							
Investment in relationships	✓												✓
Relationship risk assessment		✓											✓
Managing intellectual property		✓							✓				
Interpret & contextualise partner diversity		✓		✓									
Understand partner requirements	✓				✓								
Identify mutual opportunities			✓	✓									
Relation specific adaptations			✓			✓							
Bi-lateral knowledge creation			✓	✓									
Leverage external resources	✓			✓									
Adaptable & flexible organisational structure	✓											✓	
Product/process experimentation			✓									✓	
Interdisciplinary knowledge		✓										✓	
Individual reflective capacity			✓								✓		
Allocate internal resources to relationship		✓				✓							
Managing relationship portfolios		✓									✓		
Establishing contracting policy	✓							✓					
Managing internal tacit knowledge	✓								✓				
Internal communication and information flow			✓						✓				
Managing external tacit knowledge		✓			✓								
Communication & the flow of information between partners			✓					✓					
Data & information externalisation		✓								✓			
Capturing, storing and retrieving data			✓							✓			
Data analysis			✓							✓			
Data exploitation strategy	✓									✓			
Data security architectures			✓							✓			

Once each capability has been assigned to a Relational capability construct item, as well as an Organisational construct area, they are plotted on the two-dimensional grid as displayed in Figure 7.3. Based on its position on the grid, each capability receives a new unique reference code. For example, consider the capability '*Establishing shared relationship vision and goals*', on the Organisational construct dimension, the capability has been categorised into the Strategy and objectives area. On the Relational capability construct dimension, the requirement has been categorised into the Relationship Opportunities item, which is part of the Relationship Lifecycle. Consequently, it received a unique representative code of RL/SO1. This grid displays the Relational capability construct on the vertical axis, and the Organisational construct on the horizontal axis. Displaying the categorisation in this manner highlights the interrelations between the various capabilities. While the interrelations are not specified explicitly, many can be logically deduced from their position.

To illustrate the interrelations, one can again consider relational capability *RL/SO1 - Establishing shared relationship vision and goals*. This capability requirement is strategy oriented and it forms part of the Relationship opportunities construct item. As a result, it is inherently related to several other capability requirements. Relational capability *RL/FP1 - Identify mutual opportunities* for example, is an action orientated capability that will help achieve the shared vision and goals. Relational capability *RL/OM1 - Interpret and contextualise partner diversity* however, offers the support that is necessary to first establish a shared vision with a partner, and in the second instance execute the activities to identify the opportunities to achieve the shared vision.

While the above example illustrates the interrelations from the perspective of the *Relational capability construct* (horizontal interrelations), similar type of interrelations exist from the perspective of the *Organisational construct* (vertical interrelations). To continue with the same example, consider relational capability *RL/SO1 - Establishing shared relationship vision and goals*. Partnerships are established according to the partnering strategy of a firm, which is addressed in relational capability *RL/SO5 - Developing partnering strategy*. The partnering strategy will thus determine the goals that a firm needs to achieve through their relationships. The partnering strategy is again related to relational capability *OS/SO1 - Organisational vision and goals*.

	Organisational Construct	Strategy & Objectives	Organisation & Management	Function & Process
Relationship Lifecycle	Relationship Opportunities	RL/SO1 - Establishing shared relationship vision and goals	RL/OM1 - Interpret and contextualise partner diversity	RL/FP1 - Identify mutual opportunities
	Relationship Learning	RL/SO2 - Understand partner requirements	RL/OM2 - Managing tacit knowledge between partners	RL/FP2 - Bi-lateral knowledge development
	Relationship Development	RL/SO3 - Create and sustain unique value offering RL/SO4 - Leverage external resources	RL/OM3 - Allocate internal resources to relationship	RL/FP3 - Relation specific adaptations
	Relationship Environment	RL/SO5 - Developing partnering strategy	RL/OM4 - Market Knowledge RL/OM5 - Reputation	RL/FP4 - Identify complementary partners RL/FP5 - Attract complementary partners
	Interaction Process	RL/SO6 - Establishing contracting policy	RL/OM6 - Boundary spanner	RL/FP6 - Communication & the flow of information between partners
	Knowledge & Information	Organisational learning	KI/SO1 - Managing internal tacit knowledge	KI/OM1 - Managing intellectual property
Data		KI/SO2 - Data exploitation strategy	KI/OM2 - Data & information externalisation	KI/FP2 - Data security architectures KI/FP3 - Capturing, storing & retrieving data KI/FP4 - Data analysis
Organisational Structure	Strategic Intent	OS/SO1 - Organisational vision and goals	OS/OM1 - Establish trustworthiness through behaviour OS/OM2 - Managing relationship portfolios	OS/FP1 - Individual reflective capacity
	Processes and value offering	OS/SO2 - Adaptable and flexible organisational structure	OS/OM3 - Interdisciplinary knowledge	OS/FP2 - Product / Process experimentation
	Resources	OS/SO3 - Investment in relationships	OS/OM4 - Relationship risk assessment	OS/FP3 - Measuring relationship performance

Figure 7.3: Relational capability categorised into constructs

The detailed descriptions of each of the capabilities can be found in Appendix D, Figure D.1. Note that the framework is subject to a series of refinement activities during a validation process that is included in the following chapter (Chapter 8 – Framework validation). The detailed descriptions of the capabilities after the refinement activities have been completed, will be included in this Chapter 8.

7.3. Part 2: Developing a tool

Improvements within a firm can be viewed as deliberate changes that are created, designed, developed and maintained. Improvements can therefore be described from an enterprise engineering life cycle perspective. This means that managing change and improvement cycles should be done through enterprise engineering principles and mechanisms (Du Preez *et al.*, 2009).

Du Preez *et al.* (2009) proposed a method to assess and improve various innovation capabilities (Essmann, 2009) within a firm based on enterprise engineering principles. While these requirements are specific to innovation capability, the method to assess and improve the requirements provides a valuable foundation for a method to assess and improve relational capabilities as well. For this reason, the method proposed by Du Preez *et al.* (2009) will be used as a reference for the following discussion on process improvement. A generic version of the method is displayed in Figure 7.4.

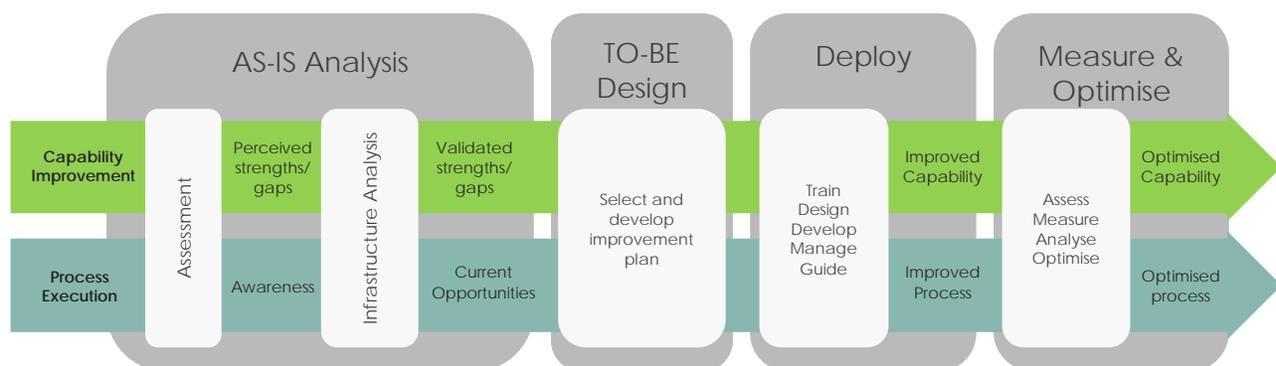


Figure 7.4: Parallel improvement of process capability and process execution, adapted from (Du Preez et al., 2009).

The first stage of the model aims to thoroughly understand the AS-IS situation of the firm. This is achieved through an assessment of the process capability by identifying strengths and weaknesses. The capability assessment is followed by an analysis of the infrastructure of the firm. The tools, methods, processes, resources, *etc.* that is available for the processes are identified and evaluated during the analysis. The result of the activities during this stage is an accurate understanding of the current situation within the firm with regards to process capability. These results will be used during the following stage when an improvement plan is selected and developed to design the TO-BE state. The improvement plan is a business case for implementing specific improvement projects based on the identified opportunities and problem areas.

Figure 7.4 also depicts two parallel streams of capability improvement (green stream) and the actual execution of the processes (blue stream). This is done to highlight the importance of applying improvement activities during the execution process, and refining them based on the cross-initiative learning. The final stages focus on effectively and efficiently substantiating, implementing, exploiting, and maintaining the prioritised opportunities using appropriate project management techniques. While these stages are an equally important part of the improvement process, it is not the focus of this research, and thus will not be included in further discussions.

7.3.1. Improvement tool requirements

To develop a tool that enables a user to use the RCF, the process of capability assessment and improvement needs to be carefully considered. The improvement process involves a multi-phased approach that coordinates strategic, operational and organisational demands in taking the capabilities of a firm from an AS-IS state to a TO-BE state. Thus, the tool should have the following requirements:

- The tool should enable the user to evaluate the current state of relational capability within the firm;
- The results of the evaluation should enable the user to determine which areas require improvement;
- Reasonable interpretation should be used by the user to develop an improvement plan; and
- The tool should be highly transferable to be applicable to a wide range of firms.

While there are various ways to measure process capabilities, the topic of capability improvement often refocuses on the content and guidelines of maturity modelling. Maturity models are well-known and widely used tools that enable users to assess the current state of maturity of capabilities in a certain domain. Maturity models further enables users to identify the strengths and weaknesses of those capabilities, and suggests an improvement plan to increase overall performance.

Maturity models are powerful tools to guide the improvement processes within a firm. It is thus deemed a suitable approach to guide the use of the RCF. The maturity modelling tool will therefore be referred to as the Relational Capability Maturity Model (RCMM). It should however be noted that a maturity modelling approach is used for the purpose to transform the relational capabilities of a firm. This means that it does not make an attempt to model organisational maturity in terms of relational capability.

7.3.2. Overview of a maturity modelling approach

The concept of maturity can be traced back to quality management when Crosby (1979) introduced the idea of maturity stages building on each other. He proposed a process maturity grid for quality management as a tool for analysis and measurement. During the same time, Nolan (1979) published studies concerning the maturation of data processing. The publications surrounding maturity-related topics have since grown in both scale and diversity (Wendler, 2012). One of the most recognised and most widely used maturity models today is the Capability Maturity Model Integration (CMMI®). The CMMI has its roots in the original Capability Maturity Model® for software (SW-CMM®), which was developed in 1986 in response to a request from the federal government for a method to assess the capability of their software contractors. The Software Engineering Institute (SEI) developed a process maturity framework that would help organisations improve their software processes (Humphrey, 2002; Paulk, 2009).

The SEI defined the CMMI as “a reference or process model of mature practices in a specified discipline, used to improve and appraise a group's capability to perform that discipline” (Höggerl and Sehorz, 2006). This provides a valuable starting point to understand the underlying logic of maturity models. However, it fails to provide the meaning of maturity or the purpose and application of the model. For this reason, it would be valuable to clarify the meaning of some of the fundamental concepts underlying maturity models (Paulk *et al.*, 1993):

- *Maturity* can be defined as a system assessed to be optimally fit for its purpose, as described by its designer (Essmann, 2009);
- A *process* can be defined as a series of activities or functions that are performed in a certain sequence, transforming inputs into outputs (Du Preez *et al.*, 2009);
- *Process capability* can be described as the range of results that can be expected when following a process (SEI, 2010);
- *Process performance* describes the actual results that are achieved when a process is followed (Paulk *et al.*, 1993);
- *Process improvements* refer to a set of activities that is designed to improve the performance of a specific process (SEI, 2010); and

- *Maturity levels* can be described as an evolutionary plateau for organisational process improvement where all of the goals for each of the process areas have been achieved (SEI, 2010).

The interrelations based on the logic of these concepts are graphically displayed in Figure 7.5. The process capabilities are improved through process improvements which subsequently enhance process performance. The process improvements are designed to reach specific goals of increased process capability which are contained in maturity levels. Each maturity level indicates a level of process capability, and it contains a set of process areas that are targeted for improvement.

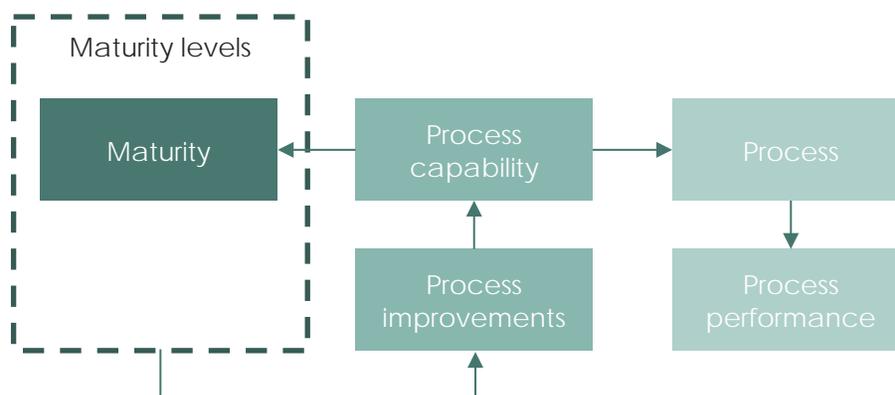


Figure 7.5: Fundamental concepts underlying maturity models

Maturity models generally comprise two main parts. The first part is a descriptive model that contains the key attributes that can be expected to characterise a firm at each maturity level (Paulk *et al.*, 1993). The second part is a framework that provides a path that guides a firm to implement improvements (Paulk *et al.*, 1993).

The descriptive model is an abstraction of reality that describes the evolution of process maturity through a set of levels. At each maturity level, an important subset of the processes is matured, preparing it for the following maturity level. The descriptive model mainly serves as a reference frame to create awareness of different process areas, their state, importance and their potential (Wendler, 2012).

The improvement framework contains a collection of best practices, and it defines the criteria for measurement (SEI, 2010; Wendler, 2012). When the practices at a certain maturity level are performed collectively, it achieves a goal or set of goals that are deemed important for enhancing the capability of a process (OMG, 2008). For a firm to advance to the next level of maturity, it is required that each of the goals are satisfied (SEI, 2010).

It should be clarified that maturity models are not intended to be a standard for process improvement. It is not prescriptive, and does not contain an exhaustive list of processes or procedures. Researchers have emphasised that an attempt to directly apply a maturity model to a firm's existing activities could result in such practices not being completely compatible to the current procedures (Curtis and Paulk, 1993; Glazer *et al.*, 2008). In any context where the maturity model is implemented, a reasonable interpretation of the practices should be used. Process improvement should occur within the context of the organisation's strategic plans, business objectives, organisational structure, technologies and its social culture. Paulk *et al.* (1993) highlighted the following three uses of a maturity model framework:

- To be able to identify the strengths and weaknesses in the organisation;
- To understand the activities that are necessary to plan, and implement a process improvement program for the organisation; and
- To be a guide to define and improve the processes in the organisation.

While a wide variety of maturity models exist, they mostly share a similar structure. As displayed in Figure 7.6, most maturity models have a five-level maturity structure. Maturity levels are sequential in nature as they represent a hierarchical progression. The labelled arrows indicate the type of process capability being institutionalised by the firm at each maturity level (Wendler, 2012).

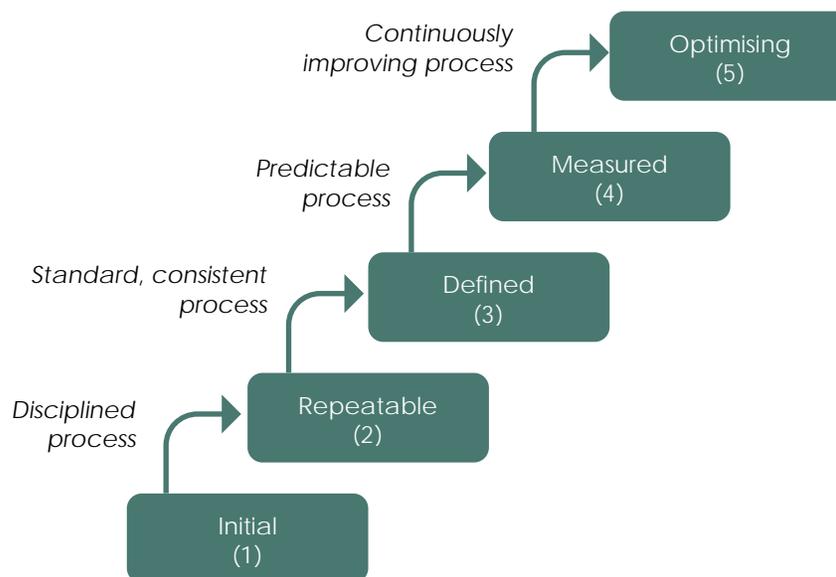


Figure 7.6: Common maturity level structure (Paulk *et al.*, 1993).

7.3.3. Outline of the RCMM

Based on the requirements of the tool, the RCMM is developed as a descriptive maturity model. This means that the RCMM does not include collection of best practices at each maturity level. The reason for this is two-fold. Firstly, including best practices would reduce the transferability of the tool. Secondly, the purpose of the tool is not to model relational capability maturity, which is in effect what would be required if it were included.

It is also necessary to note that the formalisation of practices and procedures are part of the maturing process, which seems to contradict the use of informal and simple structures that are common to SMEs. A maturity model requires processes to be defined at a high level of detail, which can result in over-engineering and over-complexity. This might decrease the value to SMEs. The purpose of the descriptive model would therefore be to deconstruct the processes in sufficient detail so that actual improvement recommendations can be derived from the structure of the maturity levels. This would in turn guide leaders and individuals to look inward, and to consider best-practices. Individuals would be encouraged to modify their tasks so that it is performed more in line with their preferences. This cultivates a best-practice manner that is beneficial to both the individual and firm without constraining the flexibility of a firm.

The RCMM is structured by adding a third dimension to the RCF, creating a three dimensional structure. In addition the Relational capability construct and the organisational construct, the third dimension is the Capability maturity, as displayed in Figure 7.7. The maturity of the capabilities is described in five progressive levels, including attainable goals that aim to provide an optimal improvement path. Generic descriptions of the five maturity levels are required as the description should relate to each of the 36 relational capability requirements within. Derived from the SEI's (2010) description of maturity, the maturity levels include:

- i. **Level 1: Initial** – Processes are mostly ad hoc and chaotic. A stable environment to support processes is not provided.
- ii. **Level 2: Managed** – The need for relational capabilities have been identified and defined. A foundation to implement processes have been created. Process adherence is periodically evaluated.
- iii. **Level 3: Defined** – Practices, procedures and tools have been defined and implemented. Outputs are consistent.

- iv. **Level 4: Measured** – Focus is managing and improving process performance. Activities and resources are integrated and aligned within the organisation. Processes are continuously monitored and evaluated.
- v. **Level 5: Optimised** – Synchronisation and institutionalisation of activities and processes. The organisation continually improves its processes based on a quantitative understanding of its business objectives and performance needs.

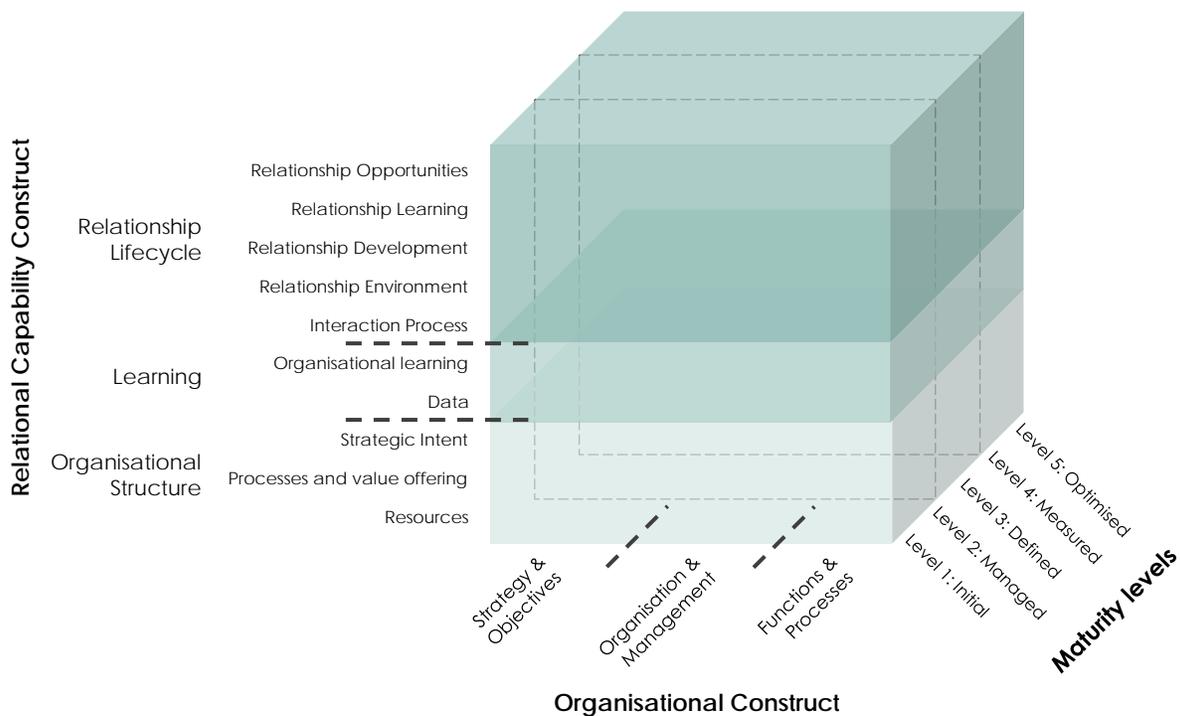


Figure 7.7: Structure of the RCMM

Adding another dimension means that the capabilities as described in the two dimensional RCF (refer to Figure 7.3) need to be addressed in the third dimension. This is done by describing each of the capabilities according to the different maturity levels. Within the five level depiction of relational capability maturity, only three capability-specific descriptions are necessary to represent the full five-level maturity scale. Essmann (2009) argued that three explicit descriptions are both sufficient and advantageous. Firstly, it reduces the amount of time required when using the model as an assessment tool. And secondly, it provides the users with two implicit middle grounds. This consequently avoids situations where users choose to provide a status assessment between two of the provided options. The descriptions of the maturity levels enable the user to

understand the requirements of each capability, and it plays a critical role in using the RCMM as a management tool.

Each of the capabilities is translated into a question, which will enable the user to select a description that best reflects the situation internal to their firm. The descriptions of the maturity levels are included in Appendix E. Figure 7.8 illustrates the structure of the RCMM questionnaire by displaying the capability RL/SO1 – ‘Establishing shared relationship vision and goals’.

Code	Description	Question	ML 1	ML 3	ML 5
RL/SO1	Establishing shared relationship vision and goals	How is agreement on shared vision and goals reached?	Vision and goals of relationships are not explicitly defined. Agreement is only implied.	Vision and goals of individual parties communicated explicitly and some level of agreement reached.	Agreement on vision and goals reached through an iterative, joint goal setting process and clear communication of goals.

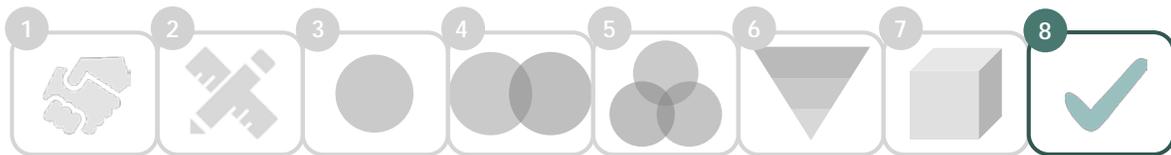
Figure 7.8: Example of RCMM Questionnaire

7.4. Chapter conclusion

This chapter consolidated the relational capabilities into the Relational Capability Framework (RCF). The RCF is a two dimensional framework that comprise of the Relational capability construct on the y-axis, and the Organisational construct on the x-axis. This is done to address the multiple dimensions of relationships while identifying the different parts of the organisation that is affected. The RCF is converted into a tool that can be used by an SME to guide the capability improvement process. The tool uses a maturity modelling approach to develop the Relational Capability Maturity Model (RCMM). The RCMM adds a third dimension of capability maturity to the RCF, consequently describing each of the capabilities at the different levels of maturity.

8. Framework validation

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This chapter introduces a three stage validation process that aims to prove that the framework delivers on its main objective. It includes the validation of the individual relational capabilities through a framework ranking questionnaire, a practical validation through case studies, and a final external validation through interviews with industry experts. The framework is continuously refined based on the outcomes of each validation stage.

8.1. Validation approach

Validation is concerned with the integrity of the conclusions that are generated from a piece of research (Bryman and Bell, 2014). The process of validation is intended to clarify ambiguities and interpret reasons or evidence to advance arguments. Several validation techniques exist, including interviews (structured and semi-structured), questionnaires, practical implementation, workshops, case studies etc. Each of the validation techniques demonstrates their own set of advantages and disadvantages.

Due to the multi-dimensional nature of the Relational Capability Framework (RCF) and the Relational Capability Maturity Model (RCMM) tools, different questions need to be asked to validate different parts of the framework. For this reason different validation techniques have to be developed. To determine which validation techniques are most suited to achieve the desired validation, the outcomes are broken down into validation questions. The questions include the following:

- i. **Validation question 1:** Are the relational capabilities relevant to what the RCF aims to achieve?
- ii. **Validation question 2:** Is the RCF and RCMM implementable and would it be valuable in its use to an SME?
- iii. **Validation question 3:** Is the objective and approach of the RCF needed and relevant within a wider context?

Three validation techniques were selected based on their suitability to answer the related validation questions. A three-stage validation process has consequently been developed, including (1) Ranking questionnaires, (2) Case studies, and (3) Semi-structured interviews, as displayed in Figure 8.1. During the validation process the author collects both quantitative and qualitative data, consequently strengthening the rigor of the validation and enriching the analysis and findings (Wisdom and Creswell, 2013). Throughout the validation process, refinement possibilities were continuously identified and implemented.

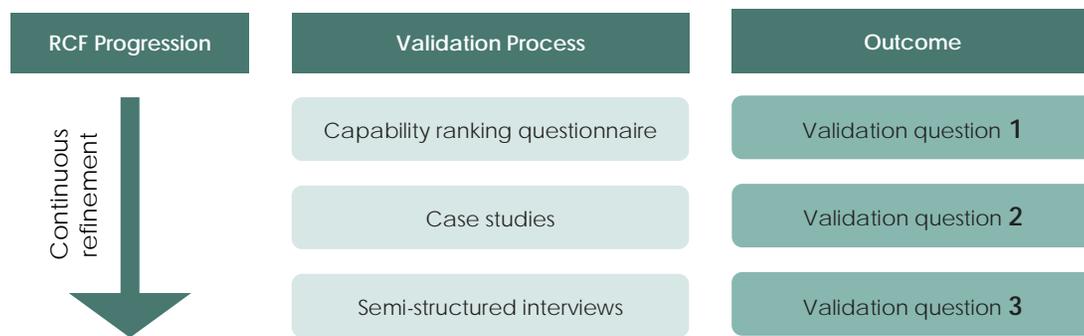


Figure 8.1: Validation approach roadmap

The first validation stage, the Capability ranking questionnaire, aims to validate each individual capability to determine whether or not it is relevant to what the RCF aims to achieve, and to ultimately determine whether or not the capability should form part of the framework. Based on the results of this stage, the capabilities have been refined through modifications or considerations to increase their suitability of fit to the RCF. The second validation stage involves demonstrating the application of the RCF and the related RCMM tool. This stage aims to identify the issues related to using the framework in a practical environment, and also to determine whether the outcome of using the tool is consistent with the objective of the framework.

The final validation stage aims to obtain a concluding validation with regards to the overall approach and need for the framework. This is achieved through conducting semi-structured interviews with industry experts. The inputs and additional considerations from the experts have also been used to refine the framework. The

refined framework is included at the end of this chapter. If all of the outcomes are collectively reached, the RCF can be considered valid.

8.2. Capability ranking questionnaire

The first validation stage aims to address the first validation question: *Are the relational capabilities relevant to what the RCF aims to achieve?*

This question is addressed through a questionnaire in which suitable respondents are asked to rank the various relational capabilities according to predefined criteria. A questionnaire was selected as a validation technique since it provides both a quantitative and qualitative approach to validate the framework. Thus, this stage involves two phases including the initial quantitative questionnaire, followed by the collection qualitative data. Here the qualitative phase builds directly on to the results from the quantitative phase. In this way, it is possible to better explain the quantitative results through the qualitative data (Wisdom and Creswell, 2013). Questionnaires are able to minimise the complexity of the captured data, as it produces consistent data that are desirable for analysis purposes. Furthermore, the responses could be gathered simultaneously from several participants, which saved time and minimised effort.

8.2.1. Capability ranking questionnaire methodology

As the RCF is compiled from a theory base, it is necessary to validate the framework from a practical perspective. The questionnaire therefore does not aim to capture in-depth knowledge of the theoretical research domains, but instead aims to capture the practical and realistic application of the relational capabilities.

A simple and structured questionnaire was chosen as the method to gather data from participants. SME owners and/or managers were identified as appropriate participants due to their possible experience of and practical exposure to the relational capabilities. SMEs were only included if they were involved in collaborative partnerships to which they were able to contribute unique and complementary value. This primarily included SMEs with a technical or specialist focus.

Several participants were purposefully selected based on their suitability for the study, and others were selected through snowball sampling where respondents further identified other potential candidates. Due to

the intensive nature of the questionnaire, it did not seem viable to collect a fully representative sample of all the qualifying SMEs in South Africa. The author had to take into account the time constraints of such an undertaking in the disseminating and collecting of data, as well as managing the timeous and full completion of questionnaires by respondents. It was also determined that the value in this exercise lies largely in the feedback from individual responses (qualitative data), rather than a statistical analysis of the quantitative data. For this reason it was decided to approach a small sample of participants, and to continue collecting data until the results were deemed sufficient. A total of ten participants responded to the questionnaire.

Table 8.1 displays the range of the demographics of the SME respondents. The questionnaire covers a wide range of industries, which is advantageous due to the required transferability of the framework. Also to note from the table is that the number of employees range between 2 and 35 employees. These SMEs are thus relatively small, considering SMEs are classified to have between 1 and 200 employees in the South African context (refer to Table 3.1: Size standards of South African SMEs (South African Government, 2004)). The small size of the included SMEs can possibly be attributed to two factors. Firstly, the owners and/or managers from the smaller SMEs were more accessible and willing to take part in the questionnaire. The owners and/or managers of the different smaller firms are also often tightly connected, which means that they were able to refer other owners and/or managers from small firms. The second factor is the partnership-driven nature of the SMEs that forms the topic of this study. Smaller size SMEs often expand their business through partnerships, while keeping their core capabilities relatively small and concentrated.

Table 8.1: Range of SME respondents

Demographic	Range
Industry	Manufacturing; Financial intermediation, insurance, real estate and business services; Agriculture, forestry and fishing; Data Science, information technology, software development.
Employees	2 employees to 35 employees
Year founded	2012 to 2016

Before the questionnaires were distributed to the possible participants, it was necessary to provide them with the relevant background information to provide the context. This was done primarily through a phone call or a face-to-face discussion. Thereafter, the questionnaire was distributed to the participant via email. The

questionnaire is included in Appendix F. As explained earlier in this section, the questionnaire required participants to rank the capabilities according to different criteria. These criteria are displayed in Figure 8.2. Participants were invited to comment on the capabilities. They were further asked to provide a motivation when indicating a capability as possibly harmful (under the impact criteria category). In some cases, follow-up interviews were conducted to confirm or clarify responses on an as-needed basis.

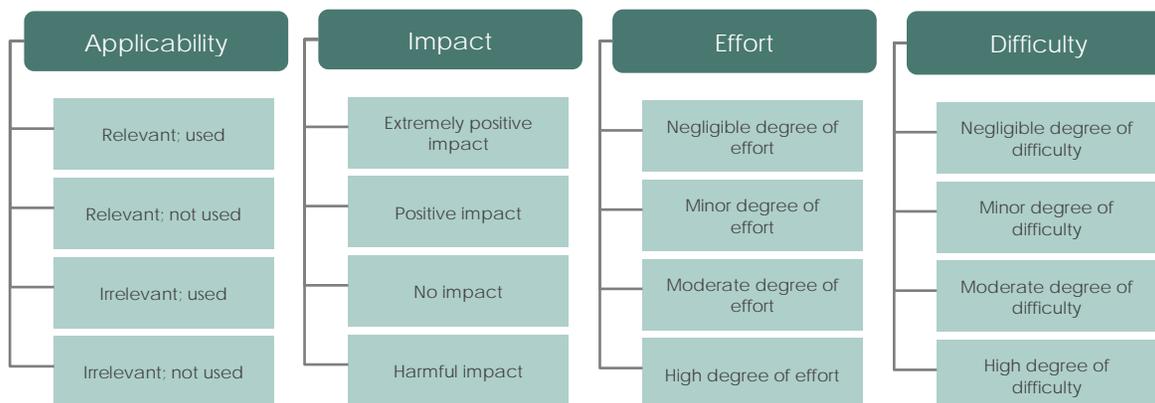


Figure 8.2: Ranking criteria

As can be seen from Figure 8.2, the criteria includes 1) applicability, 2) impact, 3) effort, and 4) difficulty. The following questions have been formulated to guide this validation process:

- Are the capabilities identified in the framework relevant to the problem at hand?
- Could any of the capabilities potentially have a harmful impact?
- Are there capabilities that have little impact but require a high level of effort, or have a high level of difficulty?
- What other trends can be derived that might be of interest?

8.2.2. Ranking questionnaire results and discussion

The results obtained from the respondents were collected, combined and analysed to derive the results that are discussed in the following sections. The results are discussed in accordance with the validation questions formulated in the previous section.

8.2.2.1. *Relevant capabilities*

The first question aims to determine whether or not the capabilities are relevant to the research problem. This part of the validation aims to obtain construct validity which addresses the question of whether or not the framework reflects the concept it is trying to capture (Bryman and Bell, 2014). The participants were asked to indicate whether or not they believe the capabilities are relevant, and whether or not they make use of the capability. The results are displayed in Figure 8.3. As can be seen from Figure 8.3, the majority of the respondents indicated that the capabilities are relevant. While the majority of respondents indicated that most of the capabilities are used within their firm, some capabilities are not in use. This could mostly be attributed to a lack of knowledge or resources required to implement these capabilities. The capabilities that were indicated as 'Irrelevant, or 'not used', will be briefly discussed in the remainder of this section.

- i. **Developing partnering strategy** was indicated as irrelevant as the respondent explained that they did not pro-actively determine the need for partners or search for suitable partners. However, should opportunities arise, they are able to align the complementary capabilities from their partners with their own overall strategy and objectives. The respondent concluded that they do have an intrinsic, reactive type strategy;
- ii. **Establishing shared vision and goals** and **Organisational vision and goals** were indicated as irrelevant by the respondent, who explained that clear goals and visions are short lived, and only hold value for a specific objective. It follows thus, that the initially defined vision and goals become irrelevant. The respondent pointed out that these capabilities should indicate that the vision and goals can evolve as both the organisation and the relationship evolve.
- iii. **Allocate internal resources to relationship** was indicated as both irrelevant, and potentially harmful (under the impact criterion section). This capability will therefore be addressed in the following sections.

Overall it can be concluded that the capabilities can be considered as relevant. It is not surprising that not all capabilities are used in each case, especially if one takes into account the wide variety of SMEs. By including capabilities that are relevant but not used within a firm, it has the potential to make the framework user aware of the value of possible inclusion of the capability. This in turn could have a positive impact on their overall relational capability.



Figure 8.3: Relevance of Relational capabilities

8.2.2.2. *Harmful capabilities*

The following section discusses the capabilities that respondents indicated as potentially harmful, as displayed in Figure 8.4. The respondents were specifically asked to provide their reasoning for indicating the capability in this manner. It is critical to understand why respondents believed these capabilities to be potentially harmful as the framework must, at the very least, cause no harm. In most cases, the potential harm could rather be attributed to lack of support structures, e.g. lack of formal management structures and resources (time, human capital etc.), rather than the impact of the capability itself. In some instances the capabilities highlighted challenges to be addressed between firms, and thus fulfilled the task for which it was designed. Note that the capabilities that were addressed during the previous section will not be addressed again.

- i. **Allocation of internal resources** refers to the manner in which the capabilities are allocated to resources. The respondent explained that this capability can be harmful due to the amount of resource (specifically time) that a relationship needs if it is tended to as an individual capability. The definition of the capability should therefore include the optimisation of available resources, by emphasising the importance of prioritising relationship needs.
- ii. **Communication and flow of information between partners** was indicated as 'harmful' due to the nature of the respondent's partner. The partner is a much larger firm and the communication channels from the partner's side are complex and hierarchical. Attempts in communication with this partner can be time consuming and can cause frustration. **Data and information externalisation** was also indicated as harmful because of the formal and standard communication procedures required by the respondent's partner. Again, sharing information with the partner is a time-consuming and resource intensive exercise. The insights from this respondent highlight the disadvantages that SMEs experience in relationships with larger firms. Addressing these issues are however limited, looking from an internal point of view. Internally, SMEs only have few options to improve the communication channels. The capability should consequently be modified to address the definition of communication channels, rather than emphasising the need to create open and transparent communication channels.
- iii. **Bi-lateral knowledge creation** was indicated as harmful due to the respondent's concerns relating to sharing valuable knowledge or intellectual capital with a partner without the required trust or protection of intellectual property. For this reason the framework should be modified to depict more

clearly the interrelation between the ‘Bi-lateral knowledge creation’ capability, and the ‘Managing intellectual property’ capability.

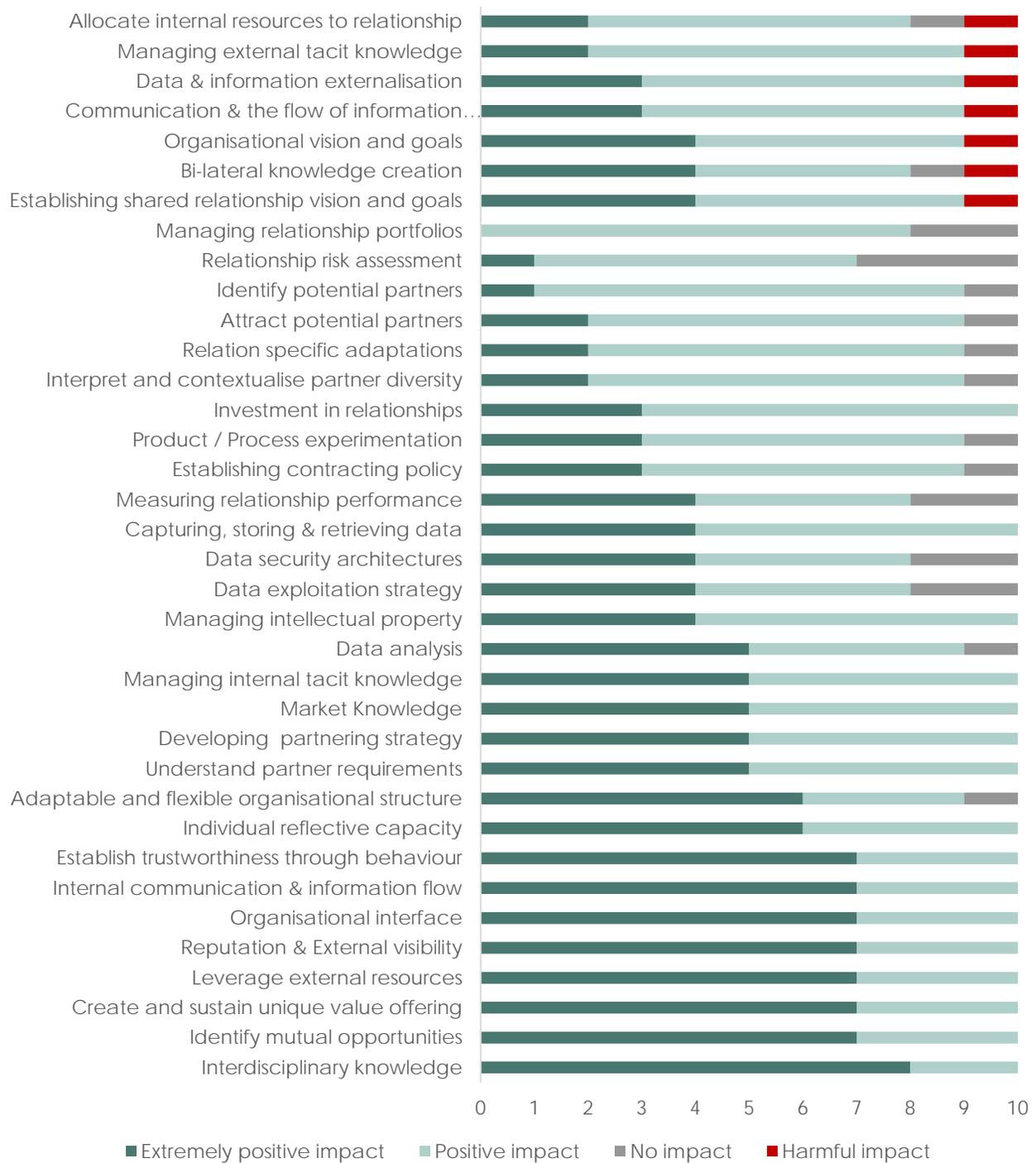


Figure 8.4: Impact of capabilities

8.2.2.3. *Low impact and high effort or difficulty*

The following section aims to identify the capabilities that were indicated as having a high difficulty or high effort, while having only a low impact. These capabilities can be regarded as ‘bad’ capabilities according to the matrix displayed in Figure 8.5. Note that the matrix for impact versus difficulty is identical to the one displayed.

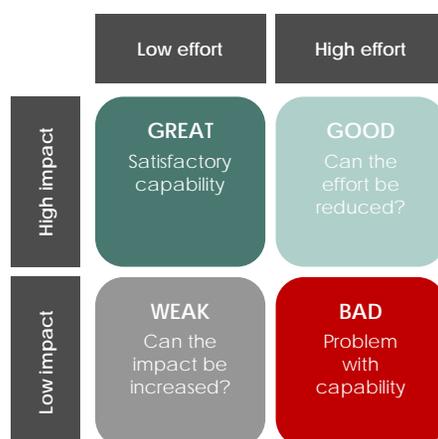


Figure 8.5: Impact vs effort matrix

The results for impact versus difficulty and for impact versus effort are displayed in Figure 8.6 and Figure 8.7 respectively. The potentially harmful capabilities have already been discussed in the section above, therefore it will not be repeated here. If Figure 8.6 and Figure 8.7 are compared, it can be seen that the ‘bad’ capabilities based on difficulty, strongly corresponds to the ‘bad’ capabilities based on effort. The discussion will thus address the ‘bad’ capabilities based on difficulty and effort simultaneously. To improve these capabilities, either the impact should be increased, or the difficulty and effort should be decreased. The capabilities that are regarded as ‘bad’ will be discussed in the following section.

- i. **Measuring relationship performance** is difficult to implement because it is difficult to establish specific measurable competencies to evaluate the relationship performance. The respondent however explained that any problems that are identified should be addressed immediately to strengthen and maintain the relationship.
- ii. **Risk assessment** is also difficult to address due to the respondent’s dependency on certain partners, and the risks involved should these partnerships fail. At the same time, there is no benefit in reducing the dependency by withdrawing from the partnership. Essentially, in certain situations, awareness of

risks does not automatically enable one to reduce the risks. That being said, it remains critical to be aware of the risks, and action should be taken as far as possible to reduce the risk.

- iii. **Product and process experimentation** is largely dependent on the context of the firm. The respondent explained that their processes are highly specialised and sensitive to change, which leaves little room for experimentation. This capability should be expanded to include continuous process improvement, and if it is within a firm's ability to evaluate their processes through experimentation, it should be encouraged.
- iv. **Managing relationship portfolios** is considered 'bad' due to the detailed activities that are related to portfolio management. The participant felt that managers naturally balance different relationships without consciously performing portfolio management activities. It was determined that an intermediate capability would enable firms to achieve balanced relationship portfolios with less effort. This capability involves the conversion of the relational needs into functional requirements, consequently providing more transparency to relationship needs.
- v. The respondent explained that it is difficult to evaluate the impact of the **data exploitation strategy**, because each of their clients is unique, and solutions that worked in a previous situation might not necessarily work in the current situation. Nevertheless, they are aware of the type of data they have, and the possible information that they are able to derive from the data. In this way, lessons that are learnt can be applied.

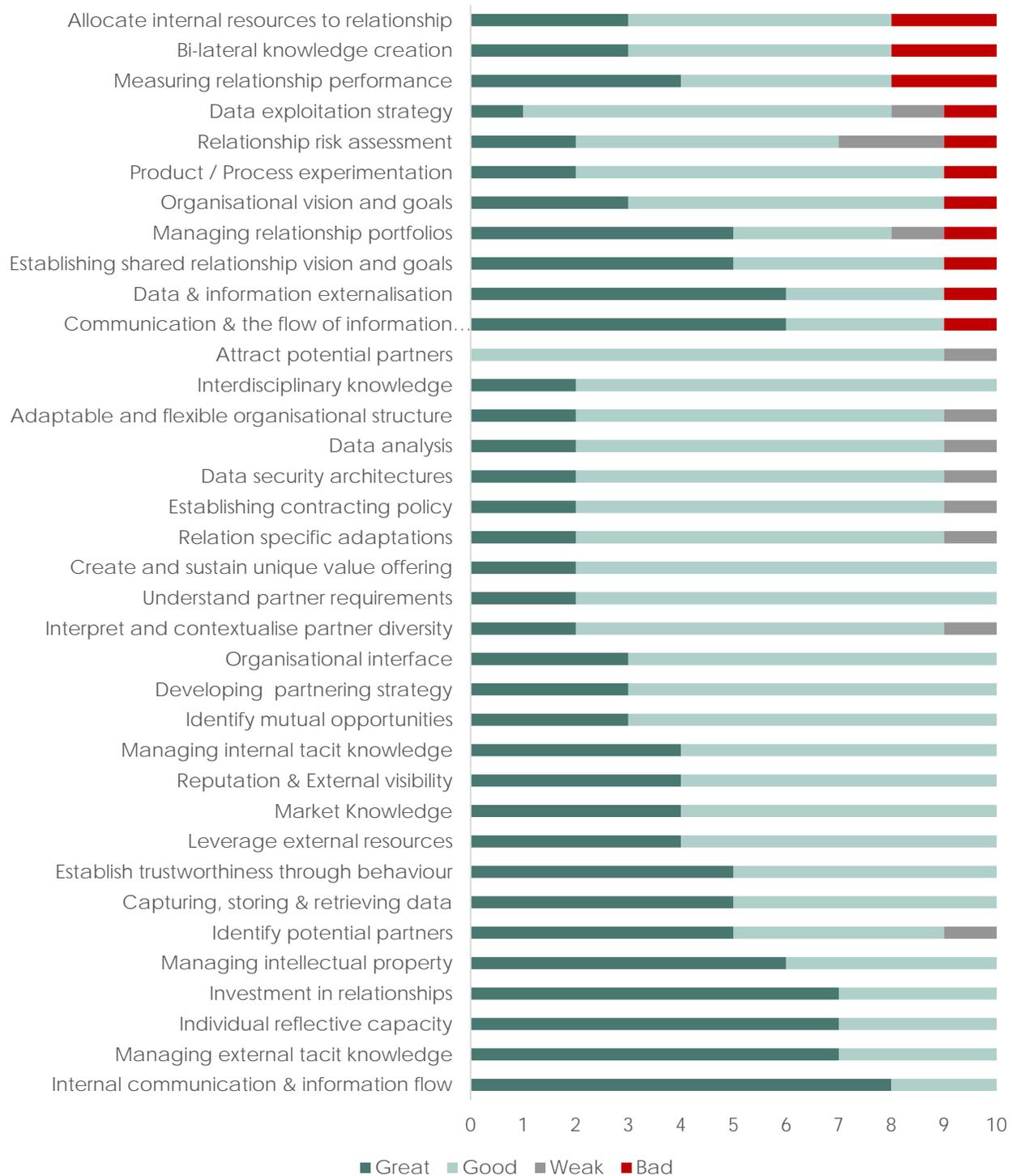


Figure 8.6: Impact vs difficulty of capabilities

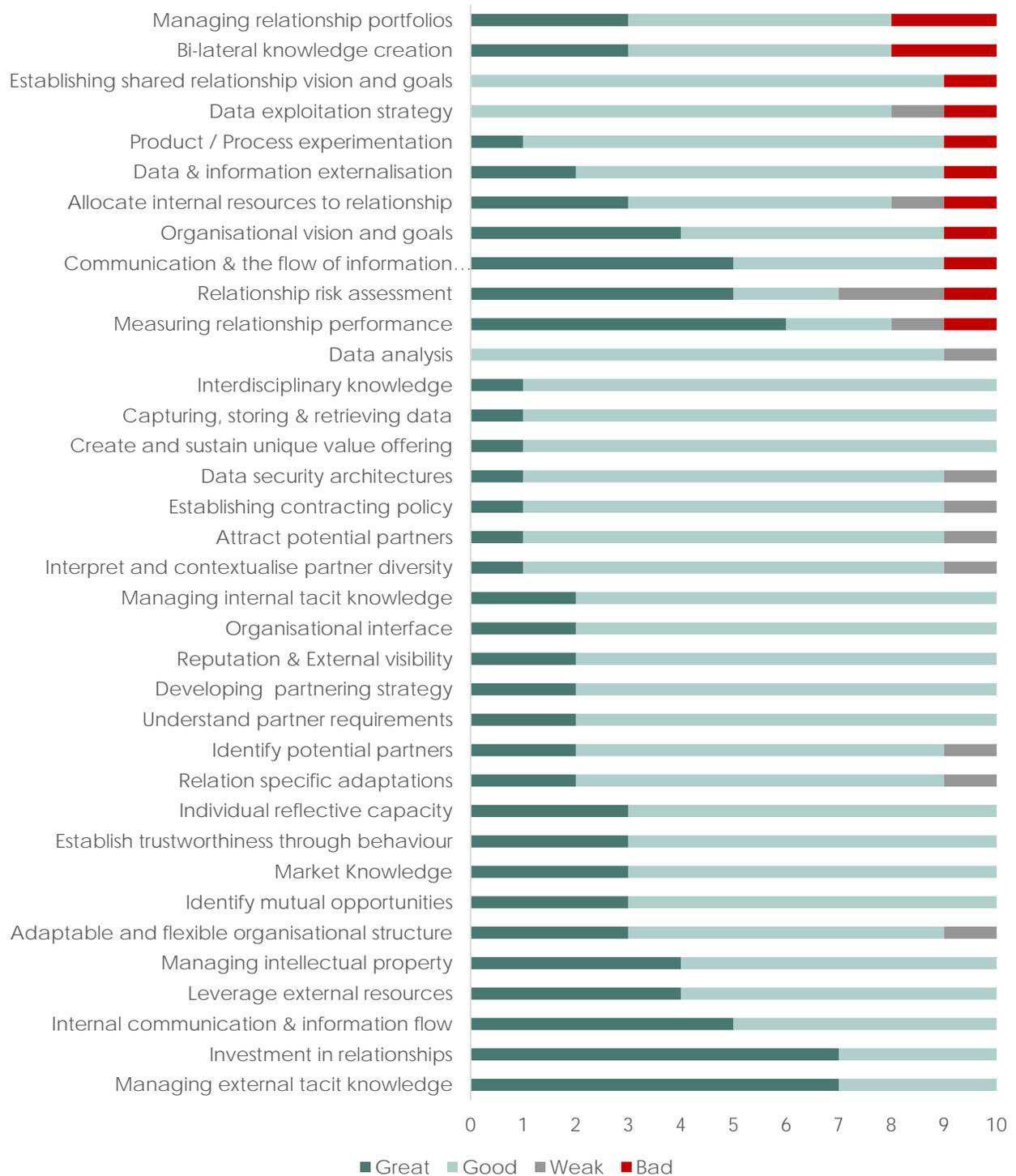


Figure 8.7: Impact vs effort of capabilities

8.2.2.4. *High impact and high effort or difficulty*

The final part of the ranking validation stage is to determine whether the results of the questionnaires displayed any other trends that might be of interest. Referring back to Figure 8.6 and Figure 8.7, it can be deduced that the majority of the capabilities are regarded as 'good'. In accordance with the matrix displayed in Figure 8.5, 'good' capabilities are indicated as having a high impact, while requiring a high degree of effort or difficulty.

When interpreting these findings, it can be concluded that the framework includes the capabilities that are relevant to forming partnerships. Moreover, these capabilities are essential for SMEs to be able to be successful in their partnerships. Based on the degree of effort and difficulty, it is however clear that it will be difficult to achieve. This is conclusive with the complexity and the inherent challenges related to partnerships. It is therefore necessary to emphasise that the RCF does not provide a simple 'recipe for success', but it rather aims to provide a starting point by highlighting the areas that are important to the firm.

8.2.3. Summary of ranking questionnaire findings

This validation stage was conducted with the primary purpose to determine whether each of the relational capabilities is relevant to what the RCF aims to achieve. Through completing the ranking questionnaires, detailed information could be gathered of each individual capability, and it was possible to identify those capabilities that could decrease the overall effectiveness of the framework. In total, 12 capabilities were identified to require further investigation. Each of these capabilities was identified if it was either indicated as being irrelevant, if it could potentially have a harmful impact or if it has little impact but requires a high degree of effort or difficulty to implement. These capabilities were addressed and modified accordingly.

It is also necessary to note that the capabilities that were identified for further investigations can be seen as exceptions. This is because all of these capabilities were regarded as 'good' or 'great' by the majority of respondents. The capabilities were therefore addressed with the purpose to decrease the possibility of exceptions occurring. It is however acknowledged that in a real-life situation, exceptions could always be a possibility.

The respondents who completed the Ranking questionnaire also provided some insightful and valuable additional considerations. More detailed responses are included in Appendix G.

8.3. Case studies

The second validation stage aims to address the second validation question: *Is the RCF and RCMM implementable and would it be valuable in its use to an SME?*

This question is addressed through conducting illustrative case studies. Case studies are commonly used as a tool to reflect on the theory emerging from findings. Through a detailed and in-depth examination, a case study is used to generate a multi-faceted understanding of a complex issue in a real-life context (Crowe *et al.*, 2011). Case studies are often conducted in close interaction with practitioners, therefore it is suitable for including managerially relevant knowledge (Gibbert, Ruigrok and Barbara, 2008). Bryman and Bell (2014) explains that multiple case studies are often undertaken to compare the findings and contrasts from each other. This subsequently enables the researcher to consider the aspects that are unique to a case, and those that are common across cases. Two case studies have been conducted to test the framework in different contexts. The case study analysis aims to validate the applicability of the framework in a real-world context.

8.3.1. Case study methodology

Both case studies are conducted by employing the same methodologies. This is to ensure maximum consistency throughout the case studies, and to enable the subsequent comparison to be as accurate as possible. The Relational Capability Maturity Model (RCMM) has been employed to conduct the case studies and to implement the Relational Capability Framework (RCF). An overview of the improvement methodology is displayed in Figure 8.8.

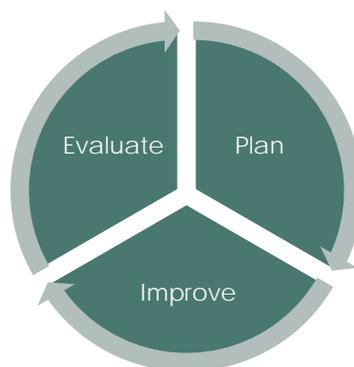


Figure 8.8: Improvement methodology

The improvement methodology contains three stages including 1) Evaluate, 2) Plan, and 3) Improve.

The Evaluation stage initiates the improvement process by assessing the relational capabilities of the firm against the capability descriptions of the RCMM. This stage starts off with an introductory meeting to create the necessary context for the evaluation. The context in this case refers mainly to how the participant should interpret the questions. The purpose of this meeting is primarily to determine the reason(s) for the evaluation and to inform the participants of what they can expect. After the participants feel comfortable with the evaluation procedure, they are handed the capability questionnaire. This questionnaire can be found in Appendix E. The participants are asked to respond to the questions as instinctively as possible to avoid situations where participants over-rationalise or doubt their answers. The nature of this session is interactive to encourage conversations about B2B relationships and the related capabilities.

After the participants have completed the questionnaire, the results are collected and subsequently processed. The processing of the results refers to interpreting and translating of the results into meaningful answers. Thus, the processed results identify which capabilities the participant regarded as stronger, and which capabilities the participant regarded as weaker. These results are regarded as the input for the subsequent planning stage.

The planning stage involves devising an improvement plan based on the results of the evaluation. The planning stage includes an initial analysis and basic recommendations based on the 'strong' and 'weak' capabilities. It is however not sufficient to simply select the capabilities with the lowest ratings as the ones for improvement. The context of the participant is critical, and the uniqueness of each firm needs to be taken into account. Various factors should be taken into consideration, including the objectives of the evaluation, different organisational aspects (e.g. size, structure, available resources, etc.), and the type of B2B relationships, amongst others. The prioritisation and planning process should thus largely be a team effort, and directly involve the input of the participant.

Based on the prioritised improvement opportunities, a unique and customised improvement plan can be developed. Determining specific improvement activities however falls outside of the RCMM scope. The improvement activities should thus be developed for each case based on a combination of industry best-practices, referencing a benchmark organisation or any other available, reliable information or research.

It is important that the improvement plan is thoroughly communicated to the participant. It could also take various iterations to deliver a plan that satisfies the needs of the participants, that is aligned with the strategic objectives and with the possible available resources of the firm.

The improvement stage deals with implementing and executing of the improvement plan as developed during the planning stage. As opposed to the previous two stages, the activities of the improvement stage have not been performed during the conducting of the case studies. This stage draws on more traditional project management capabilities. It is however assumed that the firm would have the necessary capabilities to implement the actual improvement activities.

The two case studies that were conducted are discussed in the following sections.

8.3.2. Case study 1

The first case study was conducted with a small agricultural firm that provides specialised surveying and analytical services to farms. This firm has several partnerships in which they expand their core specialisation to provide a more extensive product to their customers. The firm is strongly innovation-driven and are involved in several collaboration activities with their partners, thus making them an ideal candidate for the case study. It is a relatively young firm, which was established only in 2016, containing two permanent employees. It was consequently deemed sufficient to only conduct the case study with one employee as they could confidently answer the questions on the firm's behalf. The methodology followed to conduct the case study is similar to the methodology discussed in the previous section.

8.3.2.1. *Case study 1: Evaluation stage*

The introductory meeting mainly addressed the nature of the firm's relationships, and what they would consider as a success in their relationships. Due to the firm's newness, their structures are highly flexible and their partnerships can be considered experimental. They are thus continuously looking for new and innovative combinations of capabilities or products. As a result, their internal processes are often adapted to suit their partner's.

Following the initial introduction, the participant was introduced to the concept of relational capability. It was explained to the participant that the evaluation procedure examines the internal capabilities of the firm that

can, in some way, impact their ability to form and develop relationships. The participant should thus not answer the questions around the capabilities based on a specific relationship, but rather based on their internal abilities. After the participant was handed the questionnaire, they proceeded to complete the questions. They were also encouraged to ask questions, and comment on the capabilities as they advanced through the questionnaire.

The participant found the questionnaire to be self-explanatory, and was able to complete it with relatively few clarifying questions. The initial reaction to the questionnaire made it apparent that the participant was familiar with all of the capabilities, and found most of these capabilities important. At the same time the participant noted that they had never thought of these capabilities in such an explicit way before. After the questionnaire was completed, it was followed by a brief discussion on the clear 'strengths' and 'weaknesses'. It was however decided to arrange a follow-up meeting that would allow the analyst to process the results, while giving the participant time to consider the different capabilities a bit longer. The initial results from the questionnaire have been displayed in Figure 8.9. The answers are on a Likert scale from one to five, one being the weakest and five being the strongest.

Based on the results of the questionnaire, and without any additional processing, the capabilities with the lowest ratings include the following:

- Leverage external resources;
- Bi-lateral knowledge development;
- Attract complementary partners;
- Communication & the flow of information between partners;
- Investment in relationships;
- Relation specific adaptations;
- Relationship risk assessment; and
- Measuring relationship performance.

				Strategy & Objectives	Organisation & Management	Function & Process
				3,35	3,20	2,78
Relationship Lifecycle	3,13	Relationship Opportunities	3,33	3,00	4,00	3,00
		Relationship Learning	3,00	4,00	3,00	2,00
		Relationship Development	2,83	2,50	3,00	3,00
		Relationship Environment	3,50	4,00	4,00	2,50
		Interaction Process	3,00	3,00	4,00	2,00
Knowledge & Information	3,06	Organisational learning	3,00	4,00	2,00	3,00
		Data	3,11	3,00	3,00	3,33
Organisational Support	3,11	Strategic Intent	3,67	4,00	3,00	4,00
		Processes and value offering	3,67	3,00	4,00	4,00
		Resources	2,00	3,00	2,00	1,00

Figure 8.9: Case study 1 results

8.3.2.2. Case study 1: Planning stage

The analyst derived initial recommendations based on a combination of the results and an existing knowledge of the context of the firm. These recommendations were then presented to the participant in an informal manner, after which the analyst and the participant jointly iterated the recommendations until a final plan was developed.

The main concern that the participant highlighted is the Relation-specific adaptations. As explained by the participant, their firm is in the position to be flexible, and adapt their offering to create and leverage more value through their partnerships. They are also able to do this without too much capital investment. In fact, this is what they regard as one of their strengths. It does however become problematic when the value of the partnership does not realise as expected, or if the adaptations do not deliver the desired results. It was

suggested and agreed that more tightly managed measures should be implemented to manage the resources that are allocated to the relationship.

The analyst proposed to the participant to consider project portfolio management (PPM) techniques as a method to address this capability. A high level PPM process, as defined by Kendall and Rollins (2003), is displayed in Figure 8.10. The figure displays the strategy as a set of goals. To achieve these goals, the company exercises some level of strategic planning process to determine the activities required to achieve those goals. Decision making is supported by using processes such as prioritisation, portfolio balancing, constraint management, and what-if analysis. The portfolio manager continuously monitors and analyses the processes and activities as they are executed to control and improve the results. The portfolio manager essentially transforms the output of the completed processes into information and recommendations to guide future decision making (Kendall and Rollins, 2003).

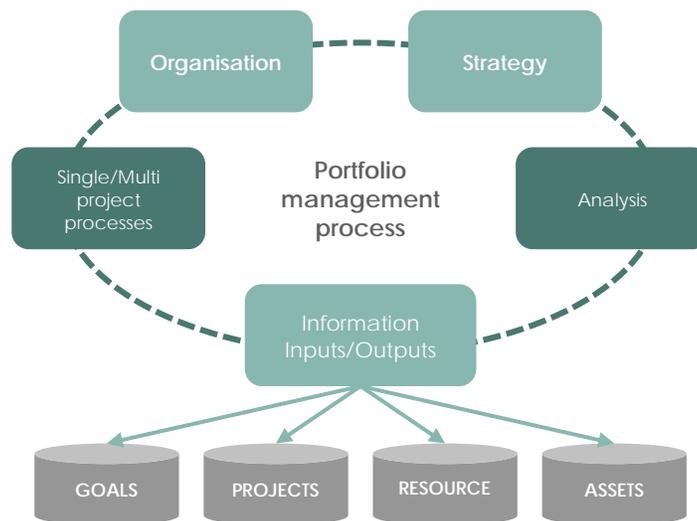


Figure 8.10: Project portfolio management process (Kendall and Rollins, 2003).

Note that detailed descriptions of the activities depicted within the PPM process are not provided as they are essentially outside of the scope of this research.

The participant agreed that it would be beneficial to more explicitly define their strategy and also to monitor the development of the relationships. The participant however explained that while they are able to see the value in the remainder of the PPM techniques, it is often performed intrinsically within their firm. The time-consuming and resource intensive nature of these exercises would not be viable to be performed explicitly. It

was however indicated that PPM would provide valuable guidelines in order to prioritise some considerations. The participant was satisfied with the results of the discussion, and indicated that they became more aware of important internal focus points. However, they derived less value from the improvement recommendations, as they already reached awareness of improvement opportunities in the process of evaluation.

8.3.3. Case study 2

The second case study was conducted with a small firm that operates in the FinTech industry. Compared to the previous case study, this firm is relatively large comprising 40 employees. They have various partners with whom they collaborate to create new avenues to reach their customers. Thus, this firm makes for an interesting case study as they are continuously looking for partnerships that will enable them to serve their customers in new and innovative ways.

8.3.3.1. *Case study 2: Evaluation stage*

When implementing the framework on a larger firm, it would be valuable to conduct the evaluation exercise with various individuals within the firm, ideally individuals who work at different levels and departments within the firm. At the time that the case study was executed, only one person was available to complete the evaluation exercise. The person was deemed an appropriate candidate as they are in a management position within the firm, and they work directly with the firm's business partners. They are thus familiar with the top-level strategy of the firm, while also in direct contact with the lower levels. While this case study might not have provided complete results, it did however present some interesting findings that made it worth to include for discussion.

The evaluation procedure was similar to that of case study 1, starting off with an introductory meeting. During this meeting, the following topics were discussed:

- The importance of partnerships for a firm to remain competitive;
- The challenges related to partnerships, and particularly the power imbalance that arise between small and large firms; and
- The relevance of internal capabilities to be able to facilitate the activities required by the partner.

The participant was handed the questionnaire and was given a brief explanation of how the procedure works. The participant then continued to complete the questionnaire, while in interaction with the analyst. After the participant had completed the questionnaire, they continued to discuss the evident strengths and weaknesses of their firm. The participant further explained how they believed these strengths and weaknesses impacted their firm and their partnerships. It was however decided to arrange a follow-up meeting to process the results, and this outcome has been included in Figure 8.11. As with the previous case study, the answers are on a Likert scale from one to five, one being the weakest and five being the strongest.

				Strategy & Objectives	Organisation & Management	Function & Process
				2,95	2,30	2,72
Relationship Lifecycle	2,47	Relationship Opportunities	2,67	4,00	2,00	2,00
		Relationship Learning	1,33	1,00	1,00	2,00
		Relationship Development	2,50	3,50	2,00	2,00
		Relationship Environment	3,83	3,00	4,00	4,50
		Interaction Process	2,00	4,00	1,00	2,00
Knowledge & Information	2,94	Organisational learning	2,00	2,00	3,00	1,00
		Data	3,89	4,00	3,00	4,67
Organisational support	2,78	Strategic Intent	3,00	3,00	2,00	4,00
		Processes and value offering	3,33	3,00	3,00	4,00
		Resources	2,00	2,00	2,00	2,00

Figure 8.11: case study 2 results

The results of the questionnaire, and without any additional processing, indicate the capabilities with the lowest ratings as follows:

- Understand partner requirements;
- Managing internal tacit knowledge;
- Boundary spanner; and
- Internal communication & information flow.

8.3.3.2. *Case study 2: Planning stage*

Preliminary results and recommendations were presented to the participant during the follow-up meeting. The weakest capabilities were interpreted based on the existing knowledge of the firm. These recommendations served as the starting point of the iterative planning procedure conducted together with the participant.

The preliminary results were consistent with the main concerns of the participant, as the results indicated that the internal communication is considered a weakness. The participant agreed and explained that the partner requirements and the partner reports are handled separately. The participant further explained that the requirements are often not properly communicated to the individual who handles the reports, and in turn, the reports are not approved by the individual who determined the requests.

It was proposed to the participant that a boundary spanner should be allocated to deal with both the receiving and sharing of information to ensure that it is corresponding. The participant agreed that this will reduce the chances of miscommunication, and consequently also increase the quality of communication with the partners. The participant did however reiterate that it will require relative internal restructuring, and it will need the buy-in from all the participants involved with these activities. It was also highlighted that all the stakeholders might not be aware of the internal communication issues, and fully realise the impact thereof on their relationships with their partners. For this reason it would be valuable to complete the evaluation activity with more than one person in the firm.

8.3.4. Summary of case study findings

Two case studies were conducted with two different firms. In both cases, the framework was considered to be relevant to the context of the firm, even though both interpreted it relatively differently. The case studies provided evidence that the framework is implementable. Furthermore, it also provided evidence that the framework is transferable and adaptable.

Through conducting the activities of the improvement process, an increased understanding of relational capability was formed, and in both cases the firms became more self-aware of their own weaknesses. It became apparent that many of the capabilities are implicitly performed, but never explicitly defined. For that

reason, the capabilities are often never assessed, and the impact thereof is not thoroughly considered. The framework was thus successful in creating explicit knowledge within the firm.

Without the need to conduct extensive analysis, the firms were able to identify opportunities for improvement. They were also able to interpret and predict what the improvements will mean for their partnerships. Based on their own interpretations, it was noted that the capability rankings mean something different to each firm. For example, if one firm indicated 'Understand partner requirements' as a weakness, they would not necessarily require the same action as a different firm that indicated the same capability as lacking. For this reason it is again necessary to emphasise that the framework should be considered within the context that it is used.

By comparing the two case studies, a relative difference can be observed with regards to the overall maturity of the firm. Case study 1 received an overall maturity score of 3.11 while case study 2 received an overall score of 2.65. The difference between these results is insignificant. It is rather more important that a user remains consistent throughout the evaluation procedure.

8.4. Semi-structured interviews

The third validation stage aims to address the third validation question: *Is the objective and approach of the RCF needed and relevant within a wider context?*

This question was addressed through conducting interviews with industry experts. The objective of the RCF is guide a South African SME to identify and improve the capabilities required to develop B2B relationships in business ecosystems. The interview process aims to gain insight into the validity of the framework through the perception of the experts. The process focusses primarily on external validity, which refers to whether the results can be generalised beyond the specific context of this study (Gibbert, Ruigrok and Barbara, 2008; Bryman and Bell, 2014). This process involved semi-structured, one-on-one interviews with industry experts. The semi-structured nature of the interviews allows the researcher to capture more authentic opinions of the interviewees through active engagement and open-ended questions. Furthermore, the physical presence of the interviewer enables the use of visual aids or additional assistance, which would reduce the risk of ambiguity and confusion.

8.4.1. Semi-structured interview methodology

In order to achieve the above outcomes, an interview guideline was developed to ensure that the followings themes are covered throughout the interview: the need for improving the relational capabilities of SMEs, the existing tools or methods that would be able to guide SMEs to improve their relational capabilities, and the proposed framework as an appropriate tool to improve the relational capabilities of SMEs. Based on these themes, the following questions were asked:

1. Do you agree that there is a need to address the capabilities of SMEs to form collaborative partnerships with other (larger) firms?
2. Do you believe that the proposed framework would be helpful towards achieving this objective?
3. Are you aware of any other frameworks or methods that would be able to achieve this same objective?
4. Do you think that the proposed framework (both in content and structure) is achievable? And
5. In which aspects of the framework, do you believe, could it fail to achieve its objective?

The questions were aimed at extracting the interviewee's expert opinion on the practicality of the framework by means of their assessment and recommendations. At the start of the interview, the interviewee is given an overview of the framework by means of a presentation. This presentation is included in Appendix H. This was done to clarify any ambiguities or confusion before the interview commenced. The interview sessions were open to questions or interruptions to maximise the value gained from this process.

Individuals who are experts in at least one of the research fields were identified, and approached to participate in this validation process. The interviewees were identified through various avenues, and they were selected based on relevant expertise, as well as their experience. A list of the interviewees and their relevancy to this study is included in Table 8.3. All interviewee responses were anonymised. The semi-structured interviews were conducted over a timespan of three weeks, and lasted between 1 and 2 hours.

The level of theoretical saturation was assessed after every interview. The interviewing process started with four interviews, after reviewing the collected information it was decided to add an additional interview. After five interviews, the collected information reached a saturation point, meaning that newly collected data did not contribute any significant new information. Quality was maintained throughout the interviewing process by continuously recording and analysing data as the process progressed.

Table 8.2: List of interviewees

Interview date	Interviewee	Summary of position or experience
15 October 2018	Mr H	Mr H has more than eight years' experience in the private equity industry. He has specialist knowledge and is an active researcher in the fields of enterprise engineering, strategy and SMEs.
17 October 2018	Dr G	Dr G is an expert on complex systems, strategy, business models, technology and innovation, e-business and management. Dr G has experience in developing conceptual tools to guide strategic thinking and innovation. He has also written and published a book on strategy.
17 October 2018	Ms A	Ms A is an expert on technology platforms and has conducted research on the development and functioning of platforms.
18 October 2018	Mr V	Mr V is a lecturer in strategy for an MBA class, and has done strategic consulting for more than 20 years. He is considered an expert in the field of strategy, innovation, SMEs and group behaviour psychology.
30 October 2018	Mr DK	Mr DK is an expert on business support and process improvement, having several years' experience as a consultant and project manager. He completed his MBA, and is active in the start-up space by providing support to various small businesses to achieve growth.

8.4.2. Semi structured interview results and discussion

The transcripts of the recorded interviews are included in Appendix I. The following section discusses the highlights, attention points and the noticeable conclusions drawn from the interviews.

1. There is a need to address this research problem

All of the interviewees strongly agreed that there is a need to address this research problem. Firstly, the interviewees welcomed the intent of the framework to address the needs of SMEs, as expressed by Mr G, *"Anything that you can do to help SMEs to achieve better outcomes – that is useful."*

When the need for SMEs to form partnerships was discussed, Mr V shared his enthusiasm, *"Collaborative partnerships, those two words say everything about what some of the most successful companies have done right."* Mr DK agreed as he explained that *"the world is moving towards collaboration."* This was substantiated

by Mr G who expressed that he agrees with *“this shape towards more collaboration due to technology”*. Mr H continued to explain that *“if you look at why SMEs fail, it is often due to a lack of resources. And if you ... ask why businesses do survive? It is because they are able to attract resources even if it is not always under their control. Partnerships [can be] one way that you can do that. How to actually formulate the partnership and to harness and to develop [the partnership], that is where I think there is currently a void.”*

Ms A provided a practical perspective as she explained the following, *“I’m currently working for a start-up type of business that forms part of a larger company ... and if I look at how we work together with other companies, I realise how important it is to share ‘our information’ so we can leverage it to get something more. And there I see especially that relationship building is extremely important. Thus, with the [framework] if you show people where they should focus to build relationships, and how they really can work with other people, from that one can learn quite a bit.”*

2. There are no known research frameworks that achieve the same objective as this study

The interviewees are in strong agreement that there are no existing frameworks that explicitly addresses this objective. Mr H even expressed that he is *“99% sure that there is not a theory surrounding this.”*

“I have been looking at it for the past 6 years and nowhere have I found something that says ‘don't worry if you don't have resources, here are the partnerships where you can find it, and this is how you establish and build partnerships and be on your merry way’. If it was out there I probably would have found it” – Mr H

Dr G explained that he is aware of *“other bodies of literature that deals just with strategic partnerships in general, [for example] the transaction cost theory.”* However he further explains that he thinks it is taken for granted, *“I think a lot of theories align on (sic) some other type of goal, but they do realise based on the internal perspective or the resource based perspective. Inherently if you don't have the capabilities yourself you will need to source it. That sourcing can take on many different forms, but it will inevitably require [of] you to establish those relationships or partnerships.”*

Mr H agree with this sentiment by explaining, *“It will only say that you are able to do it through partnerships, but how, we still don't know. You know it's important but nobody have looked at how to do it.”*

Ms A also agreed that she is not aware of any other frameworks that can achieve this objective, further adding that through her own research on platform development she identified a shortcoming of taking *“an ecosystem approach. Especially if we want to move forward.”* She expressed the importance and the difficulty related to enabling *“someone who operates in one level of the platform to communicate with the right people on other levels of the platform and on the outside within the ecosystem.”*

3. The framework’s approach to capability improvement is suitable

The approach that the framework takes to achieve improvement was discussed with the interviewees. The interviewees agreed that it is an appropriate approach to achieve the objective of the framework. Mr H identified that the framework is *“in line with the SWOT approach, to look at the strengths, weaknesses, opportunities and threats. Then to identify where the strengths is, where can I improve. And then to determine how are we going to address those parts. So if that's the way that you do it then that would be hundred percent correct.”* He further explained that this process is generally accepted *“as long as you can validate and verify that more often than not you are able to identify the shortcomings and the characteristics of the TO-BE desired state.”*

Mr DK expressed that he likes *“the idea that [the framework] doesn’t just ask a question, but that [it] rather describes different scenarios from which [the users] must choose.”* According to Ms A, the framework *“will help you to be more proactive if you work in a project with other people again. So I think from a SME's side, it will definitely help them just to see this is what one can focus on or pay attention to.”* Mr H expressed that *“you must be able to identify failure and problem areas, you must be able to say what victory is and determine the how we are going to move from failure to victory. And that is exactly what you are doing with the framework. So in that regard I completely agree.”*

Mr V expressed that *“just the fact that the framework exists, that is everything.”* Mr DK, in agreement, expressed that *“just to have something – that is already a big win.”*

4. The primary purpose of the framework is to create knowledge

After completing the case studies during the previous validation phase, a concern was raised due to the nature of process maturity and the suitability thereof for SMEs. The interviewees pointed out that the aim of the framework should not be to encourage increasing process maturity. Mr H explained that if process maturity is

the objective, *“you would receive a lot of push back from SMEs. You see they have certain characteristics, characteristics like they don't have a lot of time, they don't have a lot of money and they are eternally stretched. So to tell them they have to better define their processes, is probably not the best way to go.”*

The interviewees however addressed these concerns by pointing out the value in creating knowledge. Mr H explained that his approach and recommendation would be *“to build explicit knowledge.”* Mr G agreed as he said, *“it is always valuable for businesses to have another lens to look at themselves,”* he continued to say that *“the main point is actually for that person to make their own judgement call about what they think they need to improve on.”* Ms A added in agreement that *“by saying 'I'm making you more aware of this, this is what you should focus [on] rather than saying 'that's how to do it' is a very good approach.”* Mr V also explained that *“the fact that I can give you something in a framework, it enables you to look in the mirror.”*

Mr H explained that you want someone to *“walk away from a session and say ‘Wow I have never thought of this, we explicitly know now this is a shortcoming, we explicitly know that this is where we want to be, and we explicitly know that this is what we want to do now’. And then there is some type of action plan. You will be able to do that in a day.”* He continued to say that *“if you are only able to create the tangible knowledge, then you have already addressed the risk of failure. People can't unlearn things. It will be very difficult for you to unlearn something. If they know that they have to do the following things to harness a partnership, then they know those things. But to define processes might be a bridge too far for a constrained SME.”* Mr DK also added that *“there definitely are ways to structure processes. You can either formalise everything, and run the business as a machine, or you can ask the question at least once a week, how do we feel about this relationship? As simple as that.”*

Mr G added an interesting note as he said *“that it is not so much [the researcher's] responsibility to interpret this data as it is for [the SME] to use this as an opportunity to see where the actual strength lie and where [there are] opportunities to improve. If the capabilities are on a granular enough level, there should be specific actions that can flow from it.”* This confirmed the findings of the case studies, as the participating SMEs did not receive as much value from the interpreted results and improvement recommendations.

5. The framework takes an internal capability view

The internal capability view of the framework was discussed after Mr G raised his concerns *“that there is an external point of view that is more focused on the value proposition of the relationship between the two businesses”*. He continued to say that *“that is going to be a bigger determinant of whether the relationships will be established and sustained than it is going to if we take an internal point of view.”*

While acknowledging the limitations of taking an internal capability view of SMEs, a deliberate decision was made to focus on internal capability in this study, especially as it was determined during the first part of the study that there was a lack of research around this perspective. The framework was thus developed with the aim to enable SMEs to improve their internal capabilities in such a way that it would not constrain them. This point was confirmed by Mr G, as he continued to say that he does *“however think that your internal capabilities represent your action potential, and what you are capable of doing. That is a very interesting perspective because it means that these internal capabilities are sort of like a baseline. You need it as the baseline to do anything. So this framework might be good for just ensuring that your baseline is in place. But all I'm saying is that, even having that, it might not be enough to get you where you want to go. But it is important as a building block. It is sort of like a precondition.”*

6. The success of the framework depends largely on the implementation thereof

All of the interviewees stressed that the success of the framework is largely dependent on the implementation process. Mr H explained that *“any type of framework that is focused on SMEs will always have some shortcomings.”* For this reason it is critical to consider the conditions under which the framework will be used. Mr H pointed out that frameworks are *“often done only by the top people.”* He however explained *“you need the right people that will be able to make the decisions, and also those people that actually formulate the partnerships.”*

Ms A expressed the importance of the *“context and how people would interpret [the framework].”* Mr V also highlighted the importance *“to determine whether everybody understands the framework.”* He continued to explain that it is necessary to *“explain the framework to [the users] in a way that they would understand. And there's only one way to achieve that, you have to tell the story.”* Mr DK added that the framework could fail *“if somebody answers the questions without being honest with themselves.”*

Ms A further explained the framework must be *“flexible and you need to scale it. If only a few people [are] involved, it would be much easier because you can communicate directly with each other, you can make sure everyone interprets it in the same way.”* Mr DK also addressed this aspect as he explained that *“the framework needs to be adaptable and transferable for it to succeed.”* Mr H concluded that the framework would be achievable *“if the process is easy to follow and if you have the right micro activities that allow different people to contribute.”*

8.4.3. Summary of semi-structured interview findings

The industry experts provided a final confirmation that the research problem needs to be addressed. They raised valuable considerations, and added fresh perspectives to the approach to the problem, and how to re-assess the framework. Overall, the experts agreed with the structure and the content of the framework, and they deemed it an appropriate approach to address the problem.

Some of the most significant findings from the final validation stage are related to the value and the implementation of the framework. Firstly, all of the industry experts agreed that the most value in the framework lies in the process of knowledge creation. The availability of an explicit process or a mechanism to guide the improvement process was deemed the most important and most valuable aspect. In this regard, the RCF (and related RCMM) can be a powerful tool to initiate a thinking and self-reflection process.

Secondly, it was agreed upon by the industry experts that the manner in which the framework is implemented is one of the biggest determinants to whether or not the results would be successful. The level of education and proficiency of the user, and the communication during the improvement process were identified as some of the most critical factors. It was also emphasised that the framework should be presented in a manner that is easily understandable. A deciding factor however, is the will and appetite to change. It is critical that the user of the framework has realised the importance of partnerships, and identified the need to improve relational capability.

The concluding remarks with regards to the framework itself concern the transferability, scalability and adaptability of the framework. It was pointed out that for the framework to be resilient, it needs to be useful and successful in different types of situations.

8.5. Refining the RCF

Throughout the three stages of the validation process, various refinement activities were identified to improve the overall quality of the RCF. The refinement activities are related to either 1) the content of the RCF (capabilities), 2) the structure of the RCF, or 3) the implementation of the RCF through the RCMM. The refinement activities are summarised in Table 8.3.

Table 8.3: Summary of refinement activities

Area	Refinement activity
<p>Content</p> <p><i>These activities are related to the individual capabilities included in the RCF.</i></p>	<ul style="list-style-type: none"> i. Allocate internal resources – Focus on the optimisation of the resources that are available for the relationship (<i>Capability ranking questionnaire</i>). ii. Establish shared vision and goals & Organisational vision and goals – Include an element of evolution (<i>Capability ranking questionnaire</i>). iii. Communication and flow of information between partners – Focus on the definition of communication channels (<i>Capability ranking questionnaire</i>). iv. Measuring relationship performance & risk assessment – Emphasise the implicit nature of the activities related to these capabilities (<i>Capability ranking questionnaire</i>). v. Product and process experimentation – Include element of continuous process improvement (<i>Capability ranking questionnaire</i>). vi. Managing relationship portfolios – Include definition of the functional requirements of a relationship (<i>Capability ranking questionnaire</i>).
<p>Structure</p> <p><i>These activities are related to the structuring of the RCF.</i></p>	<ul style="list-style-type: none"> i. Highlight interrelation between Bi-lateral knowledge development and Managing intellectual property (<i>Capability ranking questionnaire</i>). ii. Change Relationship Learning item to form part of Knowledge and Information area (<i>Capability ranking questionnaire</i>). iii. Ensure that the tense of all capabilities are consistent and that all capabilities have verbs attached (<i>Semi-structured interview</i>).
<p>Implementation</p> <p><i>These activities have been identified as critical when implementing the RCF (through the RCMM)</i></p>	<ul style="list-style-type: none"> i. The right people in the firm must conduct the evaluation (<i>Semi-structured interview</i>). ii. The user must be receptive to what the framework aims to achieve (<i>Semi-structured interview</i>). iii. The user must be sufficiently educated to understand the applicability of the framework (<i>Semi-structured interview</i>). iv. The results of the evaluation must be interpreted within the context of the specific firm (<i>Case study</i>).

After the refinement activities have been completed, the final, refined framework is as displayed in Figure 8.12.

	Organisational Construct	Strategy & Objectives	Organisation & Management	Function & Process
Relational Construct				
Relationship Lifecycle	Relationship Opportunities	RL/SO1 – Establish shared relationship vision and goals	RL/OM1 – Interpret and contextualise partner diversity	RL/FP1 – Identify mutual opportunities
	Relationship Development	RL/SO2 – Create and sustain unique value offering RL/SO3 – Leverage external resources	RL/OM2 – Allocate internal resources to relationship	RL/FP2 – Adapt to relationship
	Relationship Environment	RL/SO4 – Develop partnering strategy	RL/OM3 – Obtain market knowledge RL/OM4 – Uphold external reputation	RL/FP3 – Identify complementary partners RL/FP4 – Attract complementary partners
	Interaction Process	RL/SO5 - Establish contracting policy	RL/OM5 – Assign boundary spanner	RL/FP5 – Define communication channels between partners
Knowledge & Information	Relationship Learning	KI/SO1 – Understand partner requirements	KI/OM1 - Manage intellectual property KI/OM2 – Manage tacit knowledge between partners	KI/FP1 – Create joint knowledge
	Organisational learning	KI/SO2 - Manage internal tacit knowledge	KI/OM3 – Determine relationship functional requirements	KI/FP2 – Manage internal communication & information flow
	Data	KI/SO3 – Establish data exploitation strategy	KI/OM4 – Externalise data & information	KI/FP3 – Create data security architectures KI/FP4 - Capture, store & retrieve data KI/FP5 – Analyse data
Organisational Structure	Strategic Intent	OS/SO1 – Establish organisational vision and goals	OS/OM1 - Establish trustworthiness through behaviour OS/OM2 – Balance relationship portfolios	OS/FP1 – Enable individual reflective capacity
	Processes and value offering	OS/SO2 – Maintain adaptable and flexible organisational structures	OS/OM3 – Encourage interdisciplinary knowledge	OS/FP2 – Enable product / process experimentation
	Resources	OS/SO3 – Balance investment in relationships	OS/OM4 – Assess relationship risk	OS/FP3 - Measure relationship performance

Figure 8.12: Refined RCF

The description of each capability that is a part of the Relational lifecycle area is included in Figure 8.13.

RL/SO1 – Establish shared relationship vision and goals: To define an evolving vision or set goals for the relationship, which is aligned with the vision and goals for both of the firms in the partnership.

RL/SO3 - Leverage external resources: The resources (assets, infrastructure, technology, information, markets, etc.) of a partner is utilised to achieve or enhance relationship goals or internal organisational goals.

RL/SO5 – Establish contracting policy: Establishing contracts with partnering firms that sufficiently protects the interests of both parties, while maintaining the required level of flexibility.

RL/OM2 – Allocate internal resources to relationship: Resources that are available to relationships are optimised, receiving maximum benefit from maximum relationships, relationship activities and internal business activities.

RL/OM4 – Uphold external reputation: To establish and maintain a reputation that will appeal to potential partners. To create a visibility of your presence and reputation amongst potential partners.

RL/FP1 – Identify mutual opportunities: Continuously communicating emerging opportunities that will be beneficial to both partners. Communicating and agreeing if adjustments need to be made to the partnership expectations.

RL/FP3 – Identify complementary partners: To scan and explore environment in order to identify partners in accordance with partnering strategy.

RL/FP5 – Define communication channels between partners: Communication channels between partnering firms are clearly defined. Information is readily available and is exchanged as needed.

KI/SO1 – Understand partner requirements: Understand the business of the partnering firm. Understand their product and their processes, and interpret how own value offering can enhance or contribute to their value offering for their clients.

KI/SO3 – Establish data exploitation strategy: To Determine how accumulated data can be exploited in order to reach organisational and relationship goals, to improve firm's performance and to assist in decision making.

RL/SO2 – Create and sustain unique value offering: Value offered to the partner must be unique to a certain extent. Uniqueness can either refer to the type of value offered, or to the type of relationship in terms of trust in capability, goodwill etc.

RL/SO4 – Develop partnering strategy: To explicitly define a strategy that determines which business activities will be performed externally (outsource, partnerships etc.), in order to reach the organisational goals.

RL/OM1 – Interpret and contextualise partner diversity: Understand the differences in culture, management style and organisational structure of the partner, and understand what these differences mean for the partnership agreement.

RL/OM3 – Obtain market knowledge: To be consistently aware of external market, including market structures, potential partners, clients and competition, technological advances in the industry and possible market disrupters.

RL/OM5 – Assign boundary spanner: The individual within the firm who is designated to interact with the partnering firm has extensive knowledge, and understanding of the context of the partnering firm.

RL/FP2 – Adapt to relationship: Adaptations are made to internal processes or activities in order to better suit the needs of a partner. Adaptations are prioritised according to the related risks and expected rewards.

RL/FP4 – Attract complementary partners: To position firm in order to enhance attractiveness to potential identified partners.

KI/SO2 - Managing internal tacit knowledge: Transferring knowledge between individuals within the firm (e.g. teaching, mentoring etc.)

KI/OM1 - Manage intellectual property: To sufficiently protect intellectual property, while still being able to share it with partners in order to collaborate or innovate.

<p>KI/OM2 - Manage tacit knowledge between partners: Transferring partner-specific knowledge between individuals in partnering firms (e.g. teaching, mentoring etc.)</p> <p>KI/OM4 – Externalise data & information: The documentation of information is done consistently and professionally. Attention is given to the presentation of information, particularly when it is shared with partners.</p> <p>KI/FP2 – Manage internal communication & information flow: Communication channels within the firm are open and transparent without extensive hierarchies that restricts information flow. Information is readily available and is exchanged frequently between individuals.</p> <p>KI/FP4 – Capture, store & retrieve data: To implement sophisticated methods and techniques to capture, store and retrieve the data that accumulates through business activities or through partnerships. The necessary infrastructure should be available to the firm.</p>	<p>KI/OM3 – Determine relationship functional requirements: The relationship needs are actively translated to functional requirements, specifying the required inputs and desired outcomes.</p> <p>RL/FP1 - Create joint knowledge: Jointly solving problems, identifying ideas or innovating by combining the knowledge of individuals in partnering firms.</p> <p>KI/FP3 – Create data security architectures: To implement and constantly review advanced security measures to ensure the required level of security, as well as to meet the partner's security standards.</p> <p>KI/FP5 – Analyse data: To use advanced and sophisticated data analytics techniques that will capture the maximum amount of value from available data. Where possible, processes should be standardised and automated.</p>
<p>OS/SO1 – Establish organisational vision and goals: To establish and continuously re-evaluate organisational vision and goals. The goals are determined from a holistic view of latent opportunities and future scenarios, including future markets and the revitalisation of old markets.</p> <p>OS/SO3 – Balance investment in relationships: The return on investments provides sufficient slack for activities to deviate when required.</p> <p>OS/OM2 - Balance relationship portfolios: To balance the relationship portfolio to align with strategic objectives. The impact of potential and existing relationships is managed by considering current opportunities and future scenarios.</p> <p>OS/OM4 – Assess relationship risk: To measure and monitor the critical business, technical, financial and environmental risk factors of a relationship. To understand the implications of risk related to a relationship.</p> <p>OS/FP2 – Enable product / process experimentation: The firm can conduct experimentation and other continuous improvement activities without largely disrupting the existing structures, and the functioning of the firm.</p>	<p>OS/SO2 – Maintain adaptable and flexible organisational structures: The organisation is able to adapt comfortably and respond timely to changing business environments and emerging opportunities or disruptions.</p> <p>OS/OM1 - Establish trustworthiness through behaviour: The management of the firm consciously exhibits trustworthy behaviour (such as attitude, consistency, availability, respectfulness etc.) to encourage trustworthiness throughout the firm, as well as in partnerships.</p> <p>OS/OM3 – Encourage interdisciplinary knowledge: Employees have a strong holistic understanding of organisation. Processes to continuously educate employees in a cross-disciplinary way have been institutionalised.</p> <p>OS/FP1 – Enable individual reflective capacity: Employees are granted an appropriate freedom and authority to take responsibility and make decisions. Reflecting on change and mistakes can create learning opportunities.</p> <p>OS/FP3 – Measure relationship performance: To determine how a relationship is performing in order to meet the goals and objectives of the relationship. To be able to determine in which aspects the relationship must improve in order to improve its performance.</p>

Figure 8.13: Relational capability descriptions

8.6. Chapter conclusion

The validation activities presented in this chapter aimed to address the following key questions pertaining to the framework:

- i. Are the relational capabilities relevant to what the RCF aims to achieve?
- ii. Is the RCF and RCMM implementable and would it be valuable in its use to an SME?
- iii. Is the objective and approach of the RCF needed and relevant within a wider context?

These questions were answered through the Capability ranking questionnaire, two illustrative case studies and various interviews with industry experts. The individual capabilities underwent rigorous validation by asking ten SME owner-managers to indicate whether they felt the capabilities are relevant, whether it has a positive impact, and how much effort or difficulty are related to implementing the capability. The capabilities were reviewed and modified accordingly. The participants contributed various considerations which provide a practical perspective to consider the capabilities.

The case studies were conducted to evaluate how the framework would react in a practical environment. The framework was consequently tested under two different circumstances and provided positive results in both cases. Finally, the interviews with industry experts provided an overall confirmation of the need to address this research problem. The experts shared both their enthusiasm and their knowledge, and provided some insightful considerations that was used towards the refinement of the framework.

The final framework with the incorporated modifications are presented at the end of this chapter.

9. Conclusion

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The final chapter presents the conclusions and the results that were drawn from completing this study. It provides an overview of the research problem, and again highlights the necessity for SMEs to form and sustain successful partnerships. The methodology that was executed is discussed to explain the process that was followed to obtain the results. The study concludes by identifying and recommending opportunities for future research.

9.1. Overview of research

This research commenced with the ambitious dream to understand how to better support South African SMEs to navigate through an increasing dynamic business environment. With the fast pace of technological change and fast-changing business landscape, the topic of SME support is becoming more critical and relevant. This study viewed the business landscape from an ecosystem perspective for deeper understanding of the increasingly dynamic and interactive business landscape. The ecosystem perspective provides a powerful lens through which this transformation is captured. Business ecosystems emphasise the growing importance of relationships, partnerships, and collaboration.

Partnerships consequently became a central theme in this study when it became apparent that much of the value and the opportunities related to ecosystems lie in the new and innovative combinations and collaborations that firms are able to form when coming together. Partnerships have long been recognised as a channel for SMEs to access and leverage resources that they would not have been able to access on their own. At the same time, many characteristics inherent to SMEs, such as agility, flexibility and innovation capabilities, are characteristics that larger firms are increasingly looking for in partners.

The combination of small and large firms (or, in fact, any complementary firms) is creating a new avenue that should be further explored. Partnerships are playing an increasingly important role in both SME growth and SME survival. The reality of partnerships however, particularly from the perspective of an SME, is both complex and challenging. The objective of this research consequently evolved to developing a framework that can guide a South African SME to identify and improve the capabilities required to develop B2B relationships in business ecosystems. While this objective in no way completely fulfils the goal that this research study originally set out to achieve, it seems to be one step (on yet a long road) in the right direction.

In pursuit of this objective, a systems engineering approach was adopted to guide the problem solving process. This means that the problem was solved in five phases, the first of which involves the definition of the problem as a whole, as included in **Chapter 1**. The second phase of systems engineering aims to deconstruct the main research problem into smaller sub-problems. This phase proved to be the most extensive phase of the process as it is the most ambiguous. Starting this journey, three literature domains have been identified that are relevant to the problem at hand, these include 1) South African SMEs, 2) Business ecosystems, and 3) B2B relationships.

Each domain was broken down into research questions to guide the reviewing process, which is included in **Chapters 3, 4, and 5**. While the majority of the literature review was conducted through exploratory research from a constructivist philosophical perspective, supplementary tools and techniques were employed to ensure that the review is comprehensive and insightful. These included a systematic literature review and a secondary case study analysis. The combination of the three literature domains provided a comprehensive theory base. It was believed that the theory base contained a large amount of valuable, implicit knowledge.

The study thus progressed to analyse the content of the theory base and subsequently convert the implicit knowledge into explicit knowledge. Jabareen's (2009) conceptual framework analysis (CFA) method was employed to identify, deconstruct, categorise and integrate concepts that are relevant to the research problem. The activities of the CFA process are included in **Chapter 6**, and resulted in five main concepts that are considered to be the relationship requirements. These included goal congruency, trust, collaboration, flexibility, and learning. The relationship requirements in this regard refer to the conditions that are necessary and compulsory for relationships to function as desired in ecosystems. The relationship requirements were also considered to be the sub-problems, marking the end of the second systems engineering phase.

The third phase of systems engineering process involves finding sub-solutions to each of the sub-problems. As per the objective of this research, the relationship requirements were converted into related relationship solutions, also included in **Chapter 6**. The relationship solutions refer to the organisational means of dealing with a specific relationship requirement, which is in the form of relational capabilities. In total, 36 relational capabilities were identified. These capabilities represent the sub-solutions, marking the end of the third systems engineering phase.

The fourth phase of systems engineering involves consolidating the relational capabilities in such a manner that it would be useful to an SME. In **Chapter 7**, the capabilities are constructed into a two-dimensional framework, including the Relational construct on the one axis and the Organisational construct on the other. This framework, called the Relational Capability Framework (RCF), addresses the multiple dimensions of relational capability throughout various parts of an organisation. For an SME to use the RCF, an additional step is however required. The framework was transformed into an improvement tool by adding a third dimension, namely capability maturity. The improvement tool, referred to as the Relational Capability Maturity Model (RCMM), aims to provide a method to evaluate, plan and improve the relational capability of a firm. It does however not include implementation. The combination of the RCF and RCMM represent the whole solution to the problem defined during the first systems engineering phase. The framework thus completes phase four.

The fifth and final phase of systems engineering aims to determine whether the whole solution is a viable solution to the whole problem. The framework was consequently subject to three stages of validation, through which it was continuously refined. The validation is included in **Chapter 8**. The first validation stage involved a Capability ranking questionnaire through which the content of the framework was rigorously validated to determine whether it is relevant and appropriate to what the RCF aims to achieve. Ten participants were asked to rate each individual capability according to four different criteria. This validation stage identified the capabilities which participants deemed to be irrelevant, potentially harmful or having a low impact but requiring high effort or difficulty. In total, 12 capabilities were identified that required further investigation. These capabilities were reviewed and refined accordingly, and one additional capability was added to the framework.

The second validation stage involved conducting two descriptive case studies. This validation stage aimed to determine whether the RCF (and the RCMM) can be implemented in a practical environment, and whether it

will be useful and valuable. The perception of the RCMM was evaluated from an SME point of view, consequently gaining insights into the challenges that could be found when implementing the framework. In both cases, the application of the RCMM led to positive results, as the participants were able to identify possible improvement opportunities based on the results of the RCMM improvement process.

The third and final validation stage was completed by interviewing industry experts. The aim of this stage was to determine whether the objective and the approach of the RCF can be deemed necessary and relevant within a wider context. A total of five experts were identified based on their expertise and experience related to at least one of the research domains. The experts viewed, analysed and discussed the framework from various perspectives, providing the final validation and confirmation of the framework. Important contributions were made with regards to the structure and implementation of the framework, consequently strengthening the development of the RCF.

Through validating the framework, it was quickly concluded that the value of the framework does not lie so much in providing solutions, but rather in creating knowledge. The framework can thus be used to guide an SME to become self-aware, to learn about their capabilities, understand the impact of their weaknesses, and identify areas of growth. The RCM enables SMEs to address and improve their relational capabilities, and consequently strengthen their position in B2B relationships.

If SMEs are empowered to leverage partnerships, they have an increased chance of survival, and can blossom into sustainable, successful business entities. Thus, the RCF can make some valuable contribution to the growth and prosperity of the much needed SME market as part of the developing economy of South Africa.

To summarise, the objectives as determined in **Chapter 1** was met in the following ways:

- i. The research problem was defined in **Chapter 1**, and the relevant and necessary background was provided. The research commenced with the main objective to develop a framework that can guide a South African SME to identify and improve the capabilities required to develop B2B relationships in business ecosystems.
- ii. Three research domains were identified, including South African SMEs, Business ecosystems, and B2B relationships. Each domain was broken down into sub-research questions, included in **Chapter 1**.

- iii. An extensive literature review was conducted in **Chapters 3, 4, and 5** to address each of the sub-research questions as defined in **Chapter 1**.
- iv. Through analysing the literature base included in **Chapters 3, 4, and 5**, five relationship requirements were identified. The relationship requirements are included in **Chapter 6**, and refer to the necessary or compulsory conditions required for the relationships to function as desired. The relationship requirements represent the sub-problems.
- v. Also included in **Chapter 6**, the relationship requirements were converted to the related organisational capabilities (relational capabilities), representing the sub-solutions.
- vi. In **Chapter 7**, the relational capabilities are consolidated into a meaningful, two-dimensional framework, referred to as the RCF. The RCF is further converted into a tool that can be used to guide the improvement process.
- vii. **Chapter 8** presents a three stage validation process that provides confidence that the framework delivers on its main objective.

9.2. Appraisal

Upon completing this study, it is clear that partnerships form an imperative part of research on SME support. Considering the importance, it is a topic that is seemingly underrepresented. While the importance and necessity of partnerships are widely emphasised, there is still little known about what can be done by a firm to achieve a higher success rate in partnerships, and even more so in the case of SMEs. The researcher feels confident that this study contributes to the body of knowledge of SME partnerships, and specifically on how to improve B2B relationships.

As the research progressed, the researcher became increasingly aware of the complexity of each of the research domains. For this reason, it is necessary to acknowledge that the study is subject to certain limitations. As it became apparent during the validation of the framework, this study is limited to taking an internal capability view. There are several other factors that can also be determinants of relationship success. The internal relational capabilities are however critical and considered an important precondition. This means that the framework is not a complete solution that guarantees partnership success, but it addresses a cardinal aspect of sustainable B2B partnerships, namely relationship variables. It is necessary to emphasise that the

framework acts as a guideline with the primary purpose of creating knowledge. Thus, the framework is not a prescriptive model that aims to provide an exhaustive list of recommendations. Furthermore, the impact of the framework is largely dependent on the proficiency of its user.

The relational capabilities are also identified by looking at business interaction from an ecosystem perspective. While ecosystems provide an insightful perspective to study the business landscape and understand the dynamics between firms, it is not the only way to look at the business context. Other approaches include value webs, business networks, clusters, open innovation, to name but a few. It was however decided that it would not be constructive to incorporate all relevant perspectives as they would not necessarily provide contrasting ideas on B2B relationships. Business ecosystems were able to capture the essence of the type of partnerships that were researched in this study.

B2B relationships as they are discussed in this study also only represent the tip of the iceberg. These relationships are based in a complex research domain, and can expand to include in-depth psychological and economic discussions. While these are important and relevant discussions to have, the B2B theories that have been included in this study are deemed appropriate to limit the scope of this study to the Industrial Engineering domain.

9.3. Recommendations for future work

The nature and complexity of the research domains provide several promising possibilities for future research. These possibilities include the following:

1. The researcher believes that a valuable starting point to continue this research is to conduct **further investigation into the relational capabilities**. This study primarily focused on identifying the relevant capabilities, and through the validation it was clear that these capabilities are critical to partnerships. At the same time, the validation process highlighted that these capabilities mostly have a high degree of difficulty and effort related to their implementation. These difficulties contribute, in part, to the challenge that SMEs face when establishing partnerships. If methods can be developed to implement these capabilities with lower effort and difficulty, it will relieve SMEs of a great burden. The researcher proposes an investigation into the capabilities to establish goals, processes, and best practices related to each of the capabilities.

2. Based on the result of a study such as described above, the researcher proposes an **investigation into developing a reference toolbox** that will be able to guide the improvement planning stage.
3. The framework would benefit from an increasing understanding of the **interrelations and interdependencies between the relational capabilities** (i.e., those that are not yet depicted in the RCF structure, Figure 8.12)
4. With regards to the implementation, specifically of the RCMM, a **methodology** is required to guide the implementation of the framework when it has **multiple users within one firm**. In both cases, only one user completed the evaluation from each firm. The results will however require different processing if it is completed from multiple perspectives.
5. A more extensive validation process is proposed in which the **RCMM is applied in two separate rounds**. The results obtained from the first applications should be implemented, after which the second round should measure whether improvement has occurred. In this way, the impact of the framework can be evaluated.
6. Finally, an **initial training procedure** can be developed to educate stakeholders in the use and necessity of the RCF.

9.4. Concluding remarks

This chapter concludes this research. Marking the end of this study, the researcher wishes to express that *relationships are complicated*. A successful relationship contains an intricate combination of complex elements that need to fall in place in just the right way. It also has the added complexity of dealing with human behaviour, as relationships form between individuals, and not firms. Having said this, the right methodologies and tools can add considerable value to relationships. The RCF is not offered as a simple, complete and full-proof solution to a successful partnership. It rather aims to combine the little that we do understand of partnerships with some of the right elements, and pave the path towards successful partnerships.

The objective of this research is based on extensive review of the literature, providing evidence towards the importance of business partnerships. Partnerships are widely acknowledged, both formally and informally, as a powerful vehicle for business growth. However, this study took a turn on the road less travelled, by

combining this existing literature with theory on organisational structure, or to be more specific, theory on organisational structure of SMEs. The combination of these literature domains also fills an important gap. It sheds light onto how the most imperative parts of a relationship can be cultivated within an SME.

In the final analysis, this study's strongest suit is that it is strongly oriented towards a practical utility. In the researcher's opinion, this is one of the most important parts regarding research on SME support. As it was determined during the validation stage, the framework does not entail extensive and complicated procedures to contribute practical value. It does not require a great deal of time and resources to implement. And most importantly, it focusses on improving the small parts that are within the control of an SME.

"Great things are done by a series of small things brought together" - Vincent Van Gogh

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Appendix A – Publications

The following publications were published in conferences during the tenure of the study:

Els, C., Grobbelaar, S. and Kennon, D. (2017) ‘A systematic review of business ecosystems to support and improve survivability of SMEs in South Africa’, in 28th SAIIE Annual Conference. Vanderbijlpark, South Africa.

Els, C., Grobbelaar, S. and Kennon, D. (2018) ‘Redefining the role of SMEs in value creating ecosystems: Evidence from case studies’, in 27th International Association for Management of Technology (IAMOT). Birmingham, United Kingdom.

Appendix B – Systematic literature review

Table B.1: Systematic Review Results

No	Author(s)	Title	Concept focus area	Level of application	Type of publication	BE structure layer	Barriers for SME adoption	Journal or Conference Title
1	(Annanpera and Liukkunen, 2014)	Service design and coevolution of an emerging SME wellness ecosystem	BE	HL	Framework Development	Service & Technical Infrastructure	Establishing trust relationships	Lecture Notes in Business Information Processing
2	(Damaskopoulos, Vitkauskaitė and Gatautis, 2008)	Extended and dynamic clustering of SMEs	BE	Concept	Theoretical	Governance and Policy	Dynamic environment	Engineering Economics
3	(Darking, Whitley and Dini, 2006)	The challenge of building public technology infrastructure: Issues of governance and sustainability in a digital business ecosystem	Relationship	DL	Framework Development	Governance and Policy	Complex and expensive internal processes	Proceedings of the 14th European Conference on Information Systems, ECIS 2006
4	(Dominic <i>et al.</i> , 2011)	A study to examine if integration of Technology Acceptance Model's (TAM) features help in building a hybrid Digital Business Ecosystem framework for Small and Medium Enterprises (SMEs)	BE	DL	Framework Development	Service & Technical Infrastructure	Difficulty with IT adoption	Proceedings - 2011 9th International Conference on Frontiers of Information Technology, FIT 2011
5	(Estanyol and Lurgi, 2011)	On the implementation of a DBE to improve SME collaboration	BE	DL	Framework Development	Service & Technical Infrastructure	Difficulty with standardisation	IEEE International Conference on Digital Ecosystems and Technologies
6	(Herdon, Péntek and Várallyai, 2011)	Digital business ecosystem prototyping for agri-food SMEs	SME	DL	Framework Development	Service & Technical Infrastructure	Dynamic environment	CEUR Workshop Proceedings
7	(Herdon, Várallyai and Péntek, 2012)	Digital business ecosystem prototyping for SMEs	SME	DL	Framework Development	Service & Technical Infrastructure	Dynamic environment	Journal of Systems and Information Technology
8	(Jansson and Karvonen, 2014)	Using CNOs in international marketing and outbound logistics	SME	DL	Framework Review	Governance and Policy	Difficulty with standardisation	Cogent Engineering
9	(Khalil <i>et al.</i> , 2011)	A hybrid framework of digital business ecosystem for Malaysian Small and Medium Enterprises (SMEs)	BE	DL	Framework Review	Service & Technical Infrastructure	Difficulty with IT adoption	ICCAIE 2011 - 2011 IEEE Conference on Computer Applications and Industrial Electronics
10	(Khalil <i>et al.</i> , 2012)	Perceived usefulness elevating responsiveness of SME Employees in Digital Business Ecosystem environment	BE	DL	Framework Review	Service & Technical Infrastructure	Lack of resources	2012 International Conference on Computer and Information Science, ICCIS 2012 - A Conference of World Engineering, Science and Technology Congress, ESTCON 2012 - Conference Proceedings

11	(Koren, Simunic and Prasad, 2017)	Energy-Efficient and Improved eWALL: e2WALL	BE	DL	Framework Development	Human capital, knowledge and practices	Lack of resources	Wireless Personal Communications
12	(Korpela <i>et al.</i> , 2016)	Digital business ecosystem transformation - Towards cloud integration	BE	HL	Framework Development	0	Establishing trust relationships	Proceedings of the Annual Hawaii International Conference on System Sciences
13	(Kurz and Heistracher, 2007)	Simulation of a self-optimising Digital Ecosystem	BE	DL	Framework Review	Service & Technical Infrastructure	Lack of resources	Proceedings of the 2007 Inaugural IEEE-IES Digital EcoSystems and Technologies Conference, DEST 2007
14	(Leong <i>et al.</i> , 2007)	Agent mediated peer-to-peer mobile service-oriented architecture	SME	DL	Framework Development	Service & Technical Infrastructure	Establishing trust relationships	Proceedings of the 2007 Inaugural IEEE-IES Digital EcoSystems and Technologies Conference, DEST 2007
15	(Ndou <i>et al.</i> , 2010)	Toward an open network business approach	BE	HL	Theoretical	Human capital, knowledge and practices	Dynamic environment	World Academy of Science, Engineering and Technology
16	(Pappas <i>et al.</i> , 2007)	A knowledge management platform for supporting digital business ecosystems based on P2P and SOA technologies	BE	DL	Framework Development	Governance and Policy	Establishing trust relationships	Proceedings of the 2007 Inaugural IEEE-IES Digital EcoSystems and Technologies Conference, DEST 2007
17	(Phaithoonbuathong <i>et al.</i> , 2008)	Adding factory floor automation to digital ecosystems; tools technology and transformation	SME	DL	Framework Development	Human capital, knowledge and practices	Complex and expensive internal processes	2008 2nd IEEE International Conference on Digital Ecosystems and Technologies, IEEE-DEST 2008
18	(Salam, Steenkamp and Khoury, 2008)	The evolution of small and medium enterprise in Digital Business Ecosystem: Accelerating The evolution and the need for Web 2.0 and visualization	BE	DL	Framework Development	Service & Technical Infrastructure	Establishing trust relationships	2008 3rd International Conference on Information and Communication Technologies: From Theory to Applications, ICTTA
19	(Sarkar, Prabhakar and Chatterjee, 2007)	Towards digital ecosystems for skill based industrial clusters: Lessons from the 'digital mandi' project	BE	HL	Theoretical	Human capital, knowledge and practices	Lack of resources	Proceedings of the 2007 Inaugural IEEE-IES Digital EcoSystems and Technologies Conference, DEST 2007
20	(Tsatsou <i>et al.</i> , 2007)	Developing a knowledge base of regulatory issues in the use of FS/OS software: The experience of the European SME sector	Relationship	HL	Theoretical	Governance and Policy	Establishing trust relationships	Proceedings of the 2007 Inaugural IEEE-IES Digital EcoSystems and Technologies Conference, DEST 2007
21	(Wang and De Wilde, 2008)	A model for digital business ecosystem and topological analysis	BE	DL	Framework Development	Service & Technical Infrastructure	Difficulty with IT adoption	Proceedings - 2008 IEEE International Conference on Services Computing, SCC 2008
22	(Weiss and Minshall, 2014)	Negative Effects of Relative Proximity and Absolute Geography on Open Innovation Practices in High-tech SMEs in the UK	SME	HL	Framework Review	Business & Financial conditions	Lack of resources	ICMIT 2014 - 2014 IEEE International Conference on Management of Innovation and Technology

Appendix C – Case studies

Table C.1: Case studies

Case study	Website	Categorisation
AdWords	adwords.google.com/home/	Data collection ecosystem
Airbnb	www.airbnb.com	Matching ecosystem
Alibaba	www.alibaba.com	Matching ecosystem
American Express	www.americanexpress.com	Data collection ecosystem
Belk	www.belk.com	Data collection ecosystem
Coco-Cola	www.coca-cola.com/global/	Sequenced ecosystem
Discovery	www.discovery.co.za/portal/	Integration ecosystem
General Motors	www.gm.com	Data collection ecosystem
GoFundMe	www.gofundme.com	Collection ecosystem
Google	www.google.com	Data collection ecosystem
Innocentive	www.innocentive.com	Collection ecosystem
Kaggle	www.kaggle.com	Collection ecosystem
Kickstarter	www.kickstarter.com	Collection ecosystem
LEGO	ideas.lego.com/dashboard	Collection ecosystem
Linux	www.linux.org	Collection ecosystem
Mitsubishi Electric	www.mitsubishielectric.com	Sequenced ecosystem
NGK Spark Plug Co.	www.ngksparkplug.com	Sequenced ecosystem
Sabco	www.cocacolasabco.com	Sequenced ecosystem
SABMiller	www.sab.co.za/	Sequenced ecosystem
Taobao	world.taobao.com	Matching ecosystem
Toyota	www.toyota-global.com/	Sequenced ecosystem
TutorVista	www.tutorvista.com	Matching ecosystem
Uber	www.uber.com	Matching ecosystem
Wikipedia	en.wikipedia.org/wiki/Main_Page	Collection ecosystem
Virgin Active	www.virginactive.com	Sequenced ecosystem
Woolworths	www.woolworths.co.za/	Sequenced ecosystem

Appendix D – RCF capability descriptions

RL/SO1 - Establishing shared relationship vision and goals: To explicitly define a vision or set goals for the relationship, which is aligned with the vision and goals for both of the firms in the partnership.

RL/SO3 - Create and sustain unique value offering: Value offered to the partner must be unique to a certain extent. Uniqueness can either refer to the type of value offered, or to the type of relationship in terms of trust in capability, goodwill etc.

RL/SO5 - Developing partnering strategy: To explicitly define a strategy that determines which business activities will be performed externally (outsource, partnerships etc.), in order to reach the organisational goals.

RL/OM1 - Interpret and contextualise partner diversity: Understand the differences in culture, management style and organisational structure of the partner, and understand what these differences mean for the partnership agreement.

RL/OM3 - Allocate internal resources to relationship: If resources are allocated to a specific relationship, it must be done in a manner to simultaneously maximise the benefit for other relationships, relationship activities and internal business activities.

RL/OM5 – Reputation: To establish and maintain a reputation that will appeal to potential partners. To create a visibility of your presence and reputation amongst potential partners.

RL/FP1 - Identify mutual opportunities: Continuously communicating emerging opportunities that will be beneficial to both partners. Communicating and agreeing if adjustments need to be made to the partnership expectations.

RL/FP3 - Relation specific adaptations: Adaptations are made to internal processes or activities in order to better suit the needs of a partner. Adaptations are prioritised according to the related risks and expected rewards.

RL/FP5 - Attract complementary partners: To position firm in order to enhance attractiveness to potential identified partners.

KI/SO1 - Managing internal tacit knowledge: Transferring knowledge between individuals within the firm (e.g. teaching, mentoring etc.)

KI/FP1 - Internal communication & information flow: Communication channels between within the firm are open

RL/SO2 - Understand partner requirements: Understand the business of the partnering firm. Understand their product and their processes, and interpret how own value offering can enhance or contribute to their value offering for their clients.

RL/SO4 - Leverage external resources: The resources (assets, infrastructure, technology, information, markets, etc.) of a partner is utilised to achieve or enhance relationship goals or internal organisational goals.

RL/SO6 - Establishing contracting policy: Establishing contracts with partnering firms that sufficiently protects the interests of both parties, while maintaining the required level of flexibility.

RL/OM2 - Managing tacit knowledge between partners: Transferring partner-specific knowledge between individuals in partnering firms (e.g. teaching, mentoring etc.)

RL/OM4 - Market Knowledge: To be consistently aware of external market, including market structures, potential partners, clients and competition, technological advances in the industry and possible market disruptors.

RL/OM6 - Boundary spanner: The individual within the firm who is designated to interact with the partnering firm has extensive knowledge and understanding of the context of the partnering firm.

RL/FP2 - Bi-lateral knowledge development: Jointly solving problems, identifying ideas or innovating by combining the knowledge of individuals in partnering firms.

RL/FP4 - Identify complementary partners: To scan and explore environment in order to identify partners in accordance with partnering strategy.

RL/FP6 - Communication & the flow of information between partners: Communication channels between partnering firms are open and transparent. Information is readily available and is exchanged frequently.

KI/SO2 - Data exploitation strategy: To determine how accumulated data can be exploited in order to reach organisational and relationship goals, to improve firm performance and to assist in decision making.

KI/FP2 - Data security architectures: To implement and constantly review advanced security measures to ensure the

and transparent without extensive hierarchies that restricts information flow. Information is readily available and is exchanged frequently between individuals.

KI/FP3 - Capturing, storing & retrieving data: To implement sophisticated methods and techniques to capture, store and retrieve the data that accumulates through business activities or through partnerships. The necessary infrastructure should be available to the firm.

KI/OM1 - Managing intellectual property: To sufficiently protect intellectual property, while still being able to share it with partners in order to collaborate or innovate.

OS/SO1 - Organisational vision and goals: To establish organisational vision and goals that will create long term differentiation. The goals are determined from a holistic view of latent opportunities and future scenarios, including future markets and the revitalisation of old markets.

OS/SO3 - Investment in relationships: The return on investments provides sufficient slack for activities to deviate when required.

OS/OM2 - Managing relationship portfolios: To balance the relationship portfolio to align with strategic objectives. The impact of potential and existing relationships are managed by considering current opportunities and future scenarios.

OS/OM4 - Relationship risk assessment: To measure and monitor the critical business, technical, financial and environmental risk factors of a relationship. To understand the implications of risk related to a relationship.

OS/FP2 - Product / Process experimentation: The firm can conduct several experimentation activities with products or processes without largely disrupting the existing structures and the functioning of the firm.

required level of security, as well as to meet the partner's security standards.

KI/FP4 - Data analysis: To use advanced and sophisticated data analytics techniques that will capture the maximum amount of value from available data. Where possible, processes should be standardised and automated.

KI/OM2 - Data & information externalisation: The documentation of information is done consistently and professionally. Attention is given to the presentation of information, particularly when it is shared with partners.

OS/SO2 - Adaptable and flexible organisational structure: The organisation is able to adapt comfortably and respond timely to changing business environments and emerging opportunities or disruptions.

OS/OM1 - Establish trustworthiness through behaviour: The management of the firm consciously exhibits trustworthiness behaviour (such as attitude, consistency, availability, respectfulness etc.) to encourage trustworthiness throughout the firm as well as in partnerships.

OS/OM3 - Interdisciplinary knowledge: Employees have a strong holistic understanding of organisation. Processes to continuously educate employees cross-disciplinary have been institutionalised.

OS/FP1 - Individual reflective capacity: Employees are granted an appropriate freedom and authority to take responsibility and make decisions. Change and mistakes are learning opportunities.

OS/FP3 - Measuring relationship performance: To determine how a relationship is performing in order to meet the goals and objectives of the relationship. To be able to determine in which aspects the relationship must improve in order to improve its performance.

Figure D.1: Relational capability descriptions (pre-refinement)

Appendix E – RCMM Questionnaire

Table E.1: RCMM Questionnaire

Code	Description	Question	Maturity Level 1	Maturity Level 3	Maturity Level 5
RL/SO1	Establishing shared relationship vision and goals	How is agreement on shared vision and goals reached?	Vision and goals of relationships are not explicitly defined. Agreement is only implied.	Vision and goals of individual parties communicated explicitly and some level of agreement reached.	Agreement on vision and goals reached through an iterative, joint goal setting process and clear communication of goals.
RL/OM1	Interpret and contextualise partner diversity	How is partner diversity interpreted?	Little to no attention is given to partner diversity.	The differences in organisational culture and logic are acknowledged.	The implications of diversity on the relationship expectations are assessed and understood, both implicitly and explicitly.
RL/FP1	Identify mutual opportunities	How does opportunities within relationships surface?	Opportunities are seldom brought forward or discussed between partners.	Individuals are encouraged to bring ideas forward. Guidelines on how to exchange and substantiate ideas between partners have been defined and deployed.	Identifying opportunities and exchanging them in the relationship is natural behaviour. Procedures to manage and substantiate ideas are institutional. Relationships are constantly re-evaluated to search for new opportunities.
RL/SO2	Understand partner requirements	What is done to understand partner requirements?	Knowledge of partner requirements are based on initial conversations or past experience.	Informal meetings and inter-firm visits are arranged to expose partners to internal business conditions.	Active inter-firm training, workshops and seminars where both parties are present and work in teams. Key personnel have personal experience, or they are transferred to gain insight.
RL/OM2	Managing tacit knowledge	How is tacit knowledge shared between partners?	Little effort is made to transfer knowledge between partners.	Both parties are willing to share tacit knowledge. Teaching and mentorship occurs informally between individuals.	Individuals in the partnership readily teach and mentor each other.
RL/FP2	Bi-lateral knowledge creation	How is knowledge created between partners?	Knowledge is created mostly unilaterally by each of the parties.	Joint knowledge creation processes have been defined and deployed.	Joint knowledge creation processes are performed at a specific time and in a mutual or shared space (physical/virtual). Processes are institutionalised.
RL/SO3	Create and sustain unique value offering	How is uniqueness created and sustained in value offering?	Little to no conscious effort is made to create or sustain uniqueness in the value offering.	Vision and goals of relationships are re-evaluated in response to changing conditions in environment that may impact uniqueness.	Competitive environment is constantly monitored. Processes to assess the impact of significant external conditions are institutionalised. Initiatives to re-evaluate vision and goals of relationships are continuously performed.
RL/SO4	Leverage external resources	Are external resources leveraged?	Leveraging of external resources are done on an ad hoc basis.	Leveraging of resources is based on need and availability. The sharing of resources have been agreed upon by both parties. Practices to leverage resources have been defined and deployed.	Partners with complementary resources have been aligned with organisational objectives. The sharing of resources is based on trust and mutual cooperation. Practices have been institutionalised.
RL/OM3	Allocate internal resources to relationship	Are resources appropriately allocated to relationships?	Resources are assigned on an ad hoc basis.	Resources are allocated to relationship based on prioritisation.	Resources are pooled through the alignment and integration of relationship activities.
RL/FP3	Relation specific adaptations	When are relationship specific adaptations made?	Adaptations are done in response to changing relationship requirements or when resources are available.	Adaptations are prioritised through relationship objectives. Processes to evaluate risk, resource availability and relationship opportunity have been defined and deployed.	Formal and informal adaptations occur through aligning relationship and organisational objectives. Institutionalised processes to evaluate and risk, available resources and relationship opportunity.

RL/OS5	Developing partnering strategy	Has a partnering strategy been established and communicated?	Partnering strategy and objectives are not explicit.	Partnering strategy and objectives are developed to support business objectives and clearly communicated. Aligning relationship objectives with partnering and business objectives is standard practice.	Strategy and objectives are developed from a holistic view of latent opportunities, future scenarios and business objectives. Strategy and objectives are regularly communicated and owned by individuals.
RL/OM4	Market Knowledge	What is done to obtain knowledge of external market? (Market structure, dynamism, competition, competitive position)	Market knowledge is based on past experience.	Initiatives to probe market are periodically undertaken. Procedures have been developed and implemented.	Initiatives to probe market are regular and results are effectively utilised for planned and existing relationship strategy development. Procedures are institutional.
RL/OM5	Reputation & External visibility	What is done to control and enhance reputation and external visibility?	External visibility consists of static, one-way information sharing platform including basic business attributes. Physical networking opportunities are not utilised.	Organisational goals and objectives are regularly translated and shared on an externally visible platform (such as website). Two-way communication enabled and actively responded to. Network opportunities are pursued.	Processes to maintain and update external visibility are institutionalised. Successful relationships are captured and shared externally. Responding to interaction via website receives priority attention. Environment is constantly screened for networking opportunities such as seminars, conferences and mixers.
RL/FP4	Identify potential partners	How are potential partners identified?	Potential partners are identified on an ad hoc basis.	Initiatives to identify partners who align with organisational goals are undertaken. Procedures have been developed and implemented.	Future-oriented scanning and exploring activities are used to identify partners who align with organisational goals and objectives. Procedures to identify partners are institutional.
RL/FP5	Attract potential partners	What is done to attract potential partners?	Processes to attract potential partners are ad hoc.	Procedures to position firm to enhance attractiveness have been defined and deployed.	Strategic marketing initiatives are targeted to specified firms. Procedures to position firm to enhance attractiveness are institutional.
RL/SO6	Establishing contracting policy	What is the policy regarding contracting?	There is no policy to guide the contracting process in order to reach favourable agreements.	Policy prescribes appropriate guidelines by which contracts can be constructed to ensure flexibility in negotiation while reaching a favourable outcome.	Policy facilitates flexible negotiation while protecting interests of all parties involved.
RL/OM6	Organisational interface	What is the state of the organisational interface?	Organisational interface consists of a single boundary spanner, who is chosen based on initial perception of suitability for the role.	Boundary spanner obtains knowledge from partner's context through defined processes.	Organisational interface consist of dedicated boundary spanners. Boundary spanner has deep knowledge and understanding of partner's context. Processes to facilitate interaction has been institutionalised.
RL/FP6	Communication & the flow of information between partners	What is the state of communication between partners?	Communication is poor and flow of information is limited. Limited feedback given or received.	Communication is adequate. Mechanisms and tools to facilitate the flow of information have been identified and implemented.	Communication is regular, transparent and open.
KI/SO1	Managing internal tacit knowledge	How is internal tacit knowledge managed?	Little effort is made to exchange knowledge between individuals within the firm.	Teaching and mentorship programs have been established. Identifying, documenting and implementing best practices is standard procedure.	Individuals readily teach and mentor each other. Best-practice management and improvement is institutional.
KI/OM1	Managing intellectual property	How is intellectual property managed?	IP is not protected or it is heavily protected with strict regulation limiting accessibility and exposure.	Procedures and techniques for protecting IP and managing infringement are understood and employed.	Procedures and techniques that balance protection and sharing, while minimising resource consumption is institutional.
KI/FP1	Internal communication & information flow	What is the state of communication within the firm?	Communication barriers within individuals exist. Communication is poor and flow of information is limited. Limited feedback given or received.	Communication is adequate. Mechanisms and tools to facilitate the flow of information have been identified and implemented.	Communication is regular, transparent and open.
KI/SO2	Data exploitation strategy	How does the strategy to exploit data support relationship objectives?	Strategy and objectives have not been explicitly defined.	Strategy and objectives to exploit data have been developed to support organisational and relational goals.	Strategy provides clear objectives are is continuously developed and reviewed to align with business and relational goals.

KI/OM2	Data & information externalisation	How is data and information externalised? (Documentation, presentation etc.)	Externalisation guidelines have not been developed. Documentation and presentations are done ad hoc.	Standard procedures for externalisation of information have been developed and deployed. All externalised information is consistent and at a sufficient professional level.	Procedures for information externalisation have been institutionalised.
KI/FP2	Data security architectures	How is data secured?	Little to no security measures are in place to prevent unauthorised use or misuse of data.	Adequate security architectures have been implemented.	Advanced security measures are in place. Security levels are constantly reviewed to meet partner's security standards.
KI/FP3	Capturing, storing & retrieving data	How is data captured, stored and retrieved?	Information is stored in an unstructured database. Search and retrieval is predominantly manual.	Procedures and frameworks for contextualising, categorising and capturing data have been defined and deployed. Relevant tools and mechanisms have been identified and implemented.	Procedures and frameworks for data handling are institutionalised. Data capturing, storage and retrieval are largely automated.
KI/FP4	Data analysis	How is data analysed?	Basic, manual data analysis processes are used. Entry-level software such as Excel.	Proactive and reactive data analysis processes are performed on sophisticated, specified software. Best practices have been defined and deployed.	Data analysis is seen as a core capability. Sophisticated and advanced analysis techniques and tools are used and is largely automated. Data analysis processes have been institutionalised.
OS/SO1	Organisational vision and goals	Has organisational vision and goals been established and communicated?	Vision and goals are not explicitly defined, or static vision and goals have been defined without considering dynamic external environment.	Organisational vision and goals are developed to take advantage of possible opportunities in new and existing markets. Vision and goals are explicitly defined and communicated to all individuals.	Organisational vision and goals are developed to create long term differentiation. The goals are determined from a holistic view of latent opportunities and future scenarios, including future markets and the revitalisation of old markets. Vision and goals are effectively communicated, and owned by all individuals.
OS/OM1	Establish trustworthiness through behaviour	Does management behaviour reflect trustworthiness?	Little to no conscious effort made to trustworthy behaviour.	Trustworthiness is explicitly reflected through conscious behavioural decisions and actions. Trustworthiness as behaviour have been communicated and translated to all individuals.	Manager consciously and consistently executes trustworthy behaviour. Strong awareness of which actions reflects trustworthiness. A culture of trustworthiness have been deployed throughout organisation and inherited by all individuals.
OS/OM2	Managing relationship portfolios	Are the effects of different relationships understood and balanced?	The effects of creating a partnership is seldom understood.	Considering and balancing the potential impact of a partnership is a standard procedure.	The potential impact of relationship opportunities and future scenarios is considered with a combination of potential and existing relationships. The relationship portfolio is balanced to align with strategic objectives.
OS/FP1	Individual reflective capacity	What is the state of employee individual reflective capacity?	Authority channels prevents employees from taking risk-bearing decisions. Employees performs tasks without any responsibility or accountability.	Individuals are encouraged to communicate and bring ideas forward. Each individual has an appropriate capacity to accept risk and autonomously make decisions. Time is allocated for learning.	People and relationships are considered fundamental to organisation. Appropriate freedom fosters continuous learning, improvement and autonomy. Change and mistakes are seen as opportunities to learn.
OS/OS2	Adaptable and flexible organisational structure	How is flexibility and adaptability established in the organisational structure?	Structure and layout lacks flexibility to adapt to changing business requirements. Authorisation channels and processes are complex.	Functional structures are designed to be as flexible as possible as possible to meet changing business requirements.	Functional structures are modular and adaptable in nature. Installation and layout of infrastructure is flexible and adaptable.
OS/OM3	Interdisciplinary knowledge	How is interdisciplinary knowledge and skills cultivated amongst employees?	Interdisciplinary knowledge and skills are not explicitly addressed. Employees have narrow and specified tasks.	Processes to expose and teach employees cross-disciplinary have been defined and deployed. Employees are encouraged to learn all aspects of the organisation.	Employees are formally and informally train and exposed to all disciplines within the organisation. Employees have a strong holistic understanding of organisation. Processes to continuously educate employees cross-disciplinary have been institutionalised.

OS/FP2	Product / Process experimentation	What is the state of experimentation processes?	Experimentation of products and processes are ad hoc.	Processes for experimentation have been defined and deployed. Experimentation can be conducted in isolation without impacting organisational structure or partnerships.	Conditions for experimentation have been clearly defined to ensure flexibility and responsiveness, while minimising risk. Implementation happens incrementally to reduce impact on organisation and partnerships. Metrics for experimentation success are clearly defined and utilised. Experimentation processes are institutionalised.
OS/SO3	Investment in relationships	How does capital investment support relationships?	Investment in relationships is limited and the required return structures restrict relationship specific activities.	Direct investment in relationships is consistent, ensuring that business and relationship objectives are achievable.	Investment quantity, structures and required return provides sufficient slack for activities to deviate when required.
OS/OM4	Relationship risk assessment	How is risk assessed?	Relationship risk assessment is ad hoc with limited definition of critical risk metrics and associated implications.	Critical risk metrics and implications have been determined. Risk is consistently monitored and managed. Risk management processes have been defined and implemented.	Critical business, technical, financial and environmental risk metrics have been identified. Implications of risk factors are understood and measurable. Monitoring and risk management processes are continuously performed. Processes are institutionalised.
OS/FP3	Measuring relationship performance	How are relationships measured and monitored?	Relationship measurement is ad hoc with limited definition of metrics and associated inputs.	Relationship metrics have been identified, defined and implemented. Targets are aligned with relationship objectives. Metrics are monitored to identify process and management improvements.	The impact of utilised metrics on relationship performance is determined. Metrics and targets are continuously refined. Monitoring and improvement processes and management practices are continuous.

Appendix F – Framework ranking questionnaire

Confidentiality Agreement

Dear Participant

Thank you for your willingness to participate in in this study as part of my research towards my Master's degree in Industrial Engineering. This survey gathers information on the ability of small and medium sized enterprises (SMEs) to establish and sustain successful partnerships.

None of the information gathered in this study will be linked to you personally. By completing this questionnaire you are acknowledging that you have read this, and are thereby consenting that we may use your information anonymously. No question is mandatory, and you are free to abandon the questionnaire at any time should you feel uncomfortable with the questions.

Please note that this research is conducted in accordance with Stellenbosch University's Framework Policy for the Assurance and Promotion of Ethically Accountable Research. The researcher will gladly answer any queries you may have regarding this aspect of the study.

It will take approximately ten minutes to complete this questionnaire. If you have any additional questions or concerns, please contact me via email (17588642@sun.ac.za) or my private cell phone number (+27844302563).

I sincerely appreciate your participation and contribution to this research.

Kind regards,

Lead researcher: **Caro Els**

Supervisors: **Prof SS Grobbelaar** and **Dr D Kennon**

Department of Industrial Engineering
Stellenbosch University

Figure F.1: Framework Ranking Confidentiality agreement

Project Background

The importance of small and medium sized enterprises (SMEs) for the modern economy and their contribution to economic development is widely recognised. SMEs have the potential to alleviate critical issues such as poverty, inequality and unemployment. Regardless of their importance however, SMEs face several challenges that result in extremely high failure rates. This phenomenon has stimulated a great effort to support SMEs and increase their survivability, especially from a research point of view. The topic of SME support is only becoming more critical and more relevant in the face of the fast pace of technological development.

Digitisation, connectivity, and new modes of collaboration are quickly and dramatically reshaping important core structures of the industrial economy. The term 'business ecosystem' has been used to understand and describe the increasingly dynamic and interconnected business landscape. In the natural world, ecosystems refer to a localised community of living organisms interacting with each other and their environment. These organisms influence each other and their terrain. They compete and collaborate, share and create resources and they coevolve. They are inevitably subject to external disruptions, to which they adapt together.

With a strong emphasis on collaboration and coevolution, it is becoming clear that the potential of business ecosystems lie largely in the relationships between firms. Even more so in the relationships between small and large firms. With numerous complementary capabilities, partnerships between small and large firms are increasingly shaping new and exciting possibilities to create value. On the other hand however, relationships between small and large firms have never been a simple issue. Now, as these relationships are increasingly dynamic and interdependent, it is only becoming more complex. SMEs often have less bargaining power and consequently become dependent on their larger partners' processes. As a result, they are faced with renewed challenges associated with the resources and expertise needed to cope with a digital and interactive environment.

The strategic benefits for both large and small firms to enter into collaborative, symbiotic partnerships are becoming more widely recognised. If SMEs are however, not equipped to facilitate dynamic and complex relationships with larger businesses, ecosystems will only become another market space dominated by large firms where SMEs are unable to operate.

Proposed solution

In order to alleviate the challenges that SMEs face with regards to establishing and sustaining B2B relationships, this research aims to identify the aspects of an organisation that will influence the relational capabilities of a firm.

It is expected that if a firm is able to improve these parts of the organisation, it will be able to increase its ability to establish and sustain relationships with other firms.

Figure F.2: Framework ranking additional information

Demographics	
Please answer the following questions with regards to your firm	
Question	Answer
* Under which industry is your firm classified (according to the Standard Industrial Classification)?	<input style="width: 100%; height: 20px;" type="text"/>
If other, please specify	<input style="width: 100%; height: 20px;" type="text"/>
* What is your official position within the firm?	<input style="width: 100%; height: 20px;" type="text"/>
* How many people are employed at your firm?	<input style="width: 100%; height: 20px;" type="text"/>
* In what year was your firm founded?	<input style="width: 100%; height: 20px;" type="text"/>
* Does your firm have any existing partnerships with other firms, past partnerships or anticipated future partnerships? (y/n)	<input style="width: 100%; height: 20px;" type="text"/>

Figure F.3: Framework ranking demographics

The following presents a list of 36 capabilities that have been identified from literature. These capabilities are believed to influence the ability of a firm to establish or sustain partnerships in one way or another. In order to practically validate these capabilities, please rate how you perceive each of the capabilities according to the following dimensions:

- **Applicability:** Is the capability relevant to partnerships? Is the capability (to any extent) being used or implemented within your firm?
- **Impact:** Do you believe that, if the capability is implemented to its full extent, it will have an impact on the success of a firm's partnerships?
- **Difficulty:** Please describe the level of difficulty or complexity that you believe is involved with implementing (or improving) the capability?
- **Effort:** Please describe the amount of effort (with regards to time, resources etc.) that you believe it will require to implement (or improve) the capability?

Relationship Lifecycle

These capabilities refer to the practices, procedures, and activities etc. that are directly involved with the various stages of the relationship lifecycle.

	Applicable	Impact	Difficulty	Effort
1 Establishing shared relationship vision and goals: To explicitly define a vision or set goals for the relationship, which is aligned with the vision and goals for both of the firms in the partnership.				
2 Interpret and contextualise partner diversity: Understand the differences in culture, management style and organisational structure of the partner, and understand what these differences mean for the partnership agreement.				
3 Identify mutual opportunities: Continuously communicating emerging opportunities that will be beneficial to both partners. Communicating and agreeing if adjustments need to be made to the partnership expectations.				
4 Understand partner requirements: Understand the business of the partnering firm. Understand their product and their processes, and interpret how own value offering can enhance or contribute to their value offering for their clients.				
5 Managing external tacit knowledge: Transferring partner-specific knowledge between individuals in partnering firms (e.g. teaching, mentoring etc.)				
6 Bi-lateral knowledge creation: Jointly solving problems, identifying ideas or innovating by combining the knowledge of individuals in partnering firms.				
7 Create and sustain unique value offering: Value offered to the partner must be unique to a certain extent. Uniqueness can refer to both the type of value offered, and to the type of relationship in terms of trust in capability, goodwill etc.				
8 Leverage external resources: The resources (assets, infrastructure, technology, information, markets, etc.) of a partner is utilised to achieve or enhance relationship goals or internal organisational goals.				
9 Allocate internal resources to relationship: If resources are allocated to a specific relationship, it must be done in a manner to simultaneously maximise the benefit for other relationships, relationship activities and internal business activities.				
10 Relation specific adaptations: Adaptations are made to internal processes or activities in order to better suit the needs of a partner. Adaptations are prioritised according to the related risks and expected rewards.				
11 Developing partnering strategy: To explicitly define a strategy that determines which business activities will be performed externally (outsource, partnerships etc.), in order to reach the organisational goals.				

12	Market Knowledge: To be consistently aware of and understand the impact of the external market, including market structures, potential partners, clients and competition, technological advances in the industry and possible market disrupters.				
13	Reputation & External visibility: To establish and maintain a reputation that will appeal to potential partners. To create a visibility of your presence and reputation amongst potential partners.				
14	Identify potential partners: To scan and explore environment in order to identify potential partners in accordance with partnering strategy.				
15	Attract potential partners: To position firm in order to enhance attractiveness to potential identified partners.				
16	Establishing contracting policy: Establishing contracts with partnering firms that sufficiently protects the interests of both parties, while maintaining the required level of flexibility.				
17	Boundary spanner: The individual within the firm who is designated to interact with the partnering firm has extensive knowledge and understanding of the context of the partnering firm.				
18	Communication & the flow of information between partners: Communication channels between partnering firms are open and transparent. Information is readily available and is exchanged frequently.				
Knowledge and Information					
These capabilities refer to the management of knowledge and information that either exists within the firm or that is acquired from the activities of the relationship.					
		Applicable	Impact	Difficulty	Effort
19	Managing internal tacit knowledge: Transferring knowledge between individuals within the firm (e.g. teaching, mentoring etc.)				
20	Managing intellectual property: To sufficiently protect intellectual property, while still being able to share it with partners in order to collaborate or innovate.				
21	Internal communication & information flow: Communication channels between within the firm are open and transparent without extensive hierarchies that restricts information flow. Information is readily available and is exchanged frequently between individuals.				
22	Data exploitation strategy: To determine a strategy for how accumulated data can be exploited in order to reach organisational and relationship goals, to improve firm performance and to assist in decision making.				
23	Data & information externalisation: The documentation of information is done consistently and professionally. Attention is given to the presentation of information, particularly when it is shared with partners.				
24	Data security architectures: To implement and constantly review advanced security measures for data protection. Partner's security standards are met.				
25	Capturing, storing & retrieving data: To implement sophisticated methods and techniques to capture, store and retrieve the data that accumulates through business activities or through partnerships. The necessary infrastructure is available to the firm.				
26	Data analysis: To use advanced and sophisticated data analytics techniques that will capture the maximum amount of value from available data. Where possible, processes should be standardised and automated.				
Organisational structure					
These capabilities involve the structures, resources, measures, infrastructure, strategy and policies, leadership, etc. necessary to support the process, and knowledge and competency requirements for the relationships					
		Applicable	Impact	Difficulty	Effort
27	Organisational vision and goals: To establish organisational vision and goals that will create long term differentiation. The goals are determined from a holistic view of latent opportunities and future scenarios, including future markets and the revitalisation of old markets.				
28	Establish trustworthiness through behaviour: The management of the firm consciously exhibits trustworthiness behaviour (such as attitude, consistency, availability, respectfulness etc.) to encourage trustworthiness throughout the firm as well as in partnerships.				
29	Managing relationship portfolios: To balance the relationship portfolio to align with strategic objectives. The impact of potential and existing relationships are managed by considering current opportunities and future scenarios.				
30	Individual reflective capacity: Employees are granted an appropriate freedom and authority to take responsibility and make decisions. Change and mistakes are learning opportunities.				
31	Adaptable and flexible organisational structure: The organisation is able to adapt comfortably and respond timely to changing business environments and emerging opportunities or disruptions.				
32	Interdisciplinary knowledge: Employees have a strong holistic understanding of the organisation. Employees are educated cross-disciplinary.				
33	Product / Process experimentation: The firm can conduct several experimentation activities with products or processes without largely disrupting the existing structures and the functioning of the firm.				
34	Investment in relationships: The return on investments in a partnership provides sufficient slack for activities to deviate when required.				
35	Relationship risk assessment: To measure and monitor the critical business, technical, financial and environmental risk factors of a relationship. To understand the implications of risk related to a relationship.				
36	Measuring relationship performance: To determine how a relationship is performing in order to meet the goals and objectives of the relationship. To be able to determine in which aspects the relationship must improve in order to improve its performance.				

Figure F.4: Framework ranking questionnaire

Appendix G - Framework ranking results

Table G.1: Additional considerations for RCF capabilities

Capability	Considerations
Establishing shared relationship vision and goals	<ul style="list-style-type: none"> • A partnership should not be established to start with if there is not a strong shared vision. • A large firm will not easily align their vision and goals with that of the SME.
Interpret and contextualise partner diversity	<ul style="list-style-type: none"> • If there are too many and large differences, it can lead to unnecessary misunderstandings which will delay relationship growth. • The internal structure of the firms do not necessarily overlap, however understanding, for example, a partner's sales process does help.
Identify mutual opportunities	<ul style="list-style-type: none"> • Emerging opportunities come at a price. Resources need to be allocated to pursue opportunities and it can dilute the focus of the company, but if executed well, it will lead to a very positive outcome.
Understand partner requirements	<ul style="list-style-type: none"> • It takes time to understand the business, product and processes of a new partner.
Relation specific adaptations	<ul style="list-style-type: none"> • Processes are integrated with those of the partners to tailor a product to better suit the needs of clients from a specific vendor or region.
Market Knowledge	<ul style="list-style-type: none"> • Knowing the market comes with experience and getting a good idea of the market takes a lot of time and effort
Reputation & External visibility	<ul style="list-style-type: none"> • Reputation takes a lot of time requires consistent positive consumer and customer experience. • A firm needs to hold themselves to a certain standard when conducting any business with partners or clients. • Reputation carries weight particularly when it comes to establishing partnerships with larger (international) firms.
Identify potential partners	<ul style="list-style-type: none"> • When operating in a specific industry, the important players are easy to identify.
Establishing contracting policy	<ul style="list-style-type: none"> • Finalising the terms of partnerships can be extremely taxing, but without it the entire partnership collapses.
Boundary spanner	<ul style="list-style-type: none"> • In smaller firms, more than one individual often interact with the partner.
Communication & the flow of information between partners	<ul style="list-style-type: none"> • One of the biggest challenges in a partnership is keeping up to date with the most recent developments on either side.

Capability	Considerations
Managing internal tacit knowledge	<ul style="list-style-type: none"> Knowledge transfer is key to ensure that everyone understands the core of the problem that must be solved.
Managing intellectual property	<ul style="list-style-type: none"> There should be sufficient trust that the IP will be protected, if this respect falls away, then a lot of other problems will also arise. While both sides freely share what they solve, how they go about solving it and what they can offer, the IP behind it all is never shared to protect the interest of the firm.
Data security architectures	<ul style="list-style-type: none"> Only relevant information is shared, partners should not see it as a way of withholding info.
Individual reflective capacity	<ul style="list-style-type: none"> Most of the employees in smaller firms receive a lot of responsibility. Employees perceive the success of the firm to be in their personal interest. Within a 'flat' hierarchy, once a task is assigned to an individual it is entirely their responsibility – they should however be welcome to discuss any problems or challenges with any other members of staff. It is however related and limited to the job description and role of the individual. Some individuals, such as managers, needs freedom while administrative people are not allowed to have the same freedom and authority since it will create unnecessary inconsistencies.
Adaptable and flexible organisational structure	<ul style="list-style-type: none"> In order to keep up and be on the cutting edge, a firm has to be highly adaptable and open to change. The more hierarchies and fixed structures there are in an organisation, the harder it will be to sustain flexible structures. While the firm is able to pivot their roadmap to address more pressing issues, it is not viable to pivot to such an extent that they suddenly cater to an entirely new market or solve an entirely new.
Investment in relationships	<ul style="list-style-type: none"> Resources can be shifted to focus to more quickly address problems that partners or clients are experiencing

Appendix H – Interview presentation

The ability of **SMEs** to establish and sustain successful **partnerships** with other businesses

A BRIEF OVERVIEW

The important questions

1. Why partnerships?
2. Why SMEs?

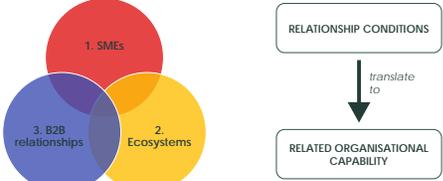
The plan



Identify the parts of the organisation that is involved with establishing as sustaining partnerships.

If those parts can be improved, the overall ability of a firm to be successful in their partnerships will also be improved.

Identifying the core concepts

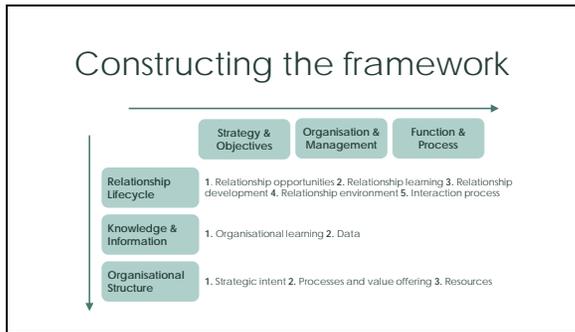


Identifying the core concepts

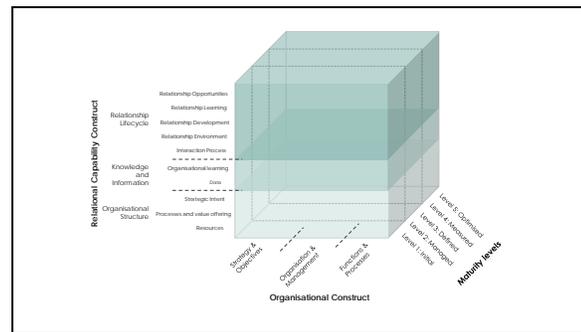
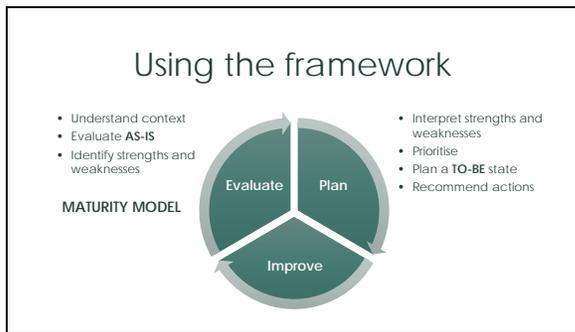
RELATIONSHIP CONDITIONS	CAPABILITIES
Goal congruent Trusting Collaborative Flexible Learning	<ul style="list-style-type: none"> • Establish shared relationship vision and goals; • Organisational vision and goals; • Developing partnering strategy; • Identify potential partners; • Reputation and external visibility; • Attract potential partners; and • Market knowledge.

Constructing the framework





Organisational Construct	Strategy & Objectives	Organisation & Management	Function & Process
Relational Construct	Relationship Opportunities RLSD1 - Establishing shared relationship vision and goals	RLDM1 - Interpret and contextualise partner diversity	RLFP1 - Identify mutual opportunities
Relationship Lifecycle	Relationship Learning RLSD2 - Understand partner requirements	RLDM2 - Managing tacit knowledge between partners	RLFP2 - Bi-lateral knowledge development
	Relationship Development RLSD3 - Create and sustain unique value offering RLSD4 - Leverage external resources	RLDM3 - Allocate internal resources to relationship	RLFP3 - Relation specific adaptations
	Relationship Environment RLSD5 - Developing partnering strategy	RLDM4 - Market knowledge RLDM5 - Reputation	RLFP4 - Identify complementary partners RLFP5 - Attract complementary partners
Interaction Process RLSD6 - Establishing contracting policy	RLDM6 - Boundary spanner	RLFP6 - Communication & the flow of information between partners	
Knowledge & Information	Organisational Learning KISD1 - Managing internal tacit knowledge	KICM1 - Managing intellectual property	KLFP1 - Internal communication & information flow
	Data KISD2 - Data exploitation strategy	KICM2 - Data & information externalisation	KLFP2 - Data security architectures KLFP3 - Capturing, storing & retrieving data KLFP4 - Data analysis
Organisational Structure	Strategic Intent OSIS1 - Organisational vision and goals	OSIM1 - Establish trustworthiness through behaviour OSIM2 - Managing relationship portfolios	OSFP1 - Individual reflective capacity
	Processes and value offering OSIS2 - Adaptable and flexible organisational structure	OSIM3 - Interdisciplinary knowledge	OSFP2 - Product / Process experimentation
	Resources OSIS3 - Investment in relationships	OSIM4 - Relationship risk assessment	OSFP3 - Measuring relationship performance



Case studies

	CASE STUDY 1			CASE STUDY 2		
Relationship opportunities	3,00	4,00	3,00	2,00	3,00	1,00
Relationship learning	4,00	3,00	2,00	1,00	3,00	4,00
Relationship development	2,50	3,00	3,00	3,00	4,00	4,00
Relationship environment	4,00	4,00	2,50	2,00	2,50	1,00
Interaction process	3,00	4,00	2,00	1,00	4,00	5,00
Organisational learning	4,00	2,00	3,00	1,00	1,00	4,00
Data	3,00	3,00	3,33	1,00	2,00	1,33
Strategic intent	4,00	3,00	4,00	3,00	2,50	2,00
Processes and value offering	3,00	4,00	4,00	3,00	3,00	1,00
Resources	3,00	2,00	1,00	2,00	1,00	1,00

- ### Questions
- Do you agree that there is a need to address the capabilities of SMEs to form collaborative partnerships with other (larger) firms?
 - Do you believe that the proposed framework would be helpful towards achieving this objective?
 - Are you aware of any other frameworks or methods that would be able to achieve this same objective?
 - Do you think that the proposed framework (both in content and structure) is achievable? And
 - In which aspects of the framework, do you believe, could it fail to achieve its objective?

Appendix I – Interview transcripts

The following section presents the interview transcripts as per Table 8.2.

Interview 1: Mr H – Cape Town – 15/10/2018

Mr H: In Academia they say that the problem should be novel, interesting, and they a lot of other criteria like it should be important to society. So your problem is 100% important. If you look at why SMEs fail it is often due to a lack of resources. And if you look at liability of newness, and why do businesses survive? It is because they are able to attract resources even if it is not always under their control. So partnerships is obviously one way that you can do that. How to actually formulate the partnership and to harness and to develop, that is where I think there is currently a void. So this can easily be taken further. So for any SME it would be important to know, if you have resource shortcomings, this is the partnership that will be able to provide the resources. How do you create a partnership, and how do you communicate the benefits to both parties, and how do you manage the partnership to ensure the benefits of both parties. Because if it is not managed correctly the partnership will fail and the resources will be lost. And then also the survival and growth of the SME is compromised.

CE: So the general approach to look at the internal aspects of the organisation and to aim to improve those aspects. Do you think that that is the right approach to take and the think that it will help to achieve the overall objective?

Mr H: Yes definitely it is in line with the SWOT approach, to look at the strengths, weaknesses, opportunities and threats. Then to identify where the strengths is, where can I improve. And then to determine how are we going to address those parts. So if that's the way that you do it then that would be hundred percent correct. Strategy at the end of the day is the art of the general, and the general is to assure positions of Victory. So to achieve that you have to say I want to move away from positions of failure. You must be able to identify failure and problem areas, you must be able to say what victory is and determine the how we are going to move from failure to victory. And that is exactly what you are doing with the framework. So in that regard I completely agree.

CE: So are you aware of any other methods to achieve the same objective as this framework?

Mr H: No not at all that I am aware of. And not in the literature of SMEs. I have been looking at it for the past 6 years and nowhere have I found Something that says ' don't worry if you don't have resources here are the partnerships where you can find it and this is how you Establish and build partnerships And be on your Merry way'. If it was out there I probably would have found it.

CE: And you also don't think that partnerships are addressed sufficiently in other type of frameworks, like in a more implicit manner?

Mr H: Well I guess it will only say that you are able to do it through partnerships, but how we still don't know. You know it's important but nobody have looked at how to do it. So there we will have to do empirical studies over years and years, and then say these ones have a good partnerships and these ones have had bad partnerships. Then we can begin to identify the characteristics and work from there backwards, deduce a theory or a model. But it is definitely

not one that I have seen. I can be 99% sure that there is not a theory surrounding this. If you go look at the SMEs survival and growth, there is a full theoretical write-up about partnerships that are important, you should establish them and it's a way to attract resources, but there is no framework that actually says but this is how you should do it.

CE: Ok so do you think but the implementation of the framework would be achievable?

Mr H: The process of identifying shortcomings and a desire To-Be State, Is generally accepted. And as long as you can validate and verify that more often than not you are able to identify the shortcomings and the characteristics of the to be desired State. And also provide solutions to go from where you are to where you want to be.

CE: If I can give you one concern that I do have, it would be to provide a maturity model to small businesses. So the focus of maturity models are often process improvement or process definition where SME often do not define the processes and do not have the need to define their processes so explicitly and formally.

Mr H: I think in that regard you would receive a lot of push back from SMEs. You see they have certain characteristics, characteristics like they don't have a lot of time, they don't have a lot of money and they are eternally stretched. So to tell them they have to better define their processes, is probably not the best way to go. So what my approach is and what I would recommend is to build explicit knowledge. I don't have to go and define it but as long as everybody is aware of it, And explicitly know about it. Explicitly know this is our strength and weaknesses, and explicitly know this is how we are going to improve on the weaknesses. Because this you can do in a day. You can have someone walk away from a session and say 'Wow I have never thought of this, we explicitly know now this is a shortcoming, we explicitly know that this is where we want to be, and we explicitly know that this is what we want to do now'. And then there is some type of action plan. You will be able to do that in a day. But you will not be able to find somebody that will do business process mapping for a couple of weeks, because they do not have those resources to spare, and it just will not work. The SMEs that are small and vulnerable will tell you that they do not have time or the money to do that. But we do want tangible knowledge. So if you are only able to create the tangible knowledge, then you have already addressed the risk of failure. So people can't unlearn things, it will be very difficult to you unlearn something. So if they know that they have to do the following things to harness a partnership, then they know those things. But to define processes might be a bridge too far for a constrained SME.

CE: Yes I agree, it will not contribute value to them if they define their processes.

Mr H: Yes and it will cause them to lose momentum. You have to consider execution in these types of things. So tell someone that they have to map their processes, it will take months. And by that time they will realise that they have not received any benefits from the exercise, and they might just leave it all together. Whereas you create tangible knowledge, the people would be able to implement that the next day in their partnerships. So equally important is not only what to do, but also what not to do. Because the list of what not to do is actually much shorter than the list of what to do. So if you will be able to create that knowledge it would be great.

CE: So where would you say they might be shortcomings in the framework?

Mr H: Any type of framework that is focused on SMEs will have some shortcomings. It is often done only by the top people. You have to use the right people. Let's look at strategy, how does it work? You have people practices and processes. The people, you need the right people that will be able to make the decisions, and also those people that actually formulate the partnerships. So it would not help if I, as CEO, Who never work at the ground level in this sales positions, try to tell the people you have to sell blue widgets while the customers actually want yellow and red widgets. The person must be part of the conversation. So with regards to the process, the process must be logical and correctly constructed. And the practices are the micro activities inside of the process. This means that everyone should be involved, it must be knowledge creation, it should not be overpowered by one or two individuals, and it should not

be bureaucratic. All those things that actually address the culture and characteristics of SMEs. I would say those are the important parts of a framework, and if a framework does not have those things it would probably be the shortcomings and could possibly cause failure. But if you involve the right people if the process is easy to follow and if you have the right micro activities that allow different people to contribute, then I would definitely say it would be achievable.

Interview 2: Dr G – Skype – 17/10/2018

Dr G: Well my main thoughts surrounding this is that anything that you can do to help SMEs to achieve better outcomes, and help them to navigate this wild business space, and give them a bit of guidance around things what to do and try to prevent them from doing things that can cause failure, that is useful. As you were going through the one thing that popped out at me was that the view that you took is very much an internal resources capability view. As in when you are constructing your SME, It is basically like building blocks or Little Blocks of Lego that you put together. That if all of these things are in place, it means that we will be successful. So the business environment that most of these SME operate in, is a lot more fluid and a lot less structured. And it is actually in a way, I have come to realise, not how we think about business at all.

When you're looking at strategic partnerships, the focus there is what the value proposition is that each of the parties will bring to the partnership. What I do agree with is this shape towards more collaboration due to technology. There's also that saying no man is an island all on its own. Everybody is connected and humans are beings that seek relationships. This research reminds me a lot about what is being done in research on open innovation, where the main thought is that you cannot have all the capabilities or resources inside of the organisation, therefore you need to look outside of the organisation, so then it will also make sense to create partnerships and build and evolve those partnerships.

I am currently working in an innovation space myself, where we are doing a lot of business development. So we are looking at relationships from our client's perspective with other prospective entities. The other complication there is, while we mention strategic partnerships, there are other configurations that these partnerships can also take. So sometimes we end up with a strategic partnership where it's a technology licensing agreement or such. Other times it configures as a joint development agreement, other times you also get strategic Investments or maybe even a full on acquisition. So it is highlighted that there are different types of configurations that comes out of this. So the question that we aim to answer out of this is what is the value that each of these parties bring to the table.

If I look at the framework that you developed, the area where you address processes and value offering, that really needs to pop out, what you are trying to achieve. When we are talking about symbiotic relationships as well, the dual interaction of both parties, and both parties receiving the benefits. It is not the same as you are establishing a strategic partnership with a distributor. Apart from the extra revenue that you are generating, is there another benefit that this SME is providing. Is there something else? Like market data, being closer to the customer. So that's just a couple of my top level thoughts.

Now, If we go to the questions, is there a need to address the capabilities of SMS to form an establish partnerships with other organisations? Definitely. I'm not sure if it would be able to be constructed in a transactional manner. For example, we need x, y & z capabilities, we hire this and that person, we implement this program, then we will achieve success. I do however see this as a very viable and useful topic to engage with.

CE: Thank you I think you have given a lot of thoughts and inputs with regard to the topic and the framework in general. With regards to the implementation, do you think it will be helpful towards achieving the overall objective of the framework?

Dr G: I think it is always valuable for businesses to have another lens to look at themselves. So the one thing that you mentioned here is that you got different results from different businesses, and that for me is not necessarily a bad thing. With any tool they will always be biased with the people who use it. So it could be that the person from case study 1 who did the evaluation are much more optimistic about their own situation, and then the second case maybe not. Whether or not you receive a higher rating is beside the point. The main point is actually for that person to make their own judgement call about where they actually think they need to improve on. So I'm not actually sure that it is so much your responsibility to interpret this data as it is for them to use this as an opportunity to see where the actual strengths lie and where opportunities to improve. If the capabilities are on a granular enough level, there should be specific actions that can flow from it.

CE: So are you aware of any other frameworks that would be able to achieve the same objective?

Dr G: Not off the top of my mind. I know there are other bodies of literature that deal just with strategic partnerships in general. I think it is called the transaction cost theory, where it basically means that you can optimise your organisation if you minimise the transaction costs.

CE: Yes the transaction cost theory is actually one of the theories that I considered within the literature foundation.

Dr G: Yes there are some other literature that really focuses on the relationship type things, it is not something that I am too well acquainted with.

CE: Do you think that partnerships is something that is addressed implicitly in other type of Business Support tools or frameworks?

Dr G: Yes I think that that is correct. I think it is taken for granted. I think a lot of theories align on some other type of goal but they do realise that the internal perspective or the resource based perspective, inherently if you don't have the capabilities yourself you will need to source it. That sourcing can take on many different forms, but it will inevitably require you to establish those relationships or partnerships.

CE: So you do agree that partnerships is something that can be highlighted in other frameworks as more important and something that needs to be achieved in its own right.

Dr G: Yes, yes exactly.

CE: So do you believe that the framework will be able to contribute value in a practical environment?

Dr G: Yes I can definitely see a practical application of this. How long did the case study interviews take you?

CE: The case studies itself did not take too long, I had a good relationship with both people in the organisations that I conducted the evaluations with. So the interview on its own did not take too long but there were a lot of informal conversations prior to the actual interviews.

Dr G: Okay yes I understand.

CE: Where would you think this framework could possibly fail?

Dr G: I think if we only take on an internal capability view, it should be fine. I do feel that there is an external point of view that is more focused on the value proposition of the relationship between the two businesses. That is going to be a bigger determinant of whether the relationships will be established and sustained, than it is going to be if we take an internal point of view. To say that we are building these capabilities from the bottom up, and this will enable us to create successful relationships. I do however think that your internal capabilities represents your action potential and

what you are capable of doing. That is a very interesting perspective because it means that these internal capabilities is sort of like a baseline, you need it as the baseline to do anything. So this framework might be good for just ensuring that your baseline is in place. But all I'm saying is that, even having that, it might not be enough to get you where you want to go. But it is important as a building block. It is sort of like a precondition.

Interview 3: Ms A – Stellenbosch – 17/10/2018

Ms A: It takes me back to what I did, but I focused more on a platform than the ecosystem, and how the stakeholders get into it. But one of the things you said is very important is – the context in which you work and to ensure that there is good communication between the different role players. Then your first question actually, yes, I agree 100% that there is a need for it. I think if you look in terms of bigger firms, I'm currently working for a start-up type of business that forms part of a larger company.

CE: So you get the cooperation between the big and the smaller company?

Ms A: Yes, if I look at how to we work together with other companies I realise how important it is to share 'our information' so we can leverage it to get something more. And there I see especially that relationship building is extremely important. Thus, with the case studies you showed that people can focus on building relationships and how they really can work with other people, one can learn something quite a bit. I do not know if you had to identify tools in terms of how to improve the relationship or to advise them?

CE: At this point I do not want to look too much at the solution. In the context of the case studies I will look, but the focus on this point is mainly to guide SMEs to identify their own strengths and weaknesses.

Ms A: Yes, that's what I just wanted to say, I don't think there's really a standard solution. If you are looking for one, good luck! I think it has a lot to do with the context. Even in our business as I look and with the different partners we work with. One of the biggest challenges is actually building relationships and partnerships, and leveraging each other. It's very difficult to see how you will say to an entire company, 'this is definitely the way we do it, you must follow these steps and then you'll get a winning recipe.' So I think the way you approach it by saying 'I'm making you more aware of this, this is what you should focus' rather than saying 'that's how to do it' is a very good approach.

CE: So if you would implement this framework it would be helpful?

Ms A: Yes, definitely, if you look at the issues. We will always look at the post mortem if we have partnered with someone and if we worked with someone on a project. We'll look at what worked, what did not work, and determine the issues that could possibly have caused it to be unsuccessful. So in this regard, it will help you to be more proactive if you work in a project with other people again. So I think from a SME's side, it will definitely help them just to see this is what one can focus on, or pay attention to. I know frameworks are sometimes hard to implement, or it's my feeling about it. So this is more a guideline

CE: Yes, it is usually the difficult part to transition a concept of an academic background to a practical environment.

Ms A: Yes, definitely, but I think of your framework's building blocks, if I can call it that, it's very well constructed. To see what is the organisation's needs and what is needed for the relationships. Because it's basically the main thing that's going to work or it's going to work.

CE: So I do not know if you are aware of any other ways that address this same problem?

Ms A: I am not currently aware of anything. I have not really looked after or paid attention to it.

CE: Yes, you've focused more on the platform part of this.

Ms A: Yes, I think one of the big things I can say from the platform's side, the conclusion I made in the end was that platform focus across the value chain is very useful, and it's very good for people aware of relationships that work not only within silos. But it is also necessary to look after more of an ecosystem

CE: Okay so you actually pointed out that it is important?

Ms A: Yes, there is a shortcoming, and it is necessary to take more of an ecosystem approach. Especially if we want to move forward. Because sometimes it's very difficult to make sure that someone who operates in one level of the platform to communicate with the right people on other levels of the platform and on the outside of the ecosystem. It's fun if we all work together in a platform, but most of the time they are like-minded people who does it from the goodness of their hearts, but you also need the people in the rest of the ecosystem to buy in. So that was one of my most important conclusions. I also talked to a few people doing commercial work who needed information from a platform. To make sure that that relationship and that goal congruency is actually correct is a big challenge. Because miscommunication is quite a big thing. Someone wants to make money out of it and someone else may want to fix a problem.

CE: At the end of the day, I did not focus so explicitly on the ecosystem as and perspective. It formed more part to create the context of the problem. So for the information to be shared, there must be a relationship. So that's the need and that's what I wanted to solve. So in terms of implementation. I know you have also worked on case studies and implemented a framework. What would you say are the great lessons you learned in terms of a framework approach to practice?

Ms A: I think the big thing is context. Whether people interpret it right. Like you said with the case study as well, you might have said something in a certain way, and they may interpret it in a completely different way. I also worked with some people regarding the platforms, and I realized that I had to explain it to them very well, "in my context, this is what I mean with this capability, and this is how you should understand or interpret it". So I would suggest just providing a definition, or just creating a block that tells you this is how to look at it. I'll say that's probably one of the more important things.

CE: Yes to make sure everyone is only on the same page.

Ms A: However, I think there are two ways to look after. You can provide it in a very structured way and say that's what this means. Or you have to give people freedom and say this is what I mean but you should take it back to your own context.

CE: Yes, to get that balance between making it generic but making it specific enough.

Ms A: So I think it's probably one of the biggest lessons of a framework, that it must be flexible and you need to scale it. It's obviously one of the important things. If you work in a context where there are only a few people involved, something is much easier. Because you can communicate directly with each other, you can make sure everyone interprets it in the same way.

CE: Yes, make sure there are no misunderstandings.

Ms A: Exactly, because I think that's where there are many issues later. In a larger context, it is often more difficult to implement a framework. I think it's very important to look at education. In terms of, that's how we will use it, this is its purpose. Because a framework, your framework as you said is making people aware. It is not a "tick tick tick" and here is your solution. So that learning component of your framework is also extremely important. First of all, this is how we use it, this is what we want to get out of it.

CE: Yes and think so about it.

Ms A: Exactly, so think about it, communicate with each other in terms of what worked, what did not work, what are the lessons from it.

CE: Yes, so the one maturity model that I used a lot as a reference to construct my framework has worked in another component where the person who evaluates their role plays. Then each role may have different interpretations. So that's something one can think of.

Ms A: Yes, it's very cool.

CE: Yes, but it is also a whole new dimension of complexity.

Ms A: Yes, I don't know if you should even try it! We are now also trying to implement something at work, and then it's typical that when I work with you every day how you understand it completely different. Something that you think is simple or very simple is another very complex one. Just to ensure that the levels of education for all involved are the same.

CE: Yes, I think we actually got it, that if everyone is not on the same page, it is possible to fail. So I do not know if you have any last thoughts about it?

Ms A: No, I think, education, context, and then obviously also what I initially said when you can give people tools. It's like a whole new level, so maybe it's something to add as a future thing to do. But if you can say 'okay, you've gone through this thing now, you've seen the maturity model, these are the areas you need to focus on, and this is for you, for example. 5 tools or 5 things that people in the industry would use to solve that problem. "

CE: Yes, just a little of a toolbox that goes with it.

Ms A: Yes like a toolbox or a backpack that you can give to people. Just because I think that if people give something to people, they half expect you to help them. So I think it will also help make it less intimidating to solve the problem.

Interview 4: Mr V – Stellenbosch – 18/10/2018

Mr V: I am fascinated by this, there are so many examples where $1 + 1$ is equal to 20.

CE: Exactly we are talking about that you that they would not have been able to create on their own.

Mr V: But you also get where $10 + 10 + 10 = 0$. Looking at these relationships you are touching on psychology and Sociology group behaviour.

CE: I completely agree, during this process I had to remind myself that I'm busy with an engineering thesis and not a psychology thesis.

Mr V: Later in my life I did a course in psychology and group behaviour, how do people interact with each other? For example when I am facilitating, you first need to understand the behaviour of the group before you can communicate the vision. Your framework reminds me of the SWOT analysis, identifying the strengths and the weaknesses.

CE: Yes and I felt that the maturity model as an evaluation method provides a quick and transparent snap shots of the current state of the business.

Mr V: With regards to the difference between the two case studies, with any framework there will always be some level of subjectivity. But unfortunately there's nothing that you can do about that.

CE: Absolutely, the most important is that the person remains consistent while completing the evaluation.

Mr V: This reminds me of a story when an Otolaryngologist and an electrical engineer sat in a bar. They ended up developing the noise clipper, where people can talk to each other while cancelling out the background noise. First in the world. It's a nice story of The Diverse things coming together, just as you are doing with this research.

CE: So when we are talking about this research, and this question that I want to ask, do you think that it is an important question to ask and do you think that it is a necessary question to ask?

Mr V: Yes. Am I allowed to shout? That's how important I think it is. Collaborative partnerships, those two words say everything about what some of the most successful companies have done right. And unfortunately, it also says what's 80% of the partnerships do not manage to do right. I almost want to say, stupid question!

CE: I think I have realised along the line that, while this is such an important question, I'm not sure if we are anywhere closer to finding an answer.

Mr V: That is because the answer does not lie in the business context, or the technology context, the answer lies in people and human behaviour. We need to look at how people work together.

CE: Do you believe that this framework will help us getting anywhere closer to that?

Mr V: If we look at the framework, especially in this case, it is critical to have some sort of mechanism to work with. Having a framework is so important, because the moment we implemented, it does not me against you, it is the tool that is guiding us. So let's for a moment forget about the detail of the framework, just the fact that the framework exists, that is everything. Detail is a discussion on its own.

CE: As I think the framework is helpful to guide someone to ask the right questions.

Mr V: Yes it is not about giving Solutions. The fact that I can give you something in a framework, it enables you to look in the mirror. The framework gives us a neutral ground to work from.

CE: If we take this framework to a practical situation, in which way do you believe it could possibly fail?

Mr V: I think the one important thing, is to determine whether everybody understands it .You get many cases in a business where people are not formally trained or educated with a business background.

CE: I agree and that is especially common in smaller businesses, where it's mostly people from different backgrounds in different Industries.

Mr V: Exactly so the first point would definitely be the understandability of it, and how you managed to explain the framework to them in a way that they would understand. And there's only one way to achieve that, you have to tell the story. And then there's also a question of will it work in different situations? But the concept of your framework, that makes a lot of sense to me.

Interview 5: Mr DK – Stellenbosch – 30/10/2018

Mr DK: You are looking at businesses who are good at working together, but they don't necessarily have the right processes and structures in place. Probably because they don't feel it is important because there is not necessarily and ROI or a service that is being delivered.

CE: Yes and that is exactly what one of my concerns are as well. The framework is looking to mature the processes of a business, which is not necessarily always ideal for small businesses to ask them to improve and better define their processes

Mr DK: Well that definitely are ways to structure processes, you can either formalize everything and around the business as a machine. Or you can ask the question at least once a week, how do we feel about this relationship? As simple as that.

CE: Exactly and I think that is the aim of this framework. Just to serve as a guide for an SME to look inward. The challenges that I noted with both case studies, is that managing I be in a relationship is difficult to find the right balance. In order

to innovate together it is obviously necessary to share your IP to a certain extent however you need to protect yourself as well.

Mr DK: Yes well in that sense I think this framework is valid because you need a measurement to determine whether the sharing is done fairly. It will show you where to look to see where the both parties are actually pulling their weight in the relationship. So just to be clear, the case studies present the capabilities and then the participants have to rate the maturity on a scale from 1 to 5?

CE: Yes but with every capability I gave a description on three different levels.

Mr DK: So it is a rating scale but you made the ratings understandable?

CE: Yes exactly. So if we continue, what I want to know from you is do you think this is a necessary question to ask.

Mr DK: Yes. Yes definitely. The world is moving towards collaboration. I actually had a conversation about this last night with somebody who's an insights analyst. And the CEO of the company just wants to insource everything. Which I just find so stupid. The technology has evolved to such an extent. It is so specialised and niche, you need the partners to handle some of the aspects, otherwise you just won't be competitive.

CE: Exactly if you try to do everything by yourself there will always be somebody else you can do it better.

Mr DK: Yes you need to partner with the people who deliver the niche products, and you should rather focus on how to draw everyone together. And a big part of drawing everyone together is the capability to form a relationship. Looking from a technical perspective, there are other aspects at play as well. For example the flow of data.

CE: Is anything we are seeing more of small businesses taking part in these types of relationships as well.

Mr DK: It's so important that small businesses must be able to play in the League of big businesses if they want to be competitive.

CE: Yes and I think it's an entire new world of opportunities that are available to small businesses. Previously when these Technologies were so accessible they were operating in a more separate markets.

Mr DK: I agree, there are so many examples that I can think of in this regard. If I look at one of the small businesses that I previously worked for, they failed because they attempted to establish a partnership with a large corporate firm, but it ended up suffocating them. Mercedes-Benz South Africa are busy partnering with small firms to provide solutions to Daimler Global group. So this is something that is happening.

CE: That's good to know and it's very interesting. If we move on to the framework that I propose to you think that this approach would be valuable to a small business and would help achieve them the objective?

Mr DK: Yes I think it would definitely. Obviously a framework is only a starting point, as you start using the framework it will improve and mature. But just to have something, that is already a big win. The concept of the framework makes a lot of sense. And I also like the idea that you don't just ask a question, but that she rather describe different scenarios from which they must choose.

CE: Otherwise it's just a very open ended question. Are you perhaps aware of any other frameworks or supporting tools that has the same purpose as this one?

Mr DK: I want to say that I have had conversations that lead up to the same idea, but nothing that I can put my finger on.

CE: So in other words, nothing that explicitly addresses this problem.

Mr DK: No there are people that are very passionate about this, but I don't think that they have a framework which they use.

CE: And do you think that this framework will be implementable?

Mr DK: Definitely, because it is a questionnaire. I think the more important question will rather be whether or not they agree with you. You need the credibility that it is something that will work, but I think that is the main reason for actually doing research. So for anything new you have to start up the fundamental principles. So I think if you take this for a few iterations, trying to improve it as far as you can, then I definitely think that it will work. I do agree with you that it is very subjective. But what I think will be very valuable, if you are able to do this over a certain amount of time and then measure where there or not there is a difference in the actual capabilities.

CE: Also be possible to see what the impacts of the improved capabilities is on their relationships and the success of their relationships. But if we talk about implementing the framework in which aspects do you believe it has the possibility to fail.

Mr DK: I think if somebody answers to question a without being honest with themselves. So it must be somebody you actually want improvement and not just wants to get a good score. So in that sense I think it's really important to do the evaluation with the right people, the people who are strategically invested in the business.

CE: Yes so the implementation of the framework is largely influencing whether or not the framework will be successful in that business? Are there no other concerns that you might have with regards to the structure of the framework or the content of the capabilities?

Mr DK: Nothing that I can think of. I think it's very important that the person who does the evaluation understands what is being asked of them. So once again we are back to the implementation. And then also if it is a framework that you are not able to adapt.

CE: I completely agree, especially in the field of SMEs where you get such a large variety.

Mr DK: Exactly so the framework needs to be adaptable and transferable for it to succeed. And then the other thing that she should also consider, is that business comes down to ROI. It seems like such an obvious concept, that you won't be able to do everything yourself, you must be ready to form partnerships. But when the CEO of a business he's stressed out, and he is trying to make the business survive, he is not necessarily going to worry about the capability to form partnerships. He's going to be worried about rand and cent. So in that sense, you have to wonder how applicable will this framework be in every situation. Are they in a good place where they are looking to grow and move forward? Or are they just trying to survive?

CE: I think that is general issue with regards to support for SMEs. If it addresses their growth and development they must be in a place to receive that support, rather than just trying to keep head above water.

Mr DK: Yes that is very true.