

A Framework for Business-Information Technology Alignment in a South African Development Bank

AM Mongale

 **orcid.org/0000-0003-0756-2324**

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Promoter: Prof R Kekwaletswe

Co-promoter: Prof LTB Jackson

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Student number: 33650012

ABSTRACT

Business-information technology alignment is a current information systems research key issue and a current business challenge. Thus, the relevance of this thesis is in addressing business-information technology alignment issues within development banks in South Africa. Using government resources, development banks are mandated to address financial market failures through financing and funding finance projects, economic segments, and segments of the population that commercial banks do not finance. South African development banks, as state-owned institutions, have recently been subjected to intense scrutiny due to unjustified but rocketing IT investments that often do not produce improved or tangible productivity and performance. The research problem is that despite the investments in information technology, the development banks are not realising a tangible return on IT investment made. The thesis argues that the lack of return on investment is due to the business-information technology misalignment within the development banks. To improve their performance, development banks must align their business and IT strategies. It is argued that organisations tend to improve their performance when their business strategy and IT strategy are aligned. The issue and challenge is that development banks in South Africa currently lack a contextualised framework that may inform the aligning of business and IT strategies. To this point, the goal of the present study was to bridge this gap by conceptualising a framework for business-information technology alignment for South African development banks.

The present study used the Strategic Alignment Model, MIT90s Model, Strategic Alignment Maturity Model and the IT Capability Model as theoretical lenses to explore and describe when and how the alignment could be achieved in South African development banks. The study followed an interpretive paradigm and an inductive research approach with a case study adopted as a research strategy. Semi-structured interviews, observation and document reviews were used as data collection methods. The collected data were then analysed using thematic and content analysis techniques, respectively.

The interpretation of findings suggest that to achieve business-information technology alignment, South African development banks must institutionalise knowledge sharing practices among the varied business units with the IT division leading the synergy and mutual understandings. Senior and executive managers need to increase their involvement and contribution in the business-information technology decision-making, business-information technology resource allocations, and the prioritising of IT projects. The original contribution of this thesis is in conceptualising a contextualised framework that may help improve business-information technology alignment within the development banks in South Africa.

Keywords: IT capability, Alignment maturity, IT strategy, Business strategy, business-IT alignment, Development bank, South Africa

PEER-REVIEWED PUBLICATIONS FROM THE STUDY

Mongale, A., Kekwaletswe, R.M. & Mogoale, P.D. 2021. Business-IT Alignment through Triangulation of Models. *International Journal of Computer & Organization Trends (IJCOT)*, Volume - 11(4):15-23.

Mongale, A., Kekwaletswe, R.M. & Mogoale, P.D. 2021. A Framework for the Alignment of Information Technology and Business in South African Development Banks. *International Journal of Innovative Science and Research Technology*, Volume 6(10):92-98.

Mogoale, P.D., Kekwaletswe, R.M. & Mongale, A. 2021. Analysis of IT Capability Impact on Organizational Performance. *International Journal of Computer Trends and Technology*, Volume 69(7):76-81.

Mongale, A. & Mogoale, P.D. 2022. Analysis of the Organisation's Business and IT Strategies: A Case of a South African Development Bank. In the proceedings of the Social Science International Research Conference 2022. *To be presented at Social Science International Research Conference, October 2022.*

Mogoale, P.D., Lekunza, J.N., and Mongale, A., (2022). "Resource dependency evaluation model of service delivery in the South African mining firm". In the proceedings of the Social Science International Research Conference 2022. *To be presented at Social Science International Research Conference, October 2022.*

DECLARATION

I, Aubrey Maniki Mongale, declare that the contents of this thesis represent my own unaided work, and that the thesis has not previously been submitted for academic examination towards any qualification.

Furthermore, it represents my own opinions, ideas and not necessarily those of the North West University of South Africa. I further declare that all the sources cited or quoted are indicated and acknowledged by means of a comprehensive list of references.

AM Mongale
6 September 2022

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ABBREVIATIONS

4IR	4th Industrial Revolution
AA	Agricultural Advisory
ABIT	Alignment of Business and IT
ACL	Audit Command Language
AFS	Annual Financial Statement
AG	Auditor-General South Africa
AI	Artificial Intelligence
AML	Anti Money Laundering
API	Application Programming Interface
ARB	Architecture Review Board
ATM	Automatic Teller Machines
ATS	Agricultural Technical Support
BCP	Business Continuity Plan
BEE	Black Economic Empowerment
BI	Business Intelligence
BITA	Business-IT alignment
BOU	Banking Operations Unit
CAB	Change Advisory Board
CBDA	Co-operative Banks Development Agency
CDC	Coega Development Corporation
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CIO	Chief Information Officer
CRM	Customer Relationship Management
CSF	Critical Success Factors
DBSA	Development Bank of Southern Africa
DFI	Development Finance Institution
DME	Data Medium Exchange

DS	Design Science
DoDAF	Department of Defense Architecture Framework
EA	Enterprise Architecture
EM	Enterprise Modeling
ERM	Enterprise Risk Management
ERP	Enterprise Resource Planning
EXCO	Executive Management Committee
FDC	Free State Development Corporation
FI/CO	SAP Finance and Cost Controlling
GEP	Gauteng Enterprise Propeller
GGDA	Gauteng Growth and Development Agency
GIS	Geographic Information System
HAD	Housing Development Agency
HCIS	Human Capital Information Systems
HCM	Human Capital Management
IAR	Integrated Annual Reports
ICB	Investment and Corporate Banking
ICEIS	International Conference on Enterprise Information Systems
IDC	Industrial Development Corporation
IDT	Independent Development Trust
IOT	Internet of things
IS	Information System
IT	Information Technology
JSE	Johannesburg Stock Exchange
KYC	Know your client
Khula	Khula Enterprise Finance Agency
LimDev	Limpopo Economic Development Enterprise
MBO	Multi-business Organisations
MEGA	Mpumalanga Economic Growth Agency
MS Projects	Microsoft Projects Application

Manco	Management Committee
MoDAF	Ministry of Defence Architectural Framework
NCA	National Credit Act
NCR	National Credit Regulator
NDA	National Development Agency
NEF	National Empowerment Fund
NHFC	National Housing Finance Corporation
NWDC	North West Development Corporation
NYDA	National Youth Development Agency
Nedlac	National Economic Development and Labour Council
Nurcha	National Urban Reconstruction and Housing Agency
PDF	Portable Document Format
PDP	Personal Development Plans
PDnF	Project Development and Facilitation
PFMA	Public Finance Management Act
PLS	Partial Least Square
PMC	Project Management Committee
PMO	Project Management & Organisational Integration
RHLF	Rural Housing Loan Fund
RMS	Records Management System
ROI	Return on Investment
SAM	Strategic Alignment Model
SAMAF	South African Micro Apex Fund
SAMM	Strategic Alignment Maturity Model
SBU	Strategic Business Units
SDLC	System Development Life Cycle
SEM	Structural Equation Modeling
SLA	Service Level Agreements
SME	Small and Medium Enterprises
SMME	Small Medium and Micro Enterprises

SOE	State-Owned Enterprise
SOP	Standard Operating Processes
Seda	Small Enterprise Development Agency
Sefa	Small Enterprise Finance Agency
Steerco	Steering Committee
TMS	Treasury Management System
TOGAF	The Open Group Architecture Framework
US	United States of America
WOS	Web of Science

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

Business-information technology alignment is a current information systems research key issue and a current business challenge. Thus, the relevance of this thesis is in addressing the business-information technology alignment issues within development banks in South Africa. This thesis explores and describes business-information technology alignment key issues in the context of South African development banks. Development banks are financial institutions that are not profit-driven but are given financing and funding mandate by the national and provincial governments (Carrasco et al., 2017) to further development efforts within the country. To this point, their performance is often under intense scrutiny. To fulfil their mandate, the government invests resources (including human resources and information technologies) that would enhance effective productivity and performance. Despite the business and information technology (IT) investments, majority of these banks have declining performances. This thesis argues that, to increase their performance, South African development banks must align their business-information technology strategies. Literature suggests that organizations tend to enhance their performance when they align the business strategy with the IT strategy (Suwatana & Winai, 2014). The research key issue is that South African development banks do not have a known guiding framework to help achieve the alignment.

The remainder of this introductory chapter is organised as follows: first, background to the field of study is discussed by reviewing key concepts making up the research topic; second, the background to the research problems are discussed; thirdly, the knowledge gaps and motivation of the study is discussed; and lastly, the purpose and significance of the study, the study objectives and research questions driving the study are presented.

1.2 BACKGROUND TO THE FIELD OF STUDY

This section reviews literature on concepts that make up the research topic in order to help the reader understand the field studied.

1.2.1 Information Technology

Information technology (IT) is the practice of utilising technological tools or systems to store, retrieve and transmit data via software, hardware, and networks. IT is in demand as a result of the introduction of new markets, the expansion of international commerce, and the problems companies confront to remain sustainable and profitable (Ben Romdhane Ladib & Lakhal, 2015). Effective use of IT is essential to generate business value (Navissi *et al.*, 2017). IT enables companies to survive and operate better in an uncertain economic climate (Yoshikuni & Albertin, 2018).

In the present study, IT refers to all technical tools, systems, hardware, software, local and wide area networks, and the bank's overall IT infrastructure. It also refers to the division or individuals assigned to the division responsible for information technology.

1.2.2 IT Strategy

An IT strategy is a collection of objectives, strategies, and targets about information technology systems and capabilities, IT competencies, and IT governance (Kanavittaya, 2016). The IT strategy is a blueprint for how a company will employ software, hardware, and networks to accomplish its goals (Academy, 2012). For organisations to exploit competitive advantages over their competitors, they develop an IT strategy. An IT strategy allows a business to identify and capitalise on opportunities using its technology. (Ben Romdhane Ladib & Lakhal, 2015). The IT strategy includes, amongst others; business information systems and applications, IT infrastructure, IT structure, IT capabilities, inter alia (Ullah & Lai, 2018).

In this study, "IT strategy" refers to the plan for how the bank utilises all technical tools, business information systems and applications, hardware, local and wide area networks, and the complete bank's IT infrastructure to accomplish the business strategy's objectives.

1.2.3 Business Strategy

A business is an entrepreneurial body or organisation that engages in commercial operations and activities that result in the production and sale of goods or the provision

of services. A business strategy or corporate strategy is described as an organisation's market conduct that is determined by its plans, policies, and processes (Kanavittaya, 2016). Businesses adopt strategies in response to socioeconomic, political, and technological developments. Businesses are attempting to become more customer-centric while simultaneously increasing their agility. With the rapid advancement of technology, the client is more tech-savvy than at any other point in time. As a result, access to customers and their expectations are rapidly shifting (Malviya, 2017).

In this study, the term “business strategy” is used to refer to the plans and procedures that guide the development bank in responding to social, economic, political, and technical variables while pursuing the shareholder mandate.

1.2.4 Business-IT Alignment

Business-IT alignment, or business-information technology alignment, is the process of bringing the IT strategy and the business strategy into harmony. Business-IT alignment is a term that refers to the increased alignment of dynamic business objectives with the specific technical assistance provided by IT. Business managers and executives have emphasised the vital nature of successfully aligning business and IT strategies. However, as business leaders and managers have noted, achieving successful alignment between business and IT is always a challenging task (Ullah & Lai, 2018). Business-IT alignment focuses on three levels of alignment: strategic alignment, structural/functional alignment, and social alignment (Kaidalova, 2015).

Numerous studies (Gerow *et al.*, 2015) have been conducted to demonstrate the beneficial effects of business-IT alignment on organisational performance. It is self-evident that aligning business and information technology inside a company has a direct impact on and enhances organisational performance (Gerow *et al.*, 2015).

The term business-IT alignment relates to the alignment of business and IT, as well as the alignment of the strategies that lead them.

1.2.5 Business-IT Alignment frameworks

There are several business-IT alignment frameworks, which include the Strategic Alignment Model (SAM), Strategic Alignment Maturity Model (SAMM), MIT90s framework, and Social Alignment between Business and IT Model.

Studies on business-IT alignment have used a variety of frameworks, such as resource-based and contingency frameworks. Business-IT alignment uses contingency frameworks to optimize company performance considering the business-IT alignment process as part of the strategy-formation process. The resource-based perspective, on the other hand, places a strong emphasis on an organization's assets and capabilities as sources of competitive advantage. Different IT endowments and assets can help to understand how businesses might gain a durable competitive advantage and why businesses perform differently. Although Lee et al., (2008) posit that framework development must take both the resource-based view and contingency viewpoints into account, the present study takes SAM, SAMM, IT Capability Model and MIT90s framework into account.

1.3 BACKGROUND OF THE RESEARCH PROBLEM

This section provides the background to the research problem by discussing the study location and context as well the knowledge gaps identified in reviewing the existing literature. This is also motivation for the present study.

1.3.1 Banks in South Africa

The study was about development banks in South Africa, hence this subsection describes banking and development banks in the context of South Africa.

South Africa's banking sector is Africa's biggest and sophisticated. Its sophistication is comparable to that of the industrialised world's financial industry (Nyasha & Odhiambo, 2015). Banks in South Africa are heavily regulated, and governance plays a significant role in alignment. The ability of the bank to compete and deal with factors such as government restrictions, technological developments, and consumer needs all have impact on the business strategy. Business and IT collaborations exist in some cases, but

IT managers are not engaged in the development of the business strategy except to offer technological advice (Kekwaletswe & Mathebula, 2014). The issue that banks face is lack of commitment to the budget for business-IT alignment and IT investment in general (ibid).

1.3.2 Financial Institutions

Financial institutions, which include commercial banks, development banks, insurance companies, and investment firms, are much more likely than other industries to invest significantly more in the technology that powers their businesses, as they view IT as a critical component of customer proximity and operational excellence. Financial institutions strive to run their entire business operations on IT platforms. They find it difficult to effectively utilise the capabilities of their business systems to reap the benefits of process optimisation, automation, and digitisation (Wagner *et al.*, 2014).

1.3.3 Commercial vs development banks

Commercial banks are a homogeneous group of financial institutions. There is little that distinguishes South African commercial banks from one another. Even though their products are similar. As a result, commercial banks develop business strategies that provide them with a competitive edge to maintain a healthy financial position and profit margins (Roberts-Lombard & Reynolds-de Bruin, 2017). Commercial banks are profit-driven. On the other hand, development banks are not profit-oriented and operate under a government mandate and financial support. Their strategies are geared toward accomplishing their development mandate (Carrasco *et al.*, 2017).

1.3.4 Obstacles and stumbling blocks

Organisations of the 21st century face challenges, which include recognising and grabbing business opportunities, refining and rethinking their existence and objectives and predicting their future operations (Ben Romdhane Ladib & Lakhal, 2015).

Organisations do not develop competencies at both a corporate level and within their strategic business units (SBU) where IT capabilities can be deployed to support business capabilities (Reynolds & Yetton, 2015). Other challenges, as stated by Reynolds and

Yetton, refer to maximising IT's flexibility to respond to the constant changing and demanding needs of the business to remain competitive.

Overcoming barriers between the organisation and its IT is not a simple task. Having IT manage the day-to-day reality of business is problematic to capture in a theoretical model. That is, a theoretical framework that companies can implement to ensure a successful alignment of business-IT alignment does not exist (Alaceva & Rusu, 2015), and this seems to be true for development banks in South Africa.

Another impediment to business-IT alignment is environmental turbulence and its impact on alignment and organisational performance (Luftman *et al.*, 2017; Mikalef *et al.*, 2014). The present study explores the alignment with the focus on the South African environmental context.

1.4 KNOWLEDGE GAPS AND MOTIVATION FOR THE PRESENT STUDY

This section identifies knowledge gaps from the existing scholarship point of view. Knowledge gaps are grouped as contextual, practical, theoretical and methodological knowledge gaps.

Although business-IT alignment has been addressed in other sectors such as manufacturing (Amarilli, 2014), medical (Ullah & Lai, 2018), mining (Yuliana & Rahardjo, 2018) and construction (Liao & Teo, 2019), it has not been addressed in the context of South African development banks.

1.4.1 Contextual knowledge gap

Context plays a role as it influences the use of information technology. This subsection discusses the contextual knowledge gaps as development banks and South Africa are unique to the rest of the world.

There are numerous gaps in the research on business-IT alignment, as numerous factors can have a direct or indirect effect on the alignment relationship and the study findings (Kyobe, 2008; Prieto & de Carvalho, 2018). It is difficult to generalise business-IT alignment studies, as any variable or dimension that is different from one study can alter the findings significantly (Suwatana & Winai, 2014).

Business-IT alignment is context-dependent. As a result, South Africa, development banks, and South African development banks create a unique setting for aligning business and IT.

1.4.1.1 South Africa

Critics have criticised empirical studies of business-IT alignment for focusing exclusively on developed countries rather than developing countries (Jonathan *et al.*, 2019). South Africa is culturally, linguistically, and historically distinct from any other country, and thus, any study of business-IT alignment conducted there is unique in comparison to any other study of the same subject conducted elsewhere. The factors and dimensions that affect business-IT alignment are specific to South Africa in this study.

1.4.1.2 Development Banks

In contrast to commercial banks, development banks are not profit-driven and thus operate in a unique context. Development banks receive mandates from their governments. The mandates vary from government to government. Development banks are unique, with distinct dimensions that may affect business-IT alignment. Development banks finance projects, economic segments, and segments of the population that commercial banks do not finance due to their high intolerance of risk. With public finances or funds directed towards non-revenue-generating public goods, development banks prioritise the provision of public goods for which full or partial cost recovery is possible. The development bank's mission is to address financial market failures, complementing government resources and market financing (Gumede *et al.*, 2011).

According to the United Nations, development banks play a critical role in resolving market failures in at least five ways (DESA, 2005). Their roles are as follows:

- Appraise the economic and social development impact of projects seeking financing;
- Accompany investors in the long run through long-term loans;
- Offer technical assistance to sectors essential to growth;
- Attract investors by facilitating financing operations; and

- Alleviate the negative impact of financial crises through countercyclical financing by offering loans, even during downturns, and pooling efforts with regional financing institutions.

1.4.1.3 South African Development Banks

While it has been stated that South African banks are as sophisticated as those in developed countries, South African development banks are also as sophisticated and heavily regulated by the government and other regulatory bodies. South African development banks operate in an unusual and unique environment.

1.4.2 Practical knowledge gap

In practice, business-IT alignment studies have not been able to provide guidelines that make decision-making easier for executives on a large scale (Luftman *et al.*, 2017). Even within the same types of organisations, the factors affecting business-IT alignment vary according to the size of the organisation. Environmental issues and uncertainty, for example, have a beneficial effect on strategic alignment during the planning process in large firms (Padukkage *et al.*, 2015). To accurately understand how environmental issues affect business-IT alignment, a comprehensive study of business-IT alignment and all forms of environmental uncertainty must be conducted (Padukkage *et al.*, 2015). Padukkage *et al.* (2015) say that environmental uncertainty includes things like the uncertainty of the market, the uncertainty of technology, and the uncertainty of the rules.

There is a knowledge practical gap in that South African development banks do not have the know what and know how to actually achieve business-IT alignment in practice. That is, there is no known practical framework in place to guide the alignment in development banks.

1.4.3 Theoretical knowledge gap

Current business-IT alignment theoretical models are inadequate in resolving South African development bank's alignment issues because they assume a single outlook. Not only should research focus on developing business-IT alignment models but also on improving the metrics for measuring their success (Walraven *et al.*, 2018). Financial data,

customer benefits and satisfaction, organisational output, and industry-specific metrics may all be used as measurement criteria (Luftman *et al.*, 2017). In South African development banks, there is a theoretical vacuum because it is unknown how business-IT alignment should be implemented. There is no known theoretical framework for achieving business-IT alignment in the context of development banks in South Africa.

The theoretical knowledge gap is that there is no known business-IT alignment framework that is informed by triangulating the MIT90s framework, the SAM, the Strategic Alignment Maturity Model, and the IT Capability Model. Triangulating these frameworks may breach the business-IT alignment theoretical knowledge gap.

1.4.4 Methodological knowledge Gap

Deductive research approaches and surveys used in the majority of business-IT alignment studies do not adequately address the how part of the phenomenon as the details are often not given (Malta & Sousa, 2016; Zhang *et al.*, 2019). To profoundly explore and describe business-IT alignment issues in the context of development banks, the present study employs a case study research strategy following an interpretive research paradigm. A case study allows for an in-depth understanding of the business-IT alignment phenomenon that a deductive survey strategy may not offer.

1.5 PROBLEM STATEMENT

Business-IT alignment is a current information systems research key issue and a current business challenge. The research problem is that, South African development banks, despite investing in IT, are not realising the return on investment. For example, business performance is declining which then fails the banks mandate. It is inferred that this problem is due to business-IT misalignment within the development banks. The misalignment means then that information technology does not effectively enable business processes. However, the existing frameworks inadequately address the "what", "how", and "when" to achieving business-IT alignment, in the context of South African development banks. Since development banks and South Africa are unique, there is a need for a context sensitive framework that would help address the identified alignment

issues. To address the research problem, the present study sought to conceptualise a framework for business-IT alignment for South African development banks.

1.6 PURPOSE OF THE STUDY

The purpose of the study was to explore and to describe the business-IT alignment issue, in the context of South African development banks.

1.7 STUDY OBJECTIVES AND QUESTIONS

1.7.1 Research Goal

The study goal was to conceptualise a business-IT alignment framework sensitive to the South African development bank context.

1.7.2 Study Objectives

- To analyse and understand how the business strategy and the IT strategy manifest in South African development banks
- To explore and describe business-IT alignment in South African development banks through triangulation of four theoretical lenses
- To describe how social factors, culture and communication, influence business-IT alignment in South African development banks
- To determine how business-IT alignment can be improved in the context of South African development banks

1.7.3 Primary Research Question

The primary research question driving the study was, *How should South African development banks achieve business-IT alignment?*

1.7.4 Secondary Research Questions

- How do business and information technology strategies manifest in South African development banks?

- How do the theoretical lenses of MIT90s framework, SAM, SAMM, and the IT Capability Model help describe business-IT alignment in South African development banks?
- How do social factors, culture and communication, influence business-IT alignment in South African development banks?
- How can South African development banks improve business-IT alignment?

1.8 DELIMITATION

The present study explored and described business-IT alignment issues in the context of development banks, therefore, the business (banking) and the actual information technologies were not studied but the organizational strategies. That is, IT networks and systems as well as routine business tasks were not studied. How IT strategy and business strategy align or misalign was the focus of the study. Triangulation of the four theoretical lenses underpinning the study defined the scope and focus in the study. Although in the present study, declining performance of South African development banks is argued to be linked to lack of alignment or business-IT misalignment, performance was not studied but inferred.

1.9 SIGNIFICANCE AND CONTRIBUTION OF THE THESIS

The significance of the present study is in bridging the knowledge gaps identified earlier in this chapter. The contribution of the thesis is in the framework conceptualised. How the study contributes theoretically, practically, methodologically, and contextually is detailed in the last chapter of this thesis.

1.10 SUMMARY OF CHAPTER 1

This introductory chapter gave an overview of the present study by first discussing the field studied by defining the concepts making up the research topic. This was followed by the background to the research problem where the study location, context and knowledge gaps were given. The knowledge gaps identified gaps which the present study sought to bridge. The identified knowledge gaps are the motivation for the present study. The

chapter then provided the problem statement, the purpose of the study, the study objectives, and the research questions that drove the study.

1.11 OUTLINE OF DISSERTATION

The remainder of the thesis is structured as follows:

- Chapter 2: Survey of scholarship and theoretical foundations - This chapter surveys the scholarship by reviewing existing literature that informed the present study.
- Chapter 3: Theoretical frameworks - This chapter discusses and describes the theoretical frameworks which underpins the present study and also provide the conceptual research framework.
- Chapter 4: Research methodology - This chapter describes the research methodology followed to address the research problem.
- Chapter 5: Data analysis and discussion of findings - This chapter analyses the data that were collected using thematic and content analysis methods. The findings are analysed and discussed per theme and subtheme.
- Chapter 6: Interpretation of findings and the framework - This chapter interpretes the findings against existing literature. It also provides the study recommendations and presents the framework
- Chapter 7: Evaluation of the research, thesis contributions, and conclusion - This final chapter ponders on the research journey by evaluating the study. It provides study contributions, limitations and conclusion.

This chapter introduced and gave the background to the study. The next chapter surveys the scholarship by reviewing existing literature that informed the present study.

CHAPTER 2: SURVEY OF SCHOLARSHIP AND THEORETICAL FOUNDATIONS

2.1 INTRODUCTION

The preceding chapter introduced and gave the background to the study. This chapter surveys the scholarship by reviewing existing literature that informed the present study. The chapter is outlined as follows; it first looks at business-IT alignment and related works; and then discusses and details concepts, barriers and enablers, methodologies, models and theories of business-IT alignment.

2.2 BUSINESS-IT ALIGNMENT AND RELATED WORKS

This section reviews existing research works that relates to the present study in order to establish what is known or addressed while also establishing the knowledge gaps left.

Researchers have reported extensively on the positive influence of business-IT alignment on organisational performance (Gerow *et al.*, 2015). Alignment between business and IT is considered to be top-down and business-driven. In addition, it can identify gaps between business and IT operations or capabilities (El-Mekawy *et al.*, 2015). Not only does business-IT alignment improve performance, but it also increases the return on the value of IT investments; it provides IT with the flexibility to respond to changes quickly and it increases positive organisational performance (Zhang *et al.*, 2018).

Even though researchers agree that alignment between the business strategy and IT strategy has a positive effect on an organisation, it is equally true that the lack of alignment results in ineffective organisational performance (Wadström, 2018). Alignment is different and even more complex in multi-level businesses. Multi-level businesses and diversified organisations, especially those that acquire businesses as a strategy, need unconstrained acquired businesses to react to their unique environments. This may not always be feasible when an acquired firm is aligned with the parent company, since alignment imposes inflexibility and complicates reacting to changing conditions. (Hamel, 2014). In this case, each business has its business logic that requires a high level of individuality (Wadström, 2018).

Table 1 below is a review of related studies. It outlines the context of the study under review, the theories used, the findings and research gaps identified.

Table 1: Findings from Related Works and Knowledge Gaps

Authors	Topic	Context	Theories & Methodologies	Findings	Knowledge Gaps/Study limitations
(Schlosser <i>et al.</i> , 2015)	Achieving social alignment between business and IT	The development of a social alignment model between IT and business at an operational level. Data that was collected from 132 banks from the United States of America (US) was used.	A survey of 1500 banks from the US was done. Questionnaires were sent to 1213 managers who agreed to participate. Only 149 questionnaires were completed with 17 questionnaires not considered for this study because of missing answers	Social alignment must be driven by a variety of IT governance processes with support from the executive management, IT management, board and IT planning committees. Social alignment has a positive influence on business performance.	Data was collected in a single country, in a single industry and only with a single business process The present study covers more than one business process
Authors	Topic	Context	Theories & Methodologies	Findings	Knowledge Gaps/Study limitations
(Reynolds & Yetton, 2015)	Aligning business and IT strategies in multi-business organisations	The study expands on literature by proposing a new model of business and IT alignment for multi-business organisation	The paper starts by reviewing literature on IT alignment. Semi-structured interviews were conducted with 78 participants. The Theory of Profit is used to demonstrate how alignment creates value	IT functional, structural and temporal alignment have positive influence on organisational performance	The study does not include the influence of social and political processes that affect IT alignment. The present study includes social and political

			through competence, flexibility and governance		process and how they affect business-IT alignment
Authors	Topic	Context	Theories & Methodologies	Implications& Findings	Knowledge Gaps/Study limitations
(Amarilli, 2014)	An explanatory study on the Co-evolutionary mechanisms of Business-IT alignment	Two companies from Europe were selected based on similar dynamicity, homogeneity of the IT role and organisational complexity.	The case study employs a qualitative research approach to explain how alignment is achieved by identifying relationships between alignment factors A Co-evolution theory was used as explanatory theory	The theoretical implications of this study is providing insights into the alignment achievement process. The study has found that alignment is a co-evolutionary process that involves four mechanisms; the transformation of the business, the adjustment of the organisation, the transformation of business needs into IT projects and implementation, and the business influence on organisation.	Limited factors affecting alignment were identified because of the small database size used The present study used a large database and therefore more factors affecting business-IT alignment were discussed
Authors	Topic	Context	Theories & Methodologies	Implications& Findings	Knowledge Gaps/Study limitations

(Yaw Obeng & Mkhize, 2019)	Assessment of IS-innovation strategic alignment factors among universal banks in Ghana	11 participants from 6 banks in Ghana chosen based on their book values of total operating assets as of 2010 and 2014	A purposive sampling strategy and a qualitative approach using a computer-assisted qualitative data analysis software were employed	In Ghana, IT and innovation in banks are aligned and therefore strategic alignment with business is being achieved through innovation initiatives, management commitment, collaboration and organisational leaning.	The study was conducted in Ghana with 11 participants from 6 banks. This means that factors and findings excluded many other banks that were not part of the study. The sample for the study is extremely small. None of the banks in this study were development banks. This present study focused on development banks in South Africa
Authors	Topic	Context	Theories & Methodologies	Implications& Findings	Knowledge Gaps/Study limitations
(Alaceva & Rusu, 2015)	Barriers in achieving business-IT alignment in a large Swedish company: What we have learned?	The study was conducted at a large Swedish organisation that has more than 250 employees and over 50 million euro turnover	An interpretive case study strategy with a qualitative approach was used to identify main barriers of business-IT alignment. Only 7 participants were interviewed due	There is no framework that organisations can implement to ensure a successful business and IT alignment because the business is too agile and disordered to be trapped in a model.	The major limitation of the study is choosing an extremely small sample. Due to time restrictions only seven participants were contacted from which five IT

			to time constraints. The Social Dimension Model of Reich and Benbasat (2000) was used to identify social factors for alignment	The study presents 19 business-IT alignment barriers of social dimension	executives and two business executives. The present study has 32 participants from all divisions from within the South African development bank
Authors	Topic	Context	Theories & Methodologies	Implications& Findings	Knowledge Gaps/Study limitations
(Jia <i>et al.</i> , 2018)	Business-IT Alignment Literature Review: A Bibliometric Analysis	This study collected 309 papers published during the period 1983-2015 from the Web of Science database.	The study uses a qualitative approach and a variety of bibliometric and visualisation analytic techniques such as citation analysis, co-citation analysis and main path analysis	The study has unearthed four themes of business and IT alignment which are dynamics, antecedents, measurements and the development of a business-IT alignment model	Web of Science was used as the only source; clearly, some papers published on other sources have been missed. The present study used many research databases as sources.
Authors	Topic	Context	Theories & Methodologies	Implications& Findings	Knowledge Gaps/Study limitations
(Luftman <i>et al.</i> , 2017)	Enhancing the measurement of information technology (IT) business alignment and its influence on company performance	The study uses Partial Least Squares to statistically validate the construct using a dataset	The study uses the Strategic Alignment Maturity model because it captures the scope and the level of	The study produces a complete instrument to set a yardstick of where the organisation is in its alignment journey and to	The study did not take environmental and political aspects into consideration. The present study includes

		covering over 3000 global participants including nearly 400 Fortune 1000 companies.	activities through which the IT function and business functions engage 80% of data was collected through interviews and group discussions whilst the other 20% was through questionnaire.	improve its IT and business relationship and performance	environmental, social and political process and how they affect business-IT alignment.
Authors	Topic	Context	Theories & Methodologies	Implications& Findings	Knowledge Gaps/Study limitations
(Kachale, 2022)	Exploring strategic alignment of business and information systems/technology strategies using a middle management perspective	This article defines the difference between corporate and business strategies before examining the strategic role that middle management performs through sense-making and issue selling.	The study is based on literature review on middle management and strategic alignment in the banking sector Malawi.	The study identifies the paucity of strategic research from a middle management point of view	The study is limited in that it is still work in progress and does not give enough detail on the methodology. For example how the banking sector has contributed to the study This present study is clear on how the South African development bank contributes to the discussions and findings

Table 1 is a review of studies that have been undertaken with regard to business-IT alignment. The table lists the studies and outlines their context, theories and methodologies, implications and findings as well as knowledge gaps and limitations. As demonstrated by gaps and limitations, there is still more work to be done in this field of study.

While research on business-IT alignment has been conducted for a variety of organisations, researchers emphasise the importance of conducting research in a variety of sectors (Kyobe, 2008; Walraven *et al.*, 2018), in this case, the South African development banks.

2.3 BUSINESS-IT ALIGNMENT DIMENSIONS AND ANTECEDENTS

This section presents a survey of scholarship on dimensions and implications that affect business-IT alignment. The purpose of these studies is to identify factors of alignment from literature and how they affect and shape research.

2.3.1 Dimensions for aligning the business strategy with the IT strategy

In a study to provide an overview of the present circumstances of the directions and development of research into business-IT alignment, researchers looked at the most explored dimensions for aligning the business strategy with the IT strategy (Spósito *et al.*, 2016). In their endeavor to discover research topics that are mostly prominent with business-IT alignment, these researchers employ a systematic literature review study to determine which of the business-IT alignment dimensions feature prominently. The study identified four dimensions, namely, strategic dimension, structural dimension, social dimension and cultural dimension.

The study is based on 15 years of research. The authors used peer-reviewed journals and conference papers using only three scientific research databases, which included the International Conference on Enterprise Information Systems (ICEIS). Their findings indicated that all of the papers they reviewed discussed strategic alignment. As a result, it is the most frequently discussed topic in terms of business-IT alignment. Around 75%

of the papers reviewed in this study made reference to strategic alignment. 40% and 30% of the papers reviewed made reference to social and cultural dimensions, respectively.

This clearly demonstrates the importance of these dimensions for business-IT alignment. Spósito *et al.* (2016) incorporated all dimensions into the proposed conceptual framework for this study.

Regrettably, this study relies exclusively on three scientific research databases. These are extremely limited and do not include the plethora of peer-reviewed journals available through the countless databases.

2.3.2 Dimensions and antecedents and the evolution of business-IT alignment

A study was conducted to use a variety of bibliographic metrics and visualisation analysis techniques to illustrate the evolution of business-IT alignment. Citation and co-citation analysis are two of the techniques that were used (Jia *et al.*, 2018).

The study uses citation analysis to identify and analyse the significance of papers and authors on business-IT alignment to direct researchers' attention to the history of the topic. Using the citation network, a technique called main path analysis is used to identify notable knowledge flows.

The Web of Science (WOS) database was used to collect data. The database search utilised alternative terms for 'alignment' such as fusion, fit, harmony, bridge, linkage, and integration to locate and retrieve a comprehensive list of papers published between 1983 and 2015 in the WOS database. The search returned 259 documents. Furthermore, the study searched for all papers cited in the 259 papers found in the WOS database, resulting in the discovery of an additional 8542 papers. Only 50 of the 8542 articles were published between 1983 and 2015 and had at least five citations related to business-IT alignment. The 50 papers were added to the 259 already published, bringing the total to 309. Only 259 papers were used in this study after they were cleansed.

This study employs a quantitative research methodology. This is an objective approach that has been shown to reduce biases due to its rejection of human subjectivity.

The study identified the dimensions and antecedents of business-IT alignment as described in Table 2 below.

Table 2: Dimensions and antecedents of business-IT alignment (Jia et al., 2018)

Dimension of BITA	Antecedents
Strategic dimension	• Strategy orientation • Connections between business and IT planning processes
Social dimension	• Shared domain knowledge between business and IT executives • Successful IT history • Mutual trust and influence • Relationships between CIO and executive team
Structural dimension	• IT decision-making rights • Reporting relationships • Status of CIO in the organisation • IT arrangements
Cultural dimension	• Organisational culture • Organisational subcultures • Shared cultural interpretations • Common language between business and IT executives

Jia et al. (2018) discovered that four dimensions stand out as the most consistent and significant in the study. As described in Table 2, the four dimensions identified in this study are the strategic dimension, the social dimension, the structural dimension, and the cultural dimension.

The findings show that existing research lacks a model that outlines the dynamic process of business-IT alignment and its integrated agility (Jia et al., 2018). Moreover, the majority of business-IT models fail to strike a balance between short- and long-term performance benefits. Furthermore, the study classifies business-IT alignment knowledge into four major categories: business-IT alignment models, business-IT alignment measurement, business-IT alignment dimensions and antecedents, and business-IT alignment dynamics.

The study's primary limitation is that it relies on a single database for research materials. This without a doubt indicates that a plethora of studies have been overlooked by this

study. In addition to this limitation, the study examined only journal publications resulting from ten conferences. This implies that additional studies may have been overlooked. Nonetheless, the dimensions identified in this study have been incorporated into the model proposed in this present study.

2.4 BUSINESS-IT ALIGNMENT: BARRIERS AND ENABLERS

This section presents a survey of scholarship looking at barriers, enablers and other factors that affect business-IT alignment. These studies identify barriers and enablers in literature to inform practice on factors that will positively affect business-IT alignment.

2.4.1 Factors influencing business-IT alignment

Researchers examined perceived factors influencing business-IT alignment in their study titled, "Assessment of IS-innovation strategic alignment factors among universal banks in Ghana", (Yaw Obeng & Mkhize, 2019). One of their primary objectives was to determine the factors affecting business-IT alignment. They used a case study research strategy to elicit feedback from Ghanaian banks regarding the critical factors affecting business-IT alignment. Between 2010 and 2014, these researchers used purposive sampling to identify and select six banks in Ghana that consistently received high ratings on the basis of book values and total operating assets. Eleven participants from the six banks were interviewed in semi-structured interviews. To improve the quality of interpretation, data were analysed using computer-assisted quality data analysis software.

According to their findings, participants identified agility, business-IT collaboration, management commitment to IT, and organisational learning as critical factors for alignment. These factors are directly related to the dimensions of business-IT alignment, which are cross-domain alignment and domain knowledge sharing. The study emphasised the critical nature of maintaining a strong working relationship between business and IT executives to broaden their knowledge of one another's domains. Additionally, the study noted that agility enabled IT to enhance its capabilities in supporting a changing strategy that enables business executives to make quick and timely decisions.

Regrettably, the study's sample of banks was insufficiently diverse. The banks were nearly identical in terms of size and performance consistency. The findings could be different if additional banks of varying composition and size were investigated. Also, the number of participants is not as robust as it could be. There were only 11 interviewees.

2.4.2 Barriers that affect the social dimension

A investigative study conducted focused on identifying and investigating barriers that hinder business-IT alignment (Alaceva & Rusu, 2015). A case study using a conceptualised research model by Reich and Benbasat (2000) was conducted in a large Swedish company to investigate the barriers that affect the social dimension of business-IT alignment.

Alaceva and Rusu (2015) used a four-factor research model to investigate the barriers to achieving business-IT alignment. The four factors are shared domain knowledge between IT and business executives, success of IT implementations, communication between IT and business executives, and integration of business and IT planning.

The case study is conducted at one of Sweden's top ten companies. The organisation was deemed to be appropriate due to its size and intricate organisational structure. Data were gathered through interviews. The most appropriate business stakeholders, IT decision-makers, and professionals were interviewed. Professionals considered for interviews needed to have a minimum of five years of experience in a senior position, be actively involved in the design and implementation of business-IT alignment, and be familiar with strategic alignment. A semi-structured interview guide was used.

Because the study's objective was to identify the primary impediments to business-IT alignment, a qualitative approach was taken. An interpretive case study strategy was used since the study was investigative in nature. To uncover new factors and knowledge about the research topic, a thematic data analysis method was used.

The findings were grouped into four main factors. Under the shared domain knowledge, the barriers identified were:

- low level of understanding IT by business
- resistance to shared knowledge
- separate decision making by business
- lack of time to learn IT and
- outsourcing of other IT components by business

For IT implementation success, the barriers identified were:

- IT over promises
- unclear specifications
- high requirements and old legacy
- different metrics and targets
- lack of confidence in IT
- different people involved in projects

For communication between business and IT executives, the barriers identified were:

- lack of formal networks
- business and IT cannot communicate
- different languages
- inability of business to articulate their needs
- sense of mistrust and lack of openness

For connection between business and IT planning process, the barriers identified were:

- business-IT executives do not participate in each other's strategic planning
- IT management lacks leadership
- size of organisation
- unclear roles

2.4.3 Barriers and enablers of business-IT alignment

In the study titled, “Business-IT Alignment: A Practical Research Approach”, researchers empirically enquire about the impact of business-IT alignment, identify enablers of

alignment and conceptualises a model that integrates strategic and operational levels of strategy to provide for a more holistic view of business-IT alignment (Charoensuk *et al.*, 2014). The objective of identifying enablers is to be able to provide factors that can enable practitioners to improve business-IT alignment. This they attempt to achieve by answering a basic set of questions that forms part of their research problem, “What are the antecedents of business-IT alignment as of today”. Charoensuk et al (2014) reflected on and considered the strategic business-IT alignment and the operational business-IT alignment.

Telephonic interviews were used to collect data. Their study focused on three- to five-star hotels in Thailand. These hotels were chosen because they incorporate an IT component that would aid in the day-to-day operation of the establishment and also allow customers to book online. With three-star hotels, the target group included only those with more than 100 rooms. The interview questions were divided into two categories: information technology interview questions and business interview questions.

The survey team assessed conflicting responses, incomplete responses, and inconsistent responses during data analysis. A follow-up interviews was conducted to ascertain the status of any incomplete responses. Only 312 responses were obtained from a total of 833 hotels. The data analysis technique used was Structural Equation Modeling (SEM). Table 3 summarises the business-IT alignment (BITA) enablers.

Table 3: A Summary of BITA enablers (Charoensuk et al., 2014)

Enablers from Literature	Enablers from Expert Interviews
Shared Domain Knowledge	Ability of people to understand the other business units
Communication between business and IT	Communication
Strategic Planning Processes or Planning Sophistication	

IT Management Sophistication (Technical & Managerial aspects)	Service Mindedness of IT
IT Infrastructure Flexibility	
IT Success (Prior IT Success, Successful IT History, Past Implementation Success, IT Track Record)	Learning from past implementation, Current IT solution
Business Direction	Management direction
Organisation Size	
Organisational Structure	
Technological Structure	
External Environment Uncertainty	
Management Support on IT	Management leadership

The enablers listed in Table 3 were identified through a literature review or through interviews. The researchers studied the literature and conducted interviews with industry leaders to gain a better understanding of the enablers of business-IT alignment in the service industry. Respondents were required to meet a set of criteria. Respondents were required to have worked in the hospitality industry for at least five years and at the current hotel for at least two years.

To create a model, the researchers limited the enablers to those that directly impacted the industry and the study. On top of that, they focused on enablers that were mentioned in the literature that resulted in findings that contradicted their study. The model carefully considered each enabler's relationship to business-IT alignment. And finally, the approach was used to incorporate organisational performance into the business-IT alignment process (Chan *et al.*, 2006).

They identified three critical enablers of business-IT alignment in their findings: shared domain knowledge, IT success, and IT management sophistication. In addition, they discovered that strategic business-IT alignment dominated operational business-IT alignment and thus represents the organisation's overall alignment; however, practitioners are encouraged to consider both levels of alignment. Finally, they

acknowledge that when it comes to business-IT alignment, the size of the organisation matters. They state that their findings indicate that larger organisations have a higher degree of alignment than medium- to small-sized organisations.

Their study limitation is that the model developed is industry-specific, meaning it cannot be applied to other industries such as financial institutions or development banks. Additionally, their study notes that findings may vary depending on the region.

There is a lack of business-IT alignment studies in countries that are developing (Jonathan *et al.*, 2019). Jonathan and others point out that most of the studies have been completed and undertaken in developed countries. They examined the SAM and its capability to analyse and assess business-IT alignment, and they concluded that it is unsuitable for practical use. The study then employs the SAMM, which addresses the shortcomings of other business-IT alignment models. SAMM defines six dimensions that have been shown to improve business-IT alignment. The most notable additions to the dimension that SAMM makes are social alignment and industry-specific structural alignment.

Jonathan *et al* (2019) use a case study research strategy to investigate the various intra-organisational factors affecting business-IT alignment. The study's ultimate objective was to examine the interaction between information technology employees and those in other departments. The study was conducted in Ethiopia at a private bank. It is regarded as one of the most technologically advanced financial institutions. It caters to both private and business clients. The respondents were chosen using a non-probability sampling technique. The data collection process involved constructing the organisation's realities through the use of internal organisational documents, website posts, organisational annual reports, and other publicly available materials. The same participants were interviewed twice. The researchers used the first interview to gain an understanding of the bank, while the second interview was semi-structured and focused on the study's objectives. Six business-side directors, four IT-side directors, three business-side managers, and one business-side officer were interviewed. Thematic analysis was used to transcribe and analyse the data.

Jonathan et al (2019) discovered that communication is one of the critical factors that is missing when attempting to align the business strategy with the IT strategy. Additionally, it was discovered that IT leaders do not have a strong enough understanding of the business to articulate the value of IT to the business. In addition, the study discovered a lack of collaboration between business and IT. Furthermore, it was discovered that the IT division lacked the necessary skills to provide the necessary services to support the business strategy. The study has found that the barriers to business-IT alignment in developing countries are related to environmental factors such as lack of skills and unreliable IT infrastructure. The following barriers to business-IT alignment were identified:

- lack of business or IT understanding;
- unclear business or IT strategies;
- inefficient use of available IT human resources for the right task;
- inadequate training of business personnel to use the existing IT systems;
- failure to capture opportunities to learn from outside providers;
- lack of formal metrics and oversight to measure IT value;
- lack of time for personal skill development; and
- low perception of value of IT

The study could have been expanded to include additional banks to bolster the findings' richness. The use of a single bank limits generalisation to other banks in developing countries. Additionally, Jonathan et al (2019) state that each case may be unique hence the focus of this present study was on South African development banks.

2.4.4 Barriers organised around six major themes

A study was conducted on China's small and medium Enterprise (SME) sector to investigate and analyse business-IT alignment barriers (Wang & Rusu, 2018). China is said to have millions of SMEs that face numerous challenges when it comes to aligning business and IT strategies.

Three SMEs in China were studied using a multiple case study research strategy. The SMEs that were chosen for the study operate in a variety of industries. Only SMEs with fewer than 250 employees and less than \$50 million in revenue were considered. Company A is a market leader in the development of mobile games in China. The company was founded in Shanghai in March 2013. Company B is a global tea trader. It imports tea from various regions of China and Japan for export to Canada. Company B employs fewer than 100 people. Company C is a technology research and development company. The company specialises in the research and development of internet technology products. It is a new start-up business.

Semi-structured interviews were conducted with IT and business managers to ascertain the barriers to business-IT alignment, at these three companies. The interview guides were developed in accordance with the SAM factors identified through a literature review. The interviews were conducted in Chinese and transcribed for analysis in English. Some interviews took place at the company's offices, while others took place via Skype. Along with interviews, data was gathered from the companies' internal document repositories and publicly available information about the companies on the internet. The collected data was thematically analysed. Maxqda was used to code data and identify emerging themes from interview transcripts.

A number of barriers that are organised around six major themes derived from the SAMM, which are represented in Table 4 (Luftman, 2004).

Table 4: Barriers organised under six major themes stemming from SAMM (Luftman, 2004)

Themes	Barriers to Business-IT alignment
Communications	• Unilateral communication between business and IT • Unstable networks and software applications • Limited budget in IT based communication • Lack of awareness of knowledge sharing between business and IT
Competency/Value Measurement	• Unclear/no link between business and IT metrics • Lack of long-term benchmarking • Dependency on IT resourcing • Low perception of importance of metrics

Governance	• Frequent delay and ignorance of problem-solving response • Business cannot rightly clarify their needs to IT department • Low level of CEO's understanding of IT • Nonstandard prioritisation of IT projects • Over planned IT deployment
Partnership	• IT is viewed as an emerging asset and not a strategic partner • Unclear allocation of risks and rewards between business and IT • Indeterminate roles in the partnership • Trust style and business-IT partnership • Reluctance to move forward by partnering business and IT • Tense social interaction
Scope & Architecture	• Limited number of employees in IT • Flexible IT architecture • Weak awareness of formal IT integration • Transitional risks of replacing old with new IT architecture
Skills	• Business managers trust in IT managers • Lack of trust to leverage staff's ideas and innovation • Lack of encouragement of personal career crossover

2.4.5 Impediments to business-IT alignment

Gbangou & Rusu (2016) conducted on the impediments to business-IT alignment. The focus of the study was on the banking sector in developing countries because it was believed that the barriers to business-IT alignment in this context have not been explored. Table 5 below shows barriers to business-IT alignment.

Table 5: Barriers to business-IT alignment based on literature review (Gbangou & Rusu, 2016)

Factors identification area	Barriers to business-IT alignment
Factors identified outside the financial sector	• Top management not committed to the strategic use of IT • Low level of shared domain knowledge • Lack of organisational integration

	• Lack of frequent communication between users and IT Department • Lack of personal social network • Lack of interpersonal communication skills • Past IT implementation failures • Unsuccessful IT history • Complex IT structure and Organisation • Lack of management insight into IT operations • Missing focus on customer understanding and customer support • Dominance of business executives in decision making
Factors identified inside the financial sector	• Unclear long-term planning strategies • Inability to anticipate and act before the effect of change is manifest • Not involving the right people in strategic planning • Lack of top management support and commitment • Overlooking the bank's past and present position • Inability to perform a detailed analysis of the bank's performance • Lack of complete understanding of profit mechanics

Gbangou & Rusu (2016) employed a case study research strategy in four Burkinabe commercial banks. Each of the four banks operate in other African countries and has a presence in Europe. They collected data through semi-structured interviews. Interviews were conducted with only managers from the business and information technology departments. To recruit experienced participants, managers needed to have been in their current position for at least three years. Additionally, they needed to be involved in decision-making regarding business-IT alignment.

Thematic analysis was used to code and classify responses and identify emerging themes from the data collected through semi-structured interviews. Themes were classified and categorised to enable comparisons between responses from different participants. All interviews were conducted via telephone and recorded with respondents' permission. Also, internal company documents were used to collect data to supplement the interview process.

The interviews and internal documents revealed additional barriers to business-IT alignment not identified during the literature review process. These additional barriers are as follows:

- Delay in task execution

Business sends requests to IT at a rate and volume that exceeds what IT can handle. This results in delays in the execution of front-line business tasks. However, it is critical for businesses to complete their requests on time because their primary objective is to meet the client's needs. The bank's ability to meet deadlines is harmed by the delay in task execution. The business requests are complex, and IT human resources are frequently inundated and overwhelmed by the volume of requests. Task execution delays are a hindrance to business-IT alignment.

- Lack of time to acquire new knowledge

Due to the complexity and volume of work that the IT division face, the staff there lack the time to acquire additional skills or even attend self-improvement and development training. Without continued education and self-improvement, the IT division's current skills become obsolete as technology advances at a breakneck pace. Lack of time for new training could be a result of an unfit-for-purpose IT structure, which acts as a barrier to business-IT alignment.

- Insufficient cross-sectional trainings

Banks develop new business information systems products in response to changing business requirements to keep up with the pace of technology. These software solutions are primarily intended to assist the bank employees in performing their daily tasks more efficiently. With new software solutions, existing staff must be trained to keep up with the latest developments. This type of training is typically provided by the IT division or consulting firms and is referred to as cross-sectional training. The issues with this type of training are that it is insufficient and does not equip users with the necessary skills to immediately begin using the new software systems. Inadequate cross-sectional training serves as a roadblock to business-IT alignment.

- Dependency on telecom operators

Developing countries have a finite amount of available bandwidth. As a result, banks in developing countries face difficulty connecting to the internet and transferring data. Banks rely heavily on internet connections for support because they rely on external service providers to assist them remotely. Automatic Teller Machines (ATMs) are used to conduct transactions without entering a bank or going outside banking rely on the telecoms' infrastructure to operate. If telecommunications services fail, this will undoubtedly have an effect on the services provided by banks. The banks do not own the network infrastructure, but rather the telecommunications companies do. This means that banks in developing countries lack adequate IT infrastructure, which creates a barrier to business-IT alignment.

- The heavy workload of banking personnel

Bank employees face a heavy workload on a daily basis. Certain employees perform tasks that should be delegated to multiple individuals. This is because banks are motivated by profit maximisation and are hesitant to replace departing employees with permanent employees. This can create security concerns, as a single person is performing the functions of two to three people, and all checks and balances are contained within that single individual. Inadequate IT controls act as a barrier to business-IT alignment, as they result in an untrustworthy system and data on which decision makers cannot rely.

- Reluctance to hire more personnel and reduce workload

Banks are hesitant to invest in human capital by hiring additional staff because their return on investment is unclear. The decision to hire additional staff to alleviate current staff workload is made at the highest level of management, which is the executive. The executive is focused on raising the company's profile and profit while lowering costs. As a result, the risk of overburdening banking agents is viewed as a cost-cutting measure. This, however, degrades performance and results in low service quality, creating a barrier to business-IT alignment. The improvements to business-IT alignment are summarised in Table 6 below.

Table 6: Improvement Areas and Challenges for business-IT alignment (Alsharif et al., 2018)

Improvement Area	Description of Improvement	Challenges for alignment
Organisational Communication	Knowledge sharing practice must be entrenched between IT and business to establish a good level of understanding between parties. The practice must aim to establish the following: 1. Partnership with agreements on priorities 2. Mutual understanding of roles and responsibilities between IT and business 3. Sufficient consultation and sharing of information 4. Availability and effective business-IT liaison to coordinate communication and deliverable and workload between departments	• Interdepartmental partnership • Mutual understanding • Sufficient knowledge sharing • Availability and effectiveness of IT-business liaison
Enhancing organisational governance	Senior and executive managers from different department should contribute and be involved in making IT decisions, prioritising IT projects and effectively managing resources for IT projects.	• Involvement in strategic planning • Involvement in executive committees • Availability of a structured reporting hierarchy • Authorisation for decision making and understanding the role • Availability of criteria to prioritise IT projects
Specify alignment scope and build the architecture to support alignment	IT should provide IT infrastructure that supports the implementation of IT solutions that improves business processes. The solutions provided by IT should be effective and customised to meet the needs of business	• Automating business processes • IT solutions effectiveness/customisation
Developing organisational and human skills	Organisations must develop and skill up IT staff so that they can be ready to tackle	• Readiness to face changes • Management style

	expected and unexpected changes. The management must learn from their previous experiences and encourage change acceptance.	• Learning from previous experiences

The challenges of business-IT alignment highlighted explored in Table 6 above by conducting an in-depth analysis of a recent implementation of various IT systems in a medical facility and making recommendations for closing the gap between the business and IT strategies (Alsharif *et al.*, 2018).

2.5 INTEGRATION OF BUSINESS-IT ALIGNMENT WITH ENTERPRISE ARCHITECTURE

This section presents a survey of scholarship looking at how research has integrated business-IT alignment with Enterprise Architecture (EA) processes for the purpose of exploring successful alignment.

2.5.1 Enterprise Architecture facilitates Business-IT alignment

A systematic literature review called, “A Systematic Review of Business-IT Alignment Research with Enterprise Architecture” explored how EA is used to facilitate business-IT alignment (Zhang *et al.*, 2018). The study provides answers to the following questions: when, who, what, why, where, and how EA facilitates business-IT alignment. By responding to these questions, the researchers hoped to gain a thorough understanding of business-IT alignment from an EA perspective and to identify the current weak points in aligning the IT strategy with the business strategy.

EA is defined as an organised and coordinated collection of plans for the combined illustration of the business and IT landscapes in the organisation's past, present, and future states (Zhang *et al.*, 2018). EA is viewed as a multifaceted tool for achieving and sustaining business-IT alignment. The study examines historical developments and the current state of business-IT alignment through the use of EA.

The study analysed 111 articles from a variety of different data sources. Relevant keywords were used to conduct a search across multiple databases. The primary method

of topic discovery was by asking when, who, what, why, where, and how. This analysis was conducted on each piece of literature considered. The researchers argue that a thorough understanding of the state of the current literature on business-IT alignment using EA would be obtained by answering these six questions.

The study found that literature describes the motivations and challenges associated with business-IT alignment through the use of EA. These challenges and motivations are detailed in Table 7 below.

Table 7: Motivations and challenges for business-IT alignment using EA (Zhang *et al.*, 2018)

Motivations	Challenges
• EA is a good descriptive method for BITA. • BITA is one of the goals of EA development. • Adopting EA can achieve competitiveness and value. • EA is a management tool for BITA. • EA enables planning of organisation transformation. • Studying BITA using EA reduces organisation complexity. • Studying BITA using EA improves enterprise agility. • Studying BITA using EA maximises return of it investment. • Studying BITA using EA decreases organisation uncertainty. • Studying BITA using EA improves availability and fault tolerance.	• It is difficult to address business and IT changes. • Effects of combining BITA and EA are not apparent. • Understanding environment or strategy is difficult. • EA methodologies lack theoretical foundation. • Current EA modeling languages are inadequate. • EA management is ineffective. • Effective or universal EA frameworks are lacking. • Misalignment has not been paid much attention. • It is hard to evaluate BITA using EA. • Practical studies are lacking. • EA tools representing BITA are lacking. • Legacy systems haven't addressed effectively.

In their findings from focusing on papers published from 2002 to 2016, they have found that there is an increase in the number of studies concentrating on business-IT alignment. Additionally, the findings indicated that the majority of research studies focused on the relationship between business-IT and EA, as well as how EA facilitates and maintains alignment. The study discusses several EA governance frameworks and how they were

used to align business and IT. The study discovered that in business-IT alignment research, the core research areas or alignment dimensions are functional integration, structural alignment, cross-domain alignment, logical alignment, social and cultural alignment, and contextual alignment. Business architecture, information architecture, and application architecture are additional dimensions introduced by EA. This study discovered that 14 models for business-IT alignment have been developed using EA.

Despite an increase in business-IT alignment research, there is a dearth of literature on how EA can help maintain business-IT alignment. EA and business-IT alignment is in its infancy (Zhang *et al.*, 2018). There are still numerous inconsistencies and limitations. Furthermore, the link between business-IT alignment and EA has not been established.

2.5.2 Business-IT alignment and enterprise architecture for social alignment

In a study titled "*Achieving social alignment between business and IT – an empirical evaluation of the efficacy of IT governance mechanisms*", Schlosser *et al.* (2015) developed a theory-based model of operational social alignment that takes into account social capital between IT and business units, as well as IT staff's understanding of business. Additionally, the study examines the mechanisms of informal and formal IT governance that result in the formation of social alignment and business value. The study uses survey data from banks in the United States of America to demonstrate how social alignment can be achieved at various levels through a variety of IT governance mechanisms, including top management support, IT representation on the executive board of directors, joint IT planning, and IT training.

Their study employs social capital theory to examine the influence of a social perspective on business-IT alignment and IT governance mechanisms on alignment. The study examines the operational relationships between business and IT. This is the point at which the alignment of the business and IT strategies should be implemented and coordinated to have an effect on the organisation's performance. The study's objective is to bring business and information technology closer together operationally to facilitate business-information technology alignment.

Schlosser et al. (2015) sought to answer the following question: *“What is the role of IT governance mechanisms in achieving social alignment between business and IT at the operational level and, thus, in improving business performance”*.

To test the social capital theory's hypothesis, data were gathered through a survey of the largest 1500 banks in the United States of America. The survey was restricted to managers responsible for specific business processes. As a result, the survey concentrated on a single business process to ensure that respondents were knowledgeable about business-IT collaboration. Out of 1500 respondents, only 1213 agreed to participate in the study. Only those who chose to participate received questionnaires; however, only 149 completed them. Of the 149 questionnaires completed, 17 were incomplete.

The findings indicated, among other things, that social capital between business and IT has a positive effect on IT personnel's understanding of business and, in turn, on business performance. In addition, the findings indicate that IT governance mechanisms are positively correlated with the social capital of IT and business. IT governance can take the form of either formal or informal integration. The term "formal integration" refers to scheduled meetings, formal departmental coordination, and other structural and formal interactions between business and information technology. Informal events could include those that bring together IT and business.

While the majority of the literature supports the findings, the study is limited in that it examines only one dimension of business-IT alignment. Additionally, it is constrained by the fact that it focuses on a single business process. Consideration of additional business processes and dimensions could have benefited this study. Also, the study's list of IT governance mechanisms is extremely limited and is not exhaustive. The study examines only one barrier to business-IT alignment on the social dimension, namely domain knowledge sharing, and makes no mention of other dimensions such as prior IT success, communication between business and IT executives, or connections between business and IT planning.

2.5.3 Using TOGAF to facilitate business-IT alignment

A study was performed to develop a model that demonstrates the alignment of business and IT strategies by supplementing SAM with elements of The Open Group Architecture Framework (TOGAF) (Bhattacharya, 2018). TOGAF is an EA framework. The study's primary objective was to assist businesses in achieving and maintaining cross-domain alignment between business and information technology strategies. By achieving this objective, the researcher hopes to address critical business-IT alignment challenges, including the fact that most organisation's business strategies are unknown and ambiguous, and that executive managers lack an understanding of the importance of aligning the IT strategy with the business strategy and how IT can contribute to the organisation's success.

Bhattacharya (2018) discussed the widely used SAM and criticised it for failing to provide managers with a path to achieve a high degree of alignment between business and IT strategies. As a result, the model augments TOGAF to address limitations. TOGAF was chosen because it has been successfully used in the past to connect organisation's strategic goals and value proposition to their processes and technology. SAM is composed of four components: business strategy, business infrastructure and processes, information technology strategy, and information technology infrastructure and processes. *Ibid* (2018) focuses on cross-domain alignment between only two of those constructs: business strategy and information technology infrastructure and processes. By connecting the two constructs, this model aims to achieve strategic alignment. The remaining two constructs are not included in this study.

To enable technological capabilities, TOGAF's Technology layer, which describes logical and hardware capabilities, is added to SAM's IT infrastructure and processes. The motivation layer is added to the business strategy construct of SAM. Motivation is an EA construct comprised of drivers, goals, and objectives.

Bhattacharya's (2018) model has not been empirically validated, and thus the results of its use are unknown. The study makes no mention of the process for achieving cross-

domain alignment between a firm's overall business strategy and its IT infrastructure and processes.

2.5.4 Measuring business-IT alignment maturity using EA

In another study titled, "Evolution of Business-IT Alignment: A Conceptual Model and Intervening Changes From Resource Allocation", researchers propose a conceptual model that combines EA and a business-IT alignment measurement function to address a gap in the literature on dynamic alignment (Zhang *et al.*, 2018). This study introduces a model for business-IT alignment evolution that combines EA with a maturity framework for business-IT alignment and a business-IT alignment factor for dynamic resource allocation. Additionally, an algorithm for dynamic resource allocation is proposed. Dynamic business-IT alignment refers to the process of achieving and maintaining alignment (Zhang *et al.*, 2019). The study correlates the business-IT alignment maturity framework with EA for the purpose of measuring business-IT alignment (Luftman & Kempaiah, 2007).

Zhang et al (2019) use four perspectives that are common across EA frameworks such as TOGAF, DoDAF, and MoDAF. These perspectives include business architecture, system architecture, technology architecture, data and information architecture, and data and information architecture. Business architecture is a term that refers to the strategies, processes, requirements, organisational structures, and business functions of a business. The term "system architecture" refers to the business information systems and applications services that are required by the business. The term "technology architecture" refers to the IT infrastructure and system components that enable the execution of business information systems and applications services. Finally, data and information architecture refers to the data and information that a business requires to operate. Alignment is concerned with the business functions contained within the business architecture and the business information systems and applications contained within the system architecture. After that, the Luftman & Kempaiah's (2007) maturity framework is continuously applied to the aligned EA components (Luftman & Kempaiah, 2007). When the maturity framework detects misalignment, a critical event is declared, which could indicate that the business function has changed and is no longer compatible

with the application. The maturity framework tracks changes to the EA components and is updated as necessary to maintain alignment.

The potential contribution of this study is the introduction of a business-IT alignment model that makes alignment sustainable and flexible. The challenges with this study is that it selective when it comes to the EA viewpoints it has selected. This makes the proposed model easy and not easily generalisable to most industries. The case in this study is hypothetical and not practical.

2.5.5 An intermediary model capable of facilitating business-IT alignment

A study was conducted to develop an intermediary model capable of facilitating business-IT alignment through a business model lens (Fritscher & Pigneur, 2015). The intermediary model is a hybrid of the Enterprise Architecture and the Business Model Canvas. ArchiMate is the enterprise architecture framework that was used in this study. ArchiMate includes three layers for aligning the business model: business architecture, process architecture, integration architecture, software architecture, and IT infrastructure architecture.

Fritscher & Pigneur (2015) proposes a visual intermediary model that can aid in the transition between business and EA models. The model is based on common understanding of the business model and EA. This is accomplished by addressing the research question "*Could a visual intermediary model facilitate IT alignment by assisting in the transition from a business model to an enterprise architecture*"? Fritscher & Pigneur (2015) demonstrate how the intermediary model can be associated with both the business model vision and the EA through use cases. They proposed a model that can be used in a top-down or bottom-up fashion. This means that it can be approached from the perspective of a business model strategy and the architecture that supports it, or from the perspective of the EA and the business model it can support. This hybrid approach combines business and IT perspectives, facilitating the alignment of business strategy and technical IT infrastructure.

The visual element of the preliminary model becomes a one page layer that assists practitioners to find a common ground for managers and technical members of the organisation. This provides a starting point for discussions and collaboration for business-IT alignment. Their study was conducted using the Design Science Research paradigm, which emphasises the importance of an artifact at the center of a three-cycle framework. The relevance cycle, the rigor cycle, and the design cycle are all examples of these cycles (Fritscher & Pigneur, 2015).

The preliminary model proposed here does not identify misalignment. It is applied to a subset of the business model's components, not to all of them. In terms of barriers to business-IT alignment on the social dimension, the study focuses exclusively on domain knowledge sharing and makes no mention of prior IT success, communication between business and IT executives, or connections between business and IT planning. And as stated previously the study of EA and business-IT alignment is still in its infancy, with numerous contradictions and limitations remaining before EA can be used as a facilitator of business-IT alignment (Zhang *et al.*, 2018).

2.6 INTEGRATION OF BUSINESS-IT ALIGNMENT WITH OTHER PROCESSES

This section presents a survey of scholarship looking at how research has integrated business-IT alignment with other organisational process and concepts for the purpose of exploring successful alignment.

2.6.1 IT governance contributes to Business-IT alignment

A conceptual framework that integrates the business-IT alignment and an IT governance model was articulated in a journal article titled, "How information technology governance mechanisms and strategic alignment influence organisational performance: insights from a matched survey of business and IT managers" by Ping-Ju Wu *et al.* (2015). The study's objective was to demonstrate that business-IT alignment could act as a mediating factor in determining the effectiveness of IT governance on organisational performance.

Ping-Ju Wu *et al.* (2015) conceptualise a framework based on the hypothesis that IT governance can facilitate business-IT alignment, resulting in increased organisational

performance. IT governance entails the establishment of structures, processes, and mechanisms aimed at enhancing business-IT alignment. In addition, the study identifies mechanisms for enhancing business-IT alignment, such as decision-making structures, formal processes, and communication strategies. These three factors contribute to business-IT alignment.

To validate the conceptual model, a field study was conducted with 136 organisations in Taiwan. The CEOs and CIOs of mid- to large-sized businesses were contacted via mail, e-mail, and online questionnaires. The response rate was 71%. More than 70% of the respondents were executive managers and senior managers. The study adopted a quantitative approach.

Ping-Ju Wu et al. (2015) concluded that the three IT governance mechanisms examined—decision-making structures, formal processes, and communication approach—all contribute to business-IT alignment. Also, they discovered that aligning business and information technology improves organisational performance. According to the study findings, IT governance, business-IT alignment, and organisational performance are all related.

In addition, their findings make practical recommendations for executive managers and information technology practitioners. They recommend in the study that the chief information officer (CIO) be a member of the executive committee. This enhances shared domain comprehension, which is the social component of business-IT alignment.

2.6.2 Adaptability of business-IT to information system design

A study was conducted to consider the operational analysis of business-IT alignment adaptability with information system (IS) design (Amarilli, 2014). The study contributes to the body of knowledge by proposing a framework for analyzing two dimensions of analysis: business and flexibility requirements, and the maturity of information systems. The framework combines traditional IT valuation parameters such as application portfolio coverage and integration with technological and architectural parameters that provide flexibility for the company's information systems.

Amarilli (2014) collected data from 48 Italian manufacturing SMEs between 2006 and 2010 using a structured questionnaire and in-depth interviews. The questionnaire and interviews were designed to elicit information about the following: the organisation's competitive position, its structure, its supply chain management and sales network, turnover, quantitative data on employees, market trends, and application portfolio. Additionally, the evolution of IS architecture over the last few years, processes and performance, IT decision-making processes, and budget formulation were considered. The proposed framework was validated and implemented in eight organisations that are in the process of renovating their information systems.

The proposed framework is based on three stages of analysis and design: an assessment of business needs, both current and future, an assessment of information system maturity or the capacity of IS to support business needs while ensuring flexibility, and a gap analysis and recommendation of the target application portfolio configuration. The proposed framework demonstrates value and effectiveness as a tool for assisting organisations in selecting the appropriate IT and alignment factors. However, the proposed framework fails to address and incorporate additional critical dimensions of alignment, such as social and cultural dimensions. As previously stated, these dimensions are critical for business-IT alignment.

2.6.3 The relationship between IT ambidexterity and business-IT alignment

In an exploratory study to determine how business-IT alignment can be improved and achieved more effectively, Tai *et al.* (2019) asserted that IT ambidexterity is rooted in managerial capability. According to them, managerial capacity is supported by managerial cognition, managerial social capital, managerial human capital, and resource deployment flexibility. IT ambidexterity refers to the dynamic managerial capability of the IT division, which stems from IT's ability to exploit and explore existing technologies. The study investigates the relationship between ambidexterity in information systems, IT assets, and business-IT alignment. The study examines the relationship between IT assets and business-IT alignment using four antecedents from an IS Asset Research Model. Understanding business situations, acquiring new technology skills, interacting with users, and having flexible technology assets are all forerunners to IT assets. 14

hypotheses are tested to ascertain the relationship between IT Assets, IT Ambidexterity, and business-IT alignment. A sample of 162 manufacturing companies was used to validate the IS Asset Research Model. The data collection instrument was a mail survey. The sampling firm was chosen from a list of Taiwan's top 1000 companies published by the Taiwan Credit Information Service. Only 162 completed responses were analysed from the surveys sent to the company. The data were analysed using Partial Least Squares (PLS) because this was a preliminary study and the data needed to be analysed casually. The study collected survey data using a random sampling technique.

Tai et al. (2019) found that dynamic managerial capability benefits business-IT alignment. Additionally, they found that to achieve business-IT alignment, the IT division must have the budget necessary to explore and exploit available technology (Tai *et al.*, 2019). This requires them to seize opportunities presented by the external environment. Furthermore, the study discovered that IT Assets have a sizable impact on business-IT alignment. The organisation's resources have a direct impact on its ability to support business. Different types of information technology assets are used for operational support and strategic decision-making. The more technology assets and business knowledge there are, the more aligned the organisation becomes. Their study has limitations in that the instrument used did not elicit detailed responses from respondents, resulting in a study that lacks depth in explaining the relationships between the variables. The study's other limitation is the analysis tool used. PLS requires fewer statistical specifications and constraints and performs poorly with large data samples. The study also focuses exclusively on IT assets and ambidexterity; many other known factors affecting business-IT alignment are omitted.

2.6.4 Business-IT alignment and enterprise modeling

In an article titled "Enterprise Modeling for Business and IT Alignment – A Framework and Recommendations", the authors examine how enterprise modeling (EM) can be used to facilitate business-IT alignment (Kaidalova *et al.*, 2017). EM is well-known for its beneficial practices that provide a consistent description of the EA's various components. Furthermore, EM is used to generate shared knowledge and facilitate communication between stakeholders. Also, EM simplifies the process of developing a number of integrated models that outline and define various aspects of an enterprise (Korhonen &

Kaidalova, 2015). The study's objective was to demonstrate a framework for demonstrating how EM can aid in business-IT alignment.

Kaidalova et al. (2017) applies Design Science (DS) to the creation of artifacts such as methods, models, and constructs with the goal of resolving an unresolved problem. DS is used to enhance an organisation and its employees' capabilities through the creation of new artifacts (Venable *et al.*, 2017).

A systematic literature review was conducted first to identify areas of interest, gaps, and the role of EM in business-IT alignment. A second, more focused review of the literature was conducted to identify EM challenges and recommendations regarding business-IT alignment. A round of interviews was conducted to gather data to investigate EM practice with a particular emphasis on the challenges and recommendations for the purpose of an EM framework for business-IT alignment. To situate EM within the context of business-IT alignment, the identified EM intentions are incorporated into the SAM model.

Table 8 shows the challenges and recommendations relevant for the context of business-IT alignment.

Table 8: EM challenges and recommendations (Kaidalova et al., 2017)

Challenges	Recommendations
Timely discussion of technical solutions	• Start modeling with a group of participants who have extensive domain knowledge of problematic areas. • Make sure that IT experts are involved in the process only after the key areas have been identified and a general understanding of what should be changed has been gained.
Reuse of enterprise models	• Make sure the existing models are maintained in a repository and kept up to date. • The benefit of maintaining models should be clarified for the enterprise management.
Dealing with diverse backgrounds, knowledge and interpretations	• Provide the participants with a brief reminder of the purpose of the models being presented and a summary of the notation. • When models are used as a basis for explanation and discussions, the diverse backgrounds and knowledge of the stakeholders involved should be considered and consolidated.

Presenting relevant information in an understandable way	• Use the benefit of a good visualisation when applying models for different purposes. • Make sure the target audience can understand the models.

The output is an EM-for-BITA framework that identifies business-IT alignment challenges and recommendations. According to Kaidalova *et al.* (2017), these findings are not new and they confirm and complement existing knowledge. The study also accede that some of the challenges identified in their study cannot be resolved due to technical limitations. The issue with using EM to transform an enterprise is that it focuses exclusively on employee roles and relationships, rather than on the larger picture, which is alignment (McGinnis, 2007).

2.6.5 The impact of IT leadership on business-IT alignment

Eom *et al.* (2015) investigated the impact of IT leadership on business-IT alignment through the use of shared domain knowledge and knowledge integration. They further developed a model that connects IT leadership to business-IT alignment, with a particular emphasis on the transformation of the influence of IT leadership behavior on alignment. The study proposes a model on how transformational IT leadership influences business-IT alignment using knowledge-based theory of organisations and transformational leadership theory (Grant, 1996).

Eom *et al.* (2015) define transformational leadership as a leader's capacity to transform and motivate the people they lead by inspiring them to pursue higher goals. Transformational leaders empower others, initiate organisational change through innovation, and foster continuous innovation. Business-IT alignment is a function that requires continuous collaboration, activity coordination, and information sharing between business and IT. Knowledge-based theory of the organisation advocates that organisations must incorporate knowledge of individual specialist into a common knowledge pool (Grant, 1996).

Eom *et al.* (2015) developed a model based on hypotheses. It was hypothesised that transformational leadership has a beneficial effect on the mechanisms that promote the development of shared domain knowledge. Also, they anticipated that these mechanisms

will serve as a precursor to knowledge integration. Furthermore, the mechanisms will benefit business-IT alignment.

Data were collected via a web-based questionnaire distributed to 69 organisations representing a variety of industries and sizes. 672 organisations received an email with the survey, resulting in a 10.3 percent response rate.

The quantitative analysis revealed a positive relationship between IT leadership behavior and mechanisms for developing shared domain knowledge. Additionally, the findings indicate a positive relationship between shared domain knowledge and knowledge integration mechanisms, implying that mechanisms for developing shared domain knowledge have a beneficial effect on business-IT alignment. Their study's findings demonstrate the critical nature of IT leadership and its ability to influence the structural and social dimensions of business-IT alignment. In practice, this study suggests that business executives must be aware that transformational leadership stimulates innovation, empower employees, and foster collaboration between the IT division and business units to achieve business-IT alignment. Additionally, business-IT alignment cannot occur solely through IT leadership; it requires organisational mechanisms that empower the IT division and business units to take responsibility for business-IT communication, domain knowledge development, and IT-involved business planning.

2.7 Implications of existing business-IT alignment models

Seminal authors explored the implications of existing business-IT alignment models and proposed an alternative theory with explanations for how business-IT alignment creates value in their article titled "Aligning business and IT strategies in multi-business organisations" (Reynolds & Yetton, 2015). The study employs path dependence and resource-based theory to shape IT strategic alignment for multi-business organisations (MBOs), with an emphasis on temporal alignment, functional alignment, and structural alignment. The study then applies four profit theories to develop a theory of value creation through three strategic drivers: competence, governance, and flexibility, using the Commonwealth Bank of Australia as a case study (Makadok, 2011). Reynolds and Yetton (2015) developed a theory called the "Functional and Structural Alignment Model in

MBOs" that is predicated on three central concepts: temporal alignment, functional alignment, and structural alignment.

Temporal alignment refers to the extent to which executive decisions affecting the organisation impact IT's flexibility. Executive decisions are not always made in advance. They then require an IT infrastructure that is responsive and adaptable. A successful IT strategy requires capabilities that can adapt to IT flexibility to meet stringent time alignment requirements.

Reynolds and Yetton (2015) define structural alignment, also seen as vertical alignment, as the process by which the strategies of SBUs is aligned with the business strategy. The business challenge is to achieve synergy between the business strategy and the SBUs strategies. Functional alignment, alternatively referred to as the horizontal alignment, is concerned with the alignment of the MBOs and IT strategies. The functional strategy's objective is to develop IT capabilities that enable and support business capabilities. Complexity arises when IT strategy must be aligned with all three levels of strategy.

MBO's functional and structural alignment model developed by Reynolds and Yetton (2015) addresses the challenges associated with temporal alignment, structural alignment, and functional alignment, with the goal of generating value in each of these three areas. The goal of this model is to maximise IT flexibility in response to market changes by establishing an effective governance structure that controls the allocation of IT resources to individual SBUs and ensuring that the IT strategy leverages business and SBU capabilities.

However, the relationship between the three types of alignment is not theorised in Reynolds and Yetton's study, and thus their impact on the organisation's performance is unknown. In addition, Reynolds and Yetton's model has not been empirically validated for correctness.

2.8 SUMMARY OF CHAPTER 2

This chapter surveyed the scholarship pertaining to the topic of the present study. The survey mainly focused on the business-IT alignment studies and related concepts,

models and methodologies used in others studies. The chapter also reviewed related works in order to establish what is known and what is still be known. The next chapter discusses the theories underpinning the present study.

CHAPTER 3: THEORETICAL FRAMEWORKS

3.1 INTRODUCTION

The preceding chapter provided a survey of the scholarship by reviewing literature that informed the present study. The survey examined business-IT alignment studies, as well as related concepts, theories, models, and methodologies used in previous research.

This chapter discusses and describes the theoretical frameworks which underpins the present study. The chapter then provides the conceptual research framework.

3.2 THEORETICAL FRAMEWORKS

This section discusses the theoretical frameworks that underpin the present study. A theoretical framework is a coherently constructed and interconnected set of concepts and premises derived from one or more theories created by a researcher to support a study (Varpio *et al.*, 2020).

The following frameworks and theories of business-IT alignment were also considered: BITA domains relating to EA, Theoretical framework of alignment between eGovernment and organizational performance, Cultural alignment model and BITA maturity framework, however, the frameworks below are used to underpin the study.

3.2.1 MIT90s framework

The MIT90s Framework is a model that represents a set of linkages between five essential structures, which are strategy, structure, technology, people, and management

processes (Coltman et al., 2015). The overall purpose of the MIT90s model, as shown in

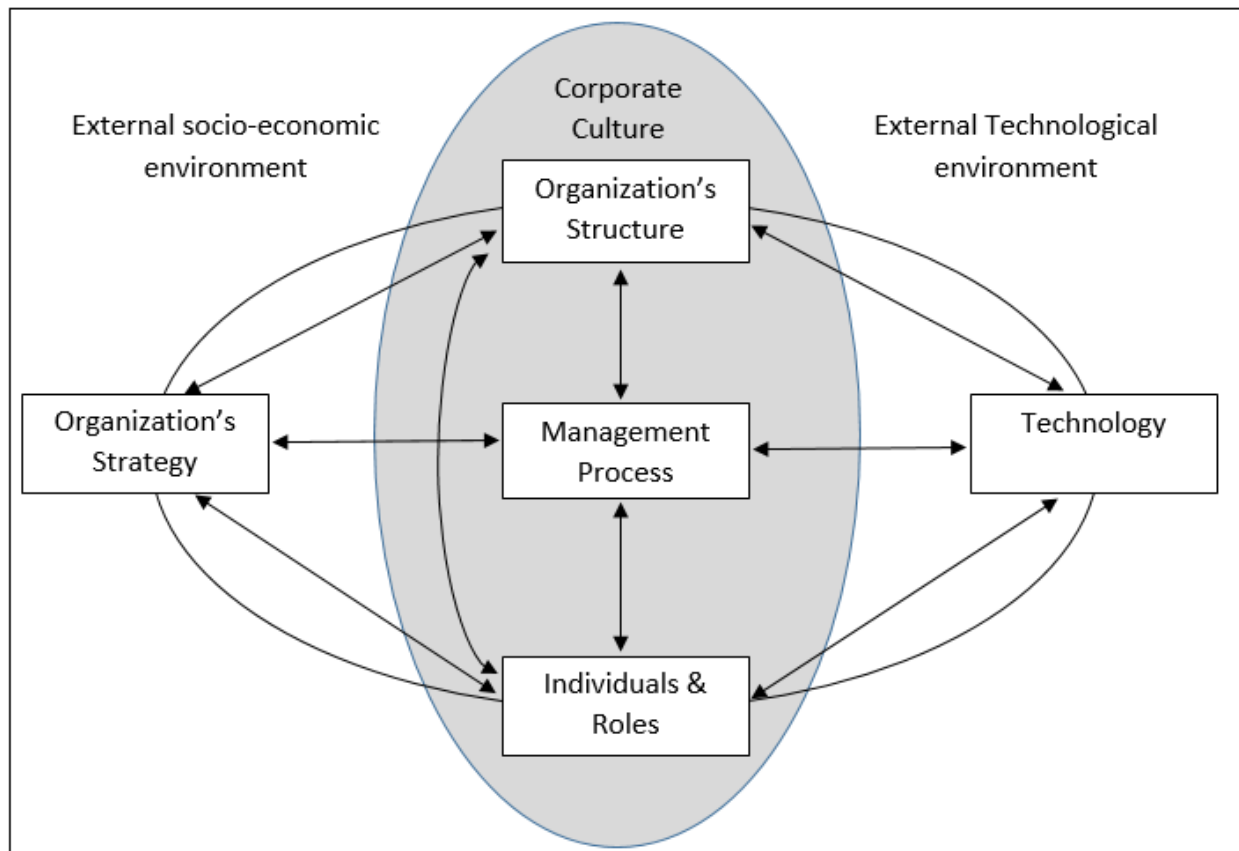


Figure 1, is meant to inspire professionals to appreciate the dynamics of change and the acquisition of new technologies (Liao & Teo, 2019).

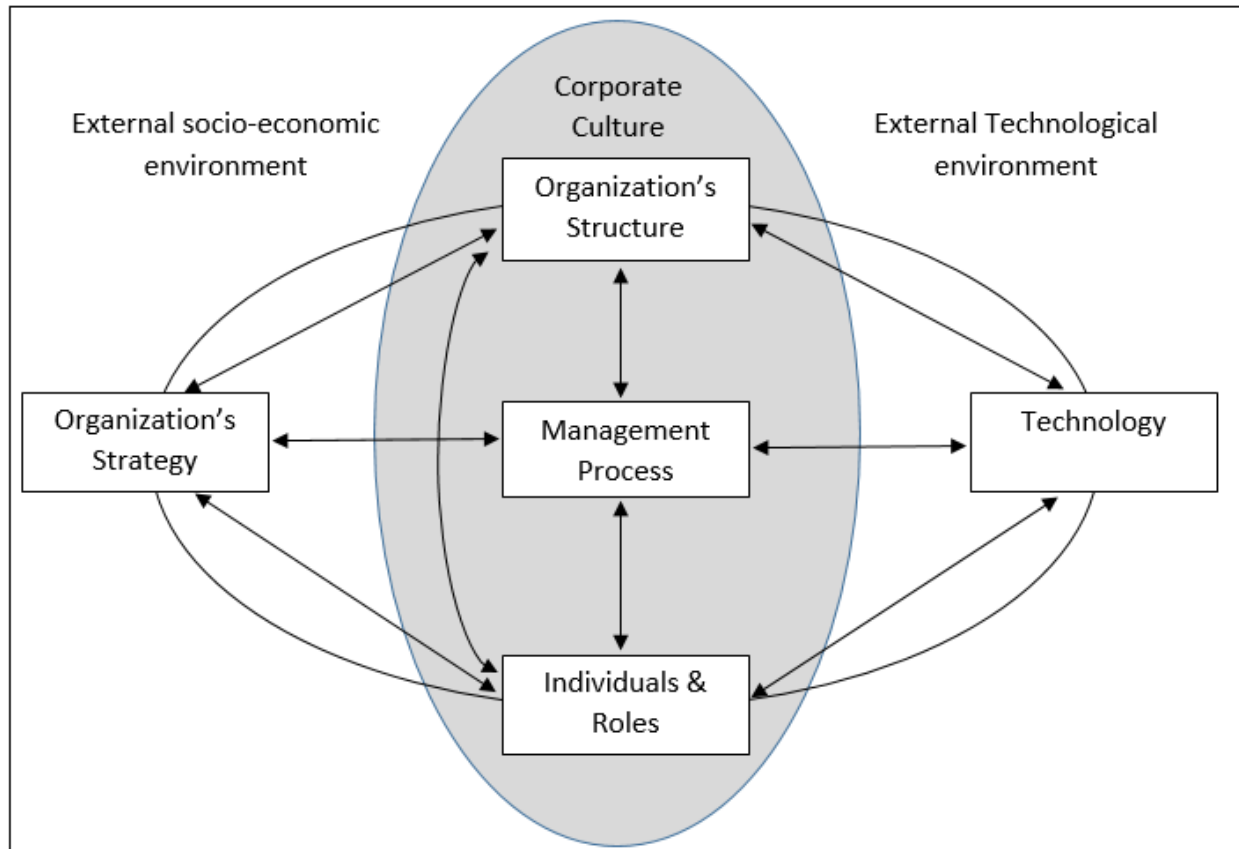


Figure 1: MIT90s framework (Liao & Teo, 2019)

The MIT90s framework describes how to achieve business-IT alignment by leveraging culture, external factors, IT knowledge and information, and IT success (Liao & Teo, 2019). It was derived from Leavitt's 1965 model, titled the Diamond theory (Rockart & Morton, 1984). The Diamond theory consisted of four interconnected constructs: the organisation's tasks, its people, its structure, and its technology. The construct task, in diamond theory, referred to the organisation's objectives and its operational efforts to achieve those objectives.

3.2.1.1 Organisational Strategy

The construct 'task' was changed to 'organisation's strategy' in the MIT90s framework to refer to the business strategy and the overall activities undertaken within the organisation to achieve the strategy's objectives (Rockart & Morton, 1984).

3.2.1.2 Corporate Culture

Corporate culture was added as a new construct to the MIT90s framework to incorporate the Diamond theory's people and structure constructs. Management processes construct was further added to the MIT90s framework and incorporated under corporate culture. Organisation's structure, as in the Diamond theory, refers to interactions, communication, practices and cooperation amongst workers (Liao & Teo, 2019). The organisational structure of any company is a critical part of the culture of the that particular entity (Rockart & Morton, 1984).

Management processes refers to the procedures followed by managers, such as meetings, planning, discussion, and evaluations. The processes are accessible to all levels of the organisation. Each department has procedures and plans in place to carry out its functions. The processes encapsulate much of what the organisation does. Management processes are central to the model because they bind it together through meetings and plans used to develop the organisation's strategy (Rockart & Morton, 1984).

In the MIT90s framework, the Diamond theory's 'people' construct was replaced by 'individuals and roles', which refers to workers, their positions, duties, abilities, expertise, and characteristics.

3.2.1.3 Technology

The construct 'technology', focuses on enabling employees to perform their individual roles using computer applications amongst other tools (Liao & Teo, 2019). The MIT90s framework allows for the analysis of dynamics and the interactions between strategy, structure, management processes, people and technology. It help with the understanding of the business-IT alignment through a look at these constructs (Hsiao & Ormerod, 1998).

3.2.1.4 Socio-economic and technological environment

There are two prime influential aspects external to the organisation which affect alignment, these are the socio-economic and technological environments. These two constructs affect the organisational strategy and technology directly whilst the other constructs affect them indirectly (Rockart & Morton, 1984).

3.2.2 Strategic Alignment Model

The Strategic Alignment Model (SAM), which is based on the MIT90s framework, is widely used to align business and information technology (Amarilli, 2014; Reynolds & Yetton, 2015). It has been widely cited for its intuitively compelling argument establishing the necessity and importance of business-IT alignment to improve organisational performance (Henderson & Venkatraman, 1999). SAM proposes four alignment constructs for business-IT alignment: business strategy, business infrastructure and processes, information technology strategy, and information technology infrastructure and processes (Bhattacharya, 2018). These constructs are connected by two concepts, which are the functional integration and strategic alignment (Kekwaletswe & Mathebula, 2014). SAM's intention is to find a way to think about IT strategy and whether the business strategy informs the IT strategy or vice versa, it was never envisioned as a method to measure business-IT alignment (Coltman *et al.*, 2015). The Figure 2 is a representation of SAM

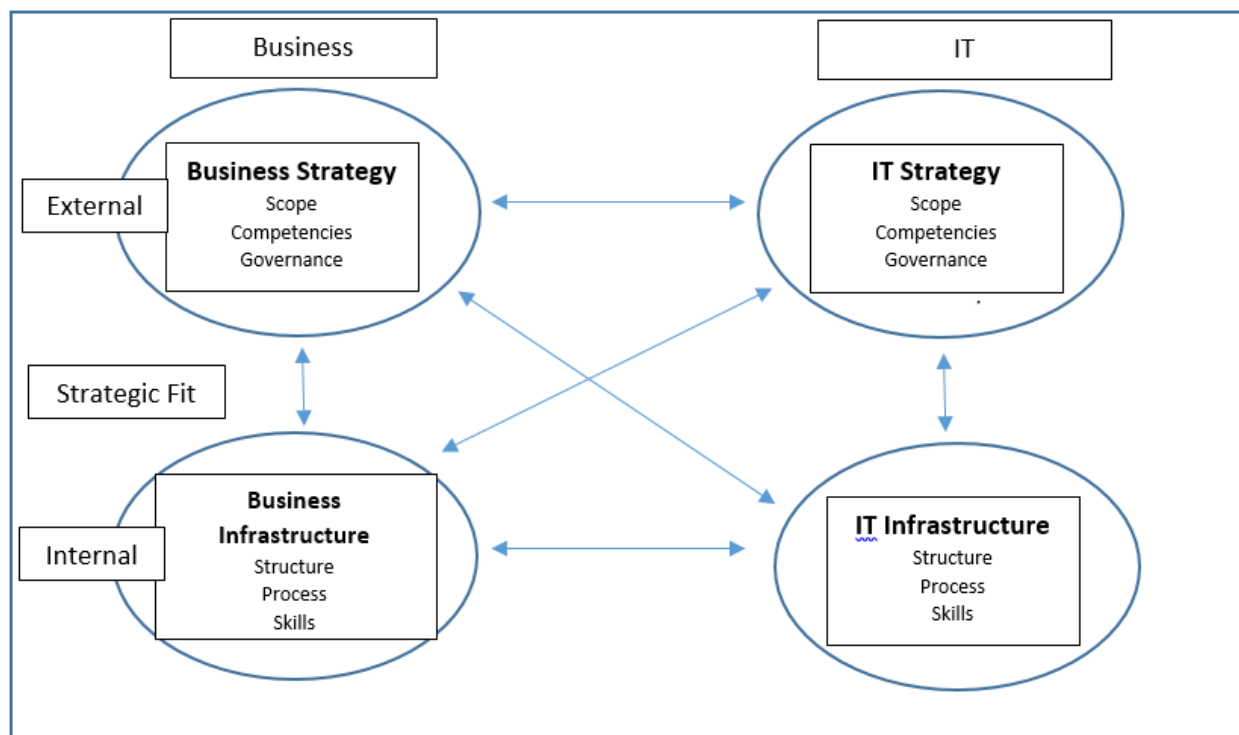


Figure 2: Strategic Alignment Model (Henderson & Venkatraman, 1994)

3.2.2.1 Business Strategy Construct

SAM was conceptualised by researchers as early as 1994 (Henderson & Venkatraman, 1994). SAM has the following constructs: business strategy, as an overarching concept, is concerned with three central elements: business scope, distinct competencies, and business governance. Business scope refers to the range of products and services available. Distinctive competencies refer to the strategy-related characteristics such as pricing, quality, value-added service, and superior distribution channels that contribute to a competitive advantage over the competition. Business governance encompasses a range of activities such as strategic alliances, joint ventures, and licensing that have a direct impact on the structural mechanisms used to organise business operations.

3.2.2.2 Organisational Infrastructure and Processes Construct

The organisational infrastructure and process construct takes into account the organisation's administrative infrastructure. This includes the organisational structure, roles, and reporting relationships, the processes for performing critical activities such as workflow and information flow, as well as the skills and individual capabilities (Henderson & Venkatraman, 1994).

3.2.2.3 IT Strategy Construct

IT strategy construct refers to IT scope, system competencies and IT governance. IT scope refers to the various types and configurations of IT systems and capabilities. System competencies focusses on system reliability, system flexibility and interconnectivity that better support the business strategy. IT governance is a broad term that encompasses joint ventures, long-term contracts, equity partnerships, and collaborative research and development aimed at enhancing IT capability and system infrastructure (Henderson & Venkatraman, 1994).

3.2.2.4 IT Infrastructure and Processes Construct

As with organisational infrastructure and processes, this construct encompasses architecture, processes, and capabilities. The architecture in this context refers to the application, data, and technology selections made. Processes refer to the work processes

that are central to operations, including IT infrastructure development and maintenance, system development and maintenance, and system monitoring and control. Skills refer to the knowledge and abilities necessary to manage information technology infrastructure efficiently (Henderson & Venkatraman, 1994).

SAM successfully explores the business-IT alignment research field including the business and IT strategy but lacks the practicality necessary for formulating an actual IT strategy (Spósito *et al.*, 2016). According to some researchers, SAM is too broad and does not provide managers with practical tools for making sound business decisions (Amarilli, 2014). Additionally, it ignores the fact that the corporate-level business-IT alignment does not include SBU capabilities (Reynolds & Yetton, 2015). SAM does not provide a mechanism for achieving a high degree of business-IT alignment (Bhattacharya, 2018). SAM is well-known for being abstract and conceptual in nature; it is therefore insufficient for analyzing and assessing business-IT alignment in practice (Jonathan *et al.*, 2019).

3.2.3 Social Alignment between Business and IT Model

The social alignment dimension has received the most attention over the last 15 years with business-IT alignment studies. The term 'social alignment' refers to the relationship and shared understanding between IT and the business units. The Figure 3 is a representation of the Social Alignment between Business and IT model.

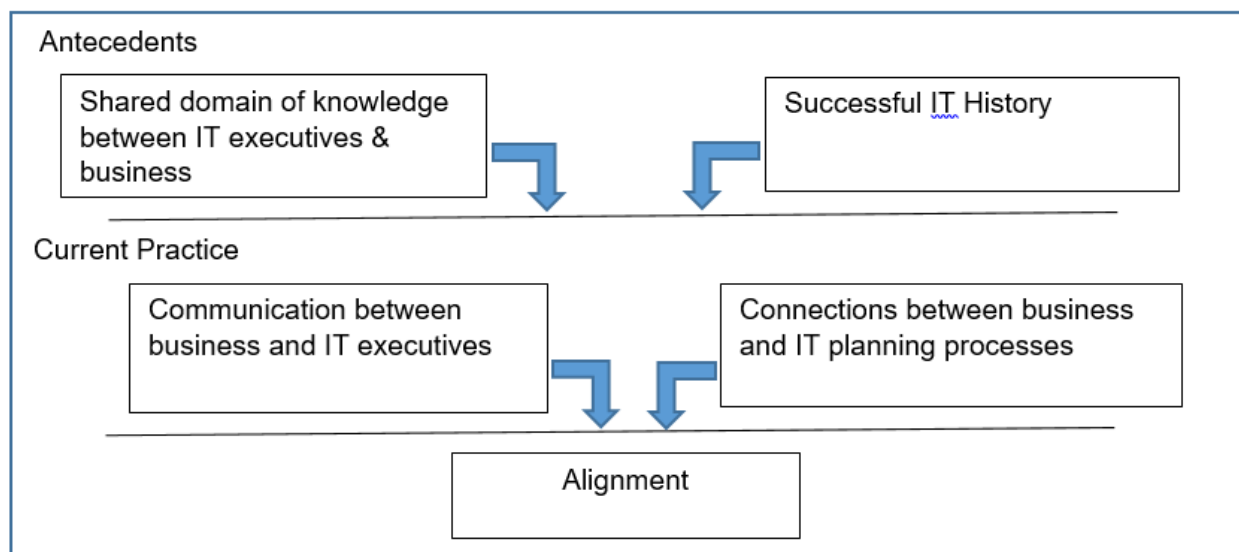


Figure 3: Social Alignment between Business and IT (Reich & Benbasat, 2000)

The social alignment dimension has four enabling aspects, which are: shared domain knowledge between business and IT executives, IT implementation success, communication between business and IT executives, and connections between business and IT planning processes (El-Mekawy *et al.*, 2015; Wagner, 2014).

Researchers investigated the social dimension of alignment and developed a model for aligning business and information technology strategies (Reich & Benbasat, 2000). In their model, they use the following constructs to measure the impact they have to alignment: shared domain of knowledge, successful IT history, communication and connections. They have found that shared domain knowledge had a positive influence on business-IT alignment. Also, they have noted that researchers devote efforts towards it (Reich & Benbasat, 2000).

3.2.4 Strategic Alignment Maturity Model

The majority of business-IT alignment models are industry-specific and cannot be easily adapted to other industries. As well, these models are static and do not provide indicators of how well or poorly strategies are aligned (Jonathan *et al.*, 2019). The Strategic Alignment Maturity Model was developed by Luftman (2004) to provide measurements that can assist organisations to determine the level of business-IT maturity (Alghamdi & Sun, 2017), see Figure 4.

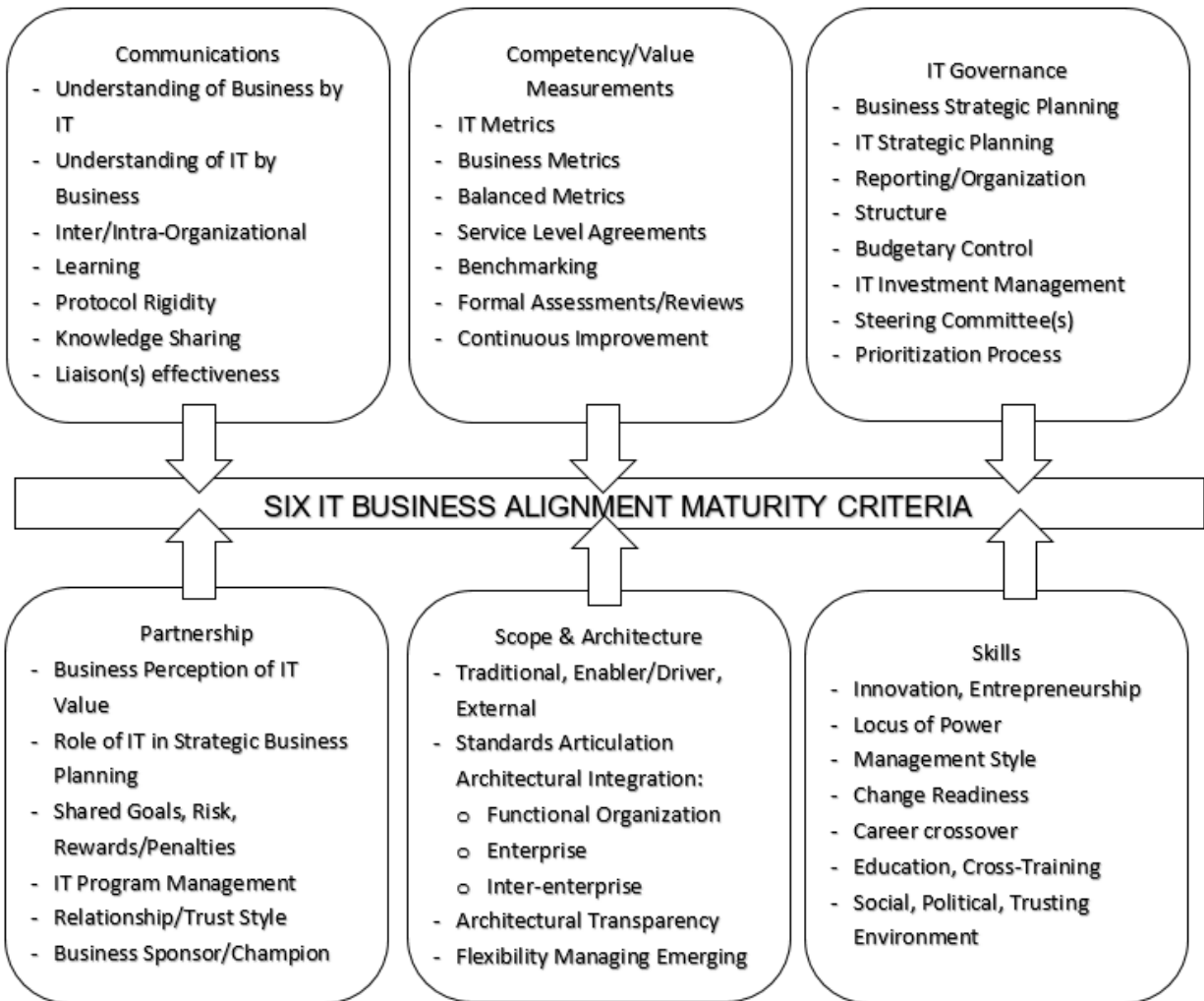


Figure 4: Strategic Alignment maturity Model (Luftman, 2004)

According to SAMM there are six principles used to measure the maturity of business-IT alignment. These criteria are:

- Communication
- Competency/Value Measurements
- Governance
- Partnership
- Technology Scope
- Skills

The SAMM has the following main constructs: 1) Communication, which denotes the sharing of ideas, information and knowledge between IT human resources and business or IT system users; 2) Competence/Value Measurement, which refers to how organisations measure the contribution of IT in a way that is accepted by IT and all stakeholders (Jonathan *et al.*, 2019); 3) IT governance raises the question of how IT decisions are taken in an organisation. IT governance is critical for establishing the value of IT and also to determine how IT decisions are made; 4) Partnership maturity refers to the relationship between IT and business. Partnership creates mutual trust between IT and business; 5) Dynamic IT scope refers to an organisation's ability to fund IT and maintain an adaptable and flexible IT infrastructure capable of accommodating new and emerging IT solutions; 6) Finally, IT and business skills development refers to the enhancement of IT personnel's capabilities to ensure the success of business-IT alignment.

The dimensions outlined above are required for determining the degree of business-IT alignment. Additionally, a review of the literature indicates that more than 55% of articles agree on these criteria as the best factors to use to measure alignment (Muñoz & Avila, 2018).

3.2.4.1 Communications Maturity

Communications refers the interaction amongst IT and business functions in how they share information, concepts, ideas and insights. An open interaction allows business functions to comprehend information technology strategies, IT environment and how IT operates, as well as IT risks and priorities. In exchange, the IT division obtains inside information about the business's objectives, pain points, and priorities (Luftman *et al.*, 2017). This dimension encapsulates the mutual understanding of IT and business functions, as well as the approaches used to facilitate that understanding (Boström & Celik, 2017). Communication enables the efficient implementation and organisation of activities between IT and business, whereas the lack of coordination contributes to the lack of interest in IT and the resulting missed opportunities (Luftman *et al.*, 2017).

3.2.4.2 IT Competency/Value Measurements Maturity

The dimension value measurement defines the practices and practical IT processes used by an organisation to communicate the value of IT to the business (Boström & Celik, 2017). IT Value is demonstrated when metrics are used to indicate IT's contribution to the organisation. IT Value can be measured by looking at return on investment and activity based costing systems of measurements (Luftman *et al.*, 2008). These are simple-to-understand business metrics. Often, the IT division employs difficult-to-understand metrics that fall short of demonstrating the value of IT to the business. Instruments such as service level agreements (SLA) can also be helpful (Luftman, 2015).

3.2.4.3 Governance Maturity

Governance refers to the leadership of the IT department. Who are the individuals who make critical decisions regarding IT projects, budgets, and overall direction (Boström & Celik, 2017). The leadership establishes the direction of IT, resource allocation, and activity prioritisation. Additionally, the leadership ensures alignment with the business strategy (Luftman *et al.*, 2017). Leadership examines the strategic, tactical, and operational facets of the partnership between IT and business (Luftman *et al.*, 2008).

3.2.4.4 Partnership Maturity

Partnership maturity assess the working relationship between the IT division and business. Maturity examines how the IT division is involved in the development of the business strategy and the level of trust between the business and IT (Luftman *et al.*, 2008). The maturity of a partnership refers to how other business units and the IT division perceive one another. When business units view the IT division as a valuable and necessary partner in achieving their objectives, then the partnership mature (Boström & Celik, 2017).

3.2.4.5 Technology Scope Maturity

Technology scope maturity evaluates the IT resources' suitability to support business processes and changing requirements. It assesses the IT infrastructure's adaptability by examining how transparent it is to internal and external customers. An organisation's

technology is mature when it can assess and implementation new technologies efficiently. The technology must be adaptable to business requirements and capable of supporting business processes and strategies (Luftman, 2015).

Technology scope maturity refers to an IT infrastructure that is dynamic and adaptable to meet the needs of internal and external customers. Dynamism is critical because organisations frequently expand their scope, necessitating the IT infrastructure to adapt. The scoping activities include, but are not limited to, mutual technology growth criteria, norm articulation, architectural integration and technical clarity, agility concepts, and network versatility activities (Luftman *et al.*, 2017).

3.2.4.6 Skills Maturity

Skills maturity refer to continuous ability for business to improve their ability to use and take advantage of technology and the willingness to upskill IT human resources. Additionally, it refers to the organisation's ability to recruit the right talent, retain critical talent, reward excellent performance, provide performance reviews and manage career development. It also refers to how organisations deals with innovation. The business must strike a balance between skill capacity and investment in the IT division (Luftman *et al.*, 2017). Individuals' skill maturity reflects their personal accountability for bringing innovation to the business. Also, the organisation must be able to quickly learn from their mistakes and capitalise on the entrepreneurial spirit of their resources (Luftman, 2004). The IT division lacks interrelationships within the domains that define business-IT alignment and is therefore dependent on specific organisations (Tapia *et al.*, 2008).

Figure 5 shows the Business-IT alignment and its influence on company performance model.

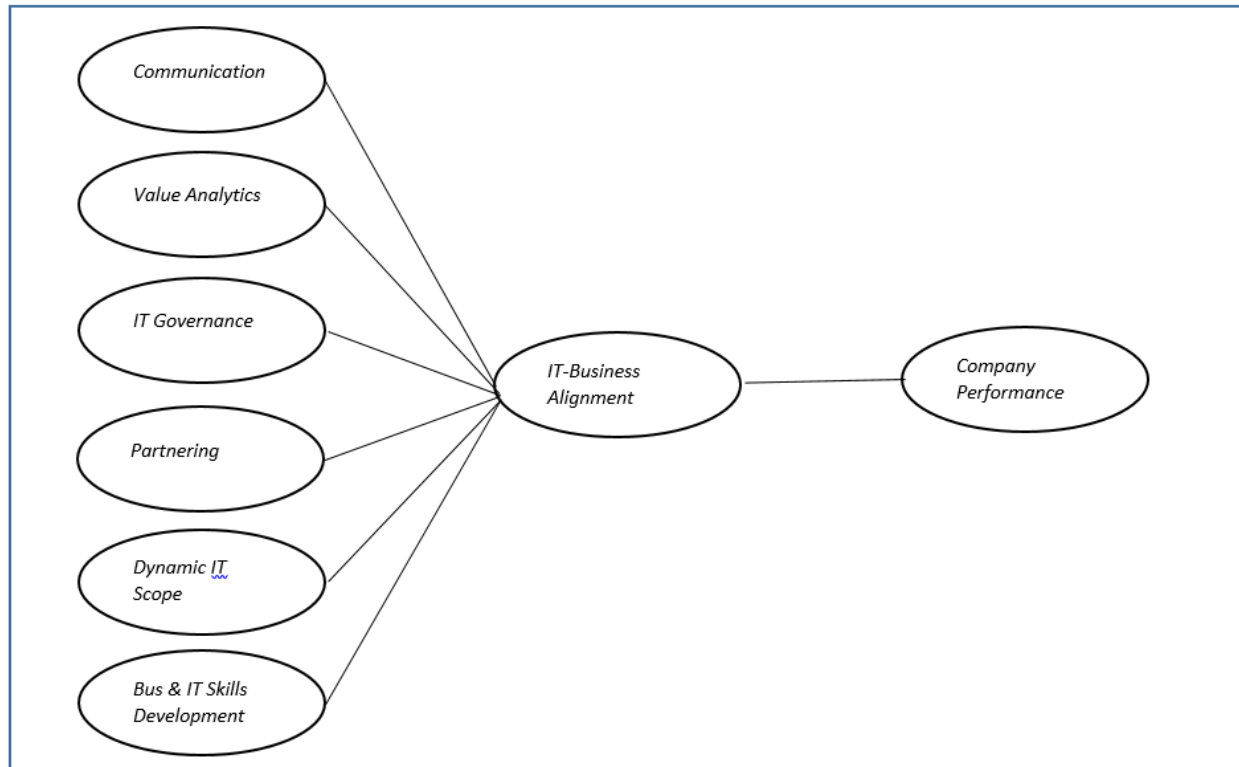


Figure 5: Conceptual Model for business-IT Alignment and its influence on company performance (Luftman et al., 2017)

The model emphasises that communication activities, value analytics activities, IT governance activities, partnership activities, IT scoping activities and positioning and balancing business and skills in the IT division all forms a part of the Business-IT alignment.

3.2.5 IT Capability Model

The IT capability model has the following constructs; IT processes, IT strategy, IT Organisation and IT infrastructure as shown in Figure 6.

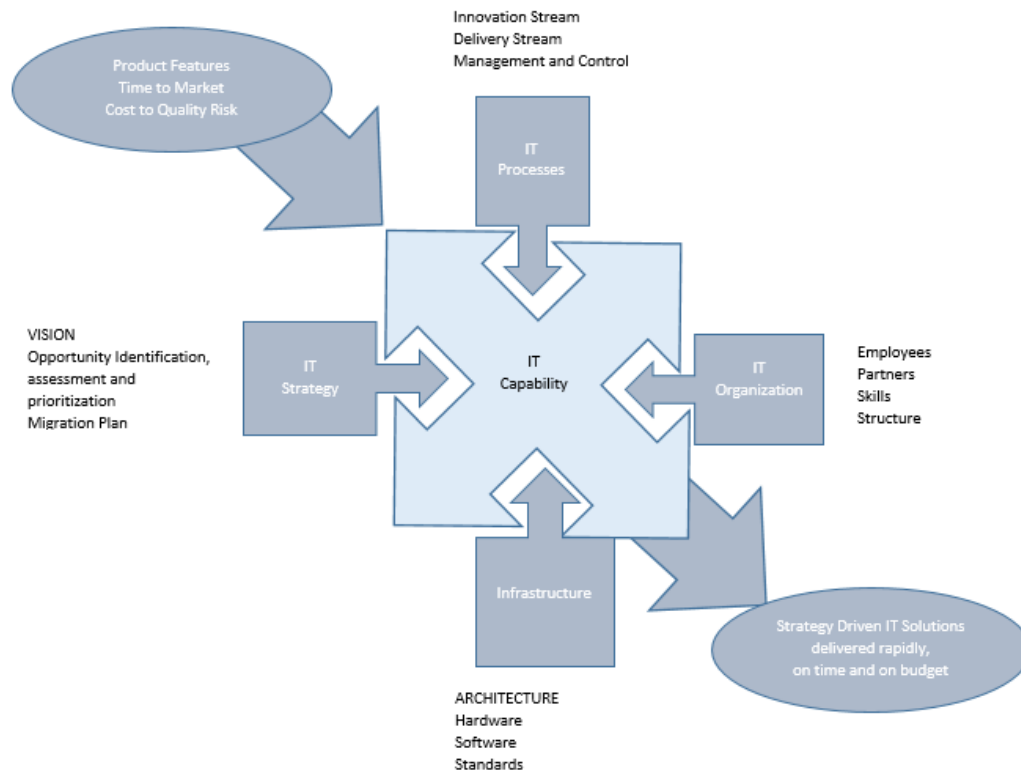


Figure 6: The IT Capability Model (Modiba et al., 2020)

IT capabilities are tools for enhancing an organisation's economic performance through the redesign of business processes. IT capabilities explores relationships of capabilities such as the IT human resources skills and structure, IT management capabilities with regard to planning and identifying opportunities, IT infrastructure flexibility, and IT processes. IT capabilities are inextricably linked to an organisation's performance (Kim et al., 2011). IT capabilities are an organisation's inherent capacity to investigate the use of technology and services to gain a competitive advantage over time (Feeny & Willcocks, 1998).

3.2.5.1 IT Processes

IT processes define current practice patterns and methods for an organisation to maintain expertise. These are also included as evidence of information technology activities that are part of information technology procedures. IT processes contribute to the quality and effectiveness of internal management of organisational and production activities.

Additionally, integration encompasses information technology processes and frameworks for knowledge sharing in knowledge-intensive businesses (Butler & Murphy, 2009).

3.2.5.2 IT Organisation

The IT resources available to an organisation are a result of the organisation's existing IT system, alliances, expertise, and awareness. Years of IT experience enable management to make prudent and realistic decisions, contributing to the company's growth, and skills in the IT division enable them to recognise opportunities. IT capabilities are derived from explicit and implicit business knowledge and technical skills in information technology (Butler & Murphy, 2009).

3.2.5.3 IT Infrastructure

The IT infrastructure serves as the backbone of business operations. Flexibility of the IT architecture enables IT to rapidly develop, maintain, and implement new IT infrastructure components in response to changing market conditions and business strategies (Kim *et al.*, 2011). IT infrastructure refers to the hardware, software applications, network, database, and tools used in IT (Saraf *et al.*, 2007).

IT infrastructure supports computer frameworks, legislative and environmental requirements, goods and facilities, network customers, and their clients' needs (Misra *et al.*, 2009). Organisations require an IT technology network that is scalable, well-connected, and capable of delivering required knowledge at the appropriate time (Lui & Piccoli, 2010).

3.2.5.4 IT Strategy

An effective IT strategy should enable the organisation to capitalise on new business opportunities by leveraging consumer data and identifying strategic ways to increase customer loyalty (Piccoli & Watson, 2008). A well-crafted IT strategy includes elements that emphasise the importance of capability development and ensure that factors necessary for competency development are in place. The IT strategy should foster capability development, paving the way for the development of a vision that fosters

innovation success. Success is determined by the ability to translate IT strategy into action (Ritter & Gemünden, 2004).

When an organisation's IT capability falls short of providing adequate support for its business strategy, an IT strategy deficit occurs. The organisation is negatively affected in this case by its own IT incapacity. Thus, a strategy deficit occurs when the business strategy of the organisation fails to provide a vision for the IT strategy. In this case, the organisation is unable to leverage its existing information technology capabilities (Tallon & Kraemer, 1999).

3.3 CONCEPTUAL RESEARCH FRAMEWORK

South Africa is a unique country with a unique political history, culture and social makeup and the existing frameworks for business-IT alignment do not address the unique challenges confronting South African development banks. There is a gap in the literature on business-IT alignment because majority of models do not incorporate both the strategic and operational aspects of alignment (Charoensuk *et al.*, 2014). The conceptual research framework below is meant to guide the present study in addressing the knowledge gaps identified in the introductory chapter.

According to the literature search using keywords, the existing frameworks were found to not address the problems and issues in the context of a South African development banks adequately. The keywords used to search various databases were business strategy, IT strategy, business-IT alignment, business and IT/IS alignment, corporate strategy, and BITA. Thus the conceptual research framework for business-IT alignment for South African development banks is shown in Figure 7 below.

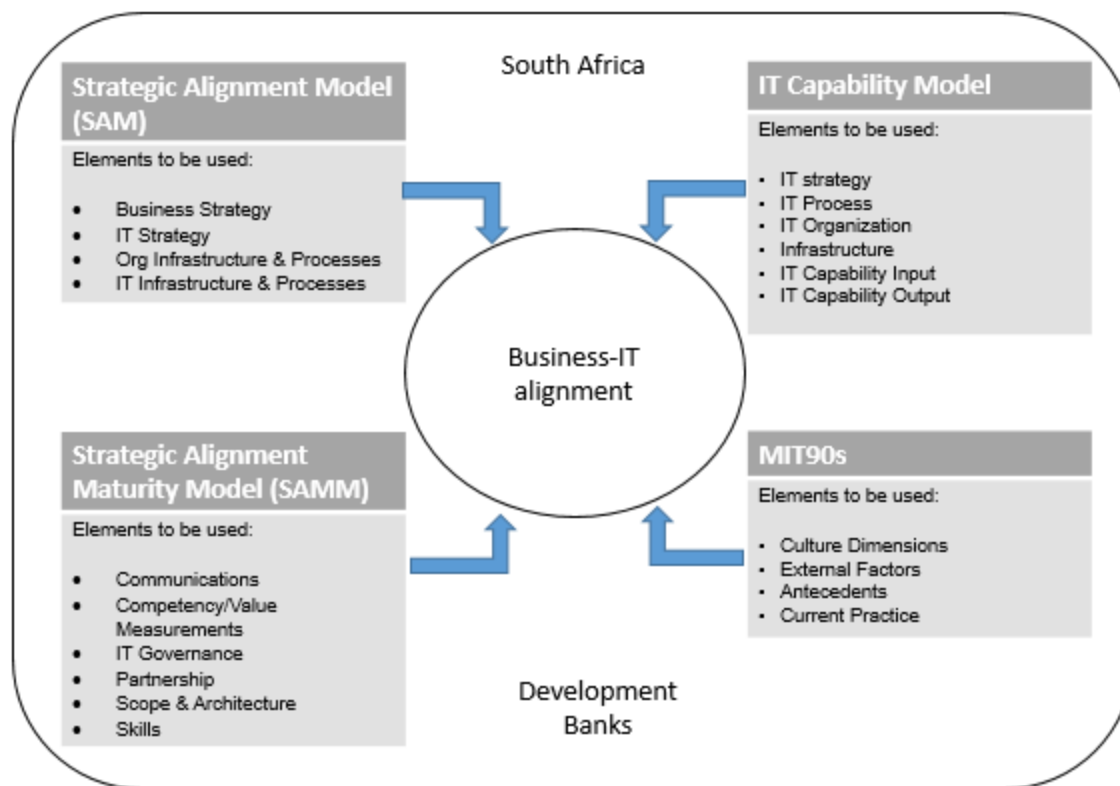


Figure 7: Conceptual Research Framework for Business-IT alignment in South African Development Banks

The theories are triangulated because each one of them brings an important dynamic to alignment of business with IT. Each theory strongly supports and focusses on different aspects of the business-IT alignment plan for South African development banks. Table 9 describes the focus and advantages of the theories.

Table 9: Elements of the Conceptual Research Framework contextualised

Model	Business-IT alignment focus/advantages
Strategic Alignment Model	- The formulation of the business strategy and its scope, distinctive competencies and governance in development banks of South Africa - The formulation of the IT strategy and its technology scope, systemic competencies and IT governance in development banks of South Africa

	• The articulation of the business administrative structure, processes that support and shape the ability of the firm and the skills required within South African development banks • The choices that define the IT infrastructure, the portfolio of software applications, IT processes and skills in the IT division required to execute the business strategy of South African development banks
IT Capability Model	• Articulates the vision and the opportunity identification elements of the IT strategy of development banks in South Africa • Describes the capability of the IT division to deliver on the business strategy with regards to the IT management and its controls, IT processes and the innovation initiatives of development banks in South Africa. • Evaluates the IT strategy inputs such as the business strategy and the output of the strategy with is an IT driven strategy for development banks in South Africa
MIT90s	• Interrogates how culture can affect the alignment of business and IT in a south African development bank • Interrogates how external factors such as the economy and technology can affect the alignment of business and IT in south African development banks • Interrogates how lack of sharing of information and knowledge about IT success or failure to deliver can affect the alignment of business and IT in south African development banks • Interrogates how lack communication and collaboration of business units and business units and IT can affect the alignment of business and IT in south African development banks

Strategic Alignment Maturity Model	The measurement of the maturity level of South African development bank's business-IT alignment with regards to: • Communications • Competency/Value Measurements • IT Governance • Partnership • Scope & Architecture • Skills

3.4 SUMMARY OF CHAPTER 3

This chapter discussed the information systems theories underpinning the present study. The MIT90s Framework, the SAM, the Social Alignment of IT and Business, the Strategic Alignment Maturity Model, and the IT Capability Model are the theories informing and guiding the present study. The chapter then provided the conceptual research framework that guided the present study. A contribution to the body of knowledge could be achieved by triangulating theories. The next chapter describes the research methodology followed to achieve the objectives of the present study.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

The previous chapter discussed the theories that underpin the present business-IT alignment study and subsequently a conceptual research framework for the study was provided. This chapter describes the research methodology followed to address the research problem. It is outlined as follows; the research paradigm, approach, and strategy are discussed. The chapter then describes the research design used to conduct the present study. This include the unit of analysis, the study population, the sampling method, data collection, and data analysis. .

The purpose of the study was to explore and to describe business-IT alignment in South African development banks. The research problem in South African development banks is that despite the investments in information technology the return on the investment is not realised. It is inferred that this is due to the business-information technology misalignment, which result in the ineffectiveness of IT enabling business processes.

4.2 ONTOLOGY

Ontology exposes the researcher's assumptions about the nature of the phenomena under investigation (Caldeira, 2016). Ontological opinions causes us to make epistemological assumptions, in that our descriptions of how people learn about the social world are contingent on our perceptions of the world (Gichuru, 2017).

The objects of nature exist independently of our ideas and our conceptions of their existence, and they behave in accordance with their causative powers. This is a perspective from a Realist Ontological point of view. According to realist ontology, the purpose of science is to uncover and clarify the reproductive mechanisms and structures that give rise to perceived phenomena (Rogers, 2015). In other words, things exist and behave independently of the actions of human actors and their perceptions. Human actors can only be aware of and describe them. According to realism, the ultimate subject of scientific inquiry exists and behaves independently of scientists, and the activities and science are primarily concerned with the existence and behavior of things. Realism offers

a range of perspectives on reality and society, as well as on how to comprehend them (Caldeira, 2016).

However, the Relativist Ontological perspective believes that truth and reality can be understood only through the interpretation of the object under study. And this truth is based on the study's context (Caldeira, 2016). Simply put, truth is relative. According to those who embrace a relativist approach, there is multiple realities in existence and there is no notion of the existence of only one truth. They believe that the truth can change based on the context. For relativism ontology, contextualisation is important in research (Smith & McGannon, 2017). Reality is not a closed-system, it is an open-system which is not constant but changes according to context. It is not only complex, but also temporal (Matteucci & Gnoth, 2017).

Constructivism and relativism ontology share the view that reality is conceptualised through socially deducted interpretation and its meaning is discovered through human interaction. A constructivist researcher uses interviews as a research method to generate qualitative data and adopts a subjectivist epistemology in doing so (Sparkes, 2015). It is further suggested that because social constructivism's philosophical assumptions are incompatible with quantitative measurements of variables, social constructivism tends to employ qualitative research methods. In addition, constructivists argue that the ultimate goal of research should be to improve contextualised understanding (Matteucci & Gnoth, 2017).

Constructivist grounded theorists get as close as possible to their study and the data they generate. They analyse data line by line and word by word to generate codes that describe actions. They become participants by understanding meanings and actions that are connected to larger discourses and social structures about which they may be unaware. The researcher becomes ingrained in the world they study.

The present study followed a relativist ontological and a constructivists philosophy, both of which assert that there is no single reality or truth, but that context is critical. This is the best way to uncover and clarify the reproductive mechanisms and structures that give rise to perceived phenomena in development banks of South Africa. In the present study,

constructionist theory is applied to understand the business-IT alignment truth and reality through the interpretation of a phenomenon that exists in its own context.

4.3 EPISTEMOLOGY

Epistemology refers to the researcher's perspective on the methods by which they acquires knowledge about the subject (Caldeira, 2016). In other words, how the researcher comes to his conclusions (Kankam, 2019). Epistemology is defined as the nature of knowledge that particularly deals with how we get to know what we know (Walliman, 2017). According to epistemology, there is a social reality that can be discovered through experience and observation. It also means that “the nature of human knowledge and understanding that can possibly be acquired through different types of inquiry and alternative methods of investigation” (Antwi & Hamza, 2015). Constructivist epistemology is interpretive, which means that the researcher uses their intuition and interacts with the research rather than be outside and non-interacting with the research (Yazan, 2015).

Epistemology that should guide the qualitative case studies is constructivism because the philosophical premise on which all forms of qualitative research is based is the position that reality is created by humans interacting with their social world (Yazan, 2015). Thus, reality is not an objective entity but rather there are multiple interpretations of reality. Taking this philosophical assumption into consideration, the principal goal of qualitative researchers is to understand the meaning or the knowledge constructed by their subjects, the people. In other words, what qualitative researchers are truly interested in is how people make sense of the world or reality and their experiences within it (Yazan, 2015).

There is inconsistency when epistemology and ontology are combined due to their incompatibility. Combining ontological realism and epistemological constructionism is untenable and unsustainable. These two are incompatible (Smith & McGannon, 2017).

Epistemology is the relationship between the researcher and what is known, while ontology refers to the nature of reality and the researcher's assumptions about its nature (Smith & McGannon, 2017). Ontology is concerned with the nature of perceived or known

social objects and the researcher's perception of reality, whereas epistemology is concerned with the knowledge required to resolve the research problem (Mayer, 2015).

Researchers are required to discuss not only their research approach, but also the ontology and epistemology that underpin their work. The clarification assists the readers, assessors and reviewers of the work to evaluate if the research is ontologically and epistemologically cohesive from beginning to end (Smith & McGannon, 2017).

A constructivist researcher uses interviews as a research method to generate qualitative data and adopts a subjectivist epistemology in doing so (Sparkes, 2015). The best way to study and research business-IT alignment is subjectively. As a result, this present study adopted a subjectivist epistemological philosophy.

Interpretive epistemology is applied in this present study because reality is discovered through experience, observation and alternative methods of investigation.

4.4 RESEARCH PARADIGM

Research paradigm is a simple set of philosophies that guides action (Matteucci & Gnoth, 2017). A research paradigm is a fundamental model that reveals academics' in-depth knowledge of what they see, as well as their understanding of the study model (Kankam, 2019). Research paradigm is a collection of core beliefs and a worldview that defines the world's nature, our place in it, and our connection with the world and its components (Sparkes, 2015).

The research paradigm directs and propels the study in a particular direction. It establishes fundamentally distinct perspectives on the world and research methods. The research paradigm is critical because it establishes the researcher's perspective on the world; it establishes the sort of research questions to be used in various studies; it establishes the methodology to be used and the manner in which the findings are presented (Heeks & Wall, 2018). The term "research paradigm" refers to an all-encompassing structure of interwoven practice and thinking processes that describes the nature of inquiry along three dimensions, namely ontology, epistemology and methodology. The responses to questions about these three philosophies establish an

interpretative framework that guides the research process, which encompasses strategies, methods, and analysis (Antwi & Hamza, 2015).

The four broadly used paradigms are positivism, interpretivism, pragmatism and critical realism (Kankam, 2019). The present study analysed the four opposed paradigms of positivism, interpretivism, pragmatism, and critical realism to find which one was most appropriate for this research. It is critical to comprehend these paradigms and choose which one is most essential to the study to inform the research design, technique, and analysis (Ryan & Sfar-Gandoura, 2018).

4.4.1 Positivism

Positivism is formed on the assumption that the social world exists and that it can be measured through objective methods and not by mentally constructed reflection and intuition (Caldeira, 2016). The positivistic research paradigm reinforces a quantitative methodology (Antwi & Hamza, 2015). The positivistic ontology considers that truth and reality are objective, palpable, and unchanging. According to a positivistic ontology, there is just one truth. It further considers the separation between the researcher and that which is being studied. A researcher is expected to find the truth or reality and not to create the truth or interpret reality. The subject and the object are separate and independent (Peng, 2019). The positivist research paradigm, which is the realist/objectivist ontology supports quantitative research approach and methodology (Antwi & Hamza, 2015). As a result, the positivist research paradigm was deemed inappropriate for this study. Furthermore, according to positivistic ontology, the truth is just one and does not change according to context. In this study, the phenomena of business-IT alignment is viewed through the context of South Africa as a country with unique political history, culture and social makeup.

4.4.2 Interpretivism

Interpretivism views the social world through a distinctive lens of intentionality rather than causality, of 'becoming' rather than 'being,' and relationships and interactions rather than social entities (Packard, 2017). An interpretivist perspective views the social world in a relativistic way and this world can only be understood by interpreting the events which

are to be studied. Interpretive perspective of research accept that knowledge of reality or truth is a social construction by humans and academics, and therefore it is subjective. In total contrast to the expectations of positivism, interpretive ontology states that reality is not objective and cannot simply be discovered for the purpose of replication and generalisation (Caldeira, 2016).

4.4.3 Pragmatism

Most mixed methods researchers settle the research paradigm war by embracing the pragmatism research paradigm as their philosophical stance, therefore giving rise to another paradigm apart from the much used positivism and interpretivism. The pragmatism paradigm is ideally suitable for mixed method research for various reasons. It recognises both the natural-physical world and the emergent social- psychological world and compliments both realism and relativism-constructivism in a way that does not recognise one perspective as more importance than the other. It provides a way in which realist and relativist-constructivist stances can be made to coexist peacefully. The pragmatic epistemological stance that it adopts is that knowledge is seen as both constructed and based on the reality of the world we experience and live in (Doucerein *et al.*, 2016).

4.4.4 Critical Realism

Peng (2019) defines critical realism as a “relatively new philosophical approach which combines a realist ontological perspective regarding theory of being with a relativist epistemology in relation to theory of knowledge”.

Critical realism is relatively complex. It combines a realist ontology with a relativist epistemology, which has led to criticism that it is difficult to comprehend and implement, as well as time demanding and resource intensive (Heeks & Wall, 2018). Critical realism has found its way into research due to the limitations of positivism and interpretivism. Positivism is criticised for being objective and devoid of social influence whilst interpretivism is being criticised for failing to provide generalizable causation and explanations (Heeks & Wall, 2018).

Critical realism is a philosophic stream that lies between the uttermost ends of the qualitative research paradigm scope. It recognises that reality is socially constructed. It also acknowledges that reality is chaotic and irrational to our mind. Critical realism accepts that it is impossible to understand the world or reality in its entirety (Matteucci & Gnoth, 2017).

Due to its inductive reasoning and use of qualitative data formats, this present study adhered to the interpretivism paradigm. Within the interpretivism paradigm, epistemology and constructivism are found (Packard, 2017). Interpretivist paradigm was followed because the study sought to understand the phenomenon and how business-IT alignment manifested in a South African development bank.

4.5 RESEARCH APPROACH

Studies in diverse disciplines usually use either deductive, inductive or a combination of the two research approaches. This is because the two research approaches are diametrically opposed in terms of which approach is the most appropriate for conducting research (Rahman, 2016). All studies and enquiries, whether qualitative or quantitative, should be consistent with their own ontology, epistemology, methodology and methods (Sparkes, 2015).

Both methods and approaches have their own set of advantages and disadvantages (Rahman, 2016).

4.5.1 Deductive Reasoning approach

When the study is focused on a large sample size and does not require in-depth analysis, the quantitative research approach and methodologies are advantageous. Quantitative approach has a deductive reasoning approach (Antwi & Hamza, 2015) and need less time to perform data collection as compared to qualitative. The primary benefit of quantitative approach and methods is their ease of generalisation to other groups, populations or sub-populations (Carr, 1994). The quantitative approach's shortcoming is that it overlooks human behavior, experiences, and emotions. Moreover, its procedures

do not produce deeper insights. For quantitative analysis, less time-consuming statistics software such as SPSS is frequently employed.

The present study required in-depth analysis by investigating human behavior, experiences, and emotions which are often overlooked by quantitative research approach and deductive reasoning.

Quantitative research employs traditional and objective quality, validity, and reliability standard to assess the data's quality and the robustness of the research findings (Weis & Willems, 2017). In quantitative research, reliability refers to the degree to which the study's findings are reliable and consistent and can be generalised and reused in a wide variety of situations. When quantitative research is conducted appropriately, it can yield solid data from a representative sample of participants that can be reused in several similar cases to the one being examined. As a result, the study is beneficial and beneficial to practitioners (Smith, 2017).

Quantitative research believes that knowledge is discovered independently from the interference of the researcher and that it is found in an objective way and therefore involves positivism research paradigm (Smith, 2017). This approach uses surveys and questionnaires that contain pre-structured or close-ended questions to gather data from large samples of the population. Quantitative approach is preferred when researchers need to use measurements and numbers. With surveys, for example, responses are measured by using rating scales. The interviewer provides statements and the respondents respond by indicating their preferred answer in one of the four or five response categories, this is also called Likert scale. The researcher then calculates and reports an average for the group of respondents (Antwi & Hamza, 2015).

The quantitative technique is consistent with the positivist research paradigm (Antwi & Hamza, 2015) and assumes the independence of the researcher from the research (Gichuru, 2017).

4.5.2 Inductive reasoning Approach

A qualitative approach has an inductive reasoning and produces findings that are not derived by statistical measurements or other means of quantification (Antwi & Hamza,

2015). It is the study of people and their experiences, behaviors, emotions, opinions, and sentiments in their environment of function. The emotions, feelings, and behaviors may be related to the subject under study (Strauss & Corbin, 1990). Qualitative research is not statistical in nature and hence allows for the possibility of various realities. Qualitative research focusses on subjective analysis, cross-cultural influences and the social construction of problems, occasions, or practices by collecting non-standardised data and analyzing texts and images rather than analyzing numbers or statistics (Flick, 2018). This emphasises the fact that qualitative research is concerned with how people make sense of their reality.

Qualitative approaches and methods are unquestionably stronger when the study is centered on deriving deeper insights from a phenomenon, interpreting assessments or tests, studying a subject matter, and also dealing with behavior, perceptions, feelings, and comprehension (Rahman, 2016). Qualitative approaches and procedures have limitations in that they can only be used with a limited sample size and are time intensive to undertake. In addition, it is not generalizable. Single case study findings are not necessarily generalizable since it is predicted that general phenomena appears in isolated instances and that these isolated instances are incorporated into the universal structures (Weis & Willems, 2017). Qualitative research findings can be generalised, but not in the same way that quantitative findings can. It makes use of a variety of generalizability techniques, including naturalistic generalizability, transferability, analytical generalizability, and intersectional generalizability (Smith, 2017). Each of these generalisation is distinct and provides really helpful information. As a result, selecting the appropriate people or cases to research is critical for validity and generalizability. Only a qualitative method allows for the extraction of the impact of important moments from a topic via open ended interviews in which responses may reflect the worry or doubt that people experience (Grant, 2016).

The present study uses inductive reasoning and qualitative approach to derive deeper insights on the phenomenon of business-IT alignment in development banks in depth. Inductive reason is best suited for this study because it focuses on subjective analysis, cross-cultural influences and the social construction of problems.

When a qualitative researcher borrows a quantitative data gathering technique, it does not make their study a positivist study or make them a quantitative researcher. Because of their philosophical stance, data gathering technique can be used in a very different way and for different purposes by a qualitative researcher within his/her paradigm. This means a qualitative research can analyse data quantitatively without making their study quantitative by adopting a subjectivist epistemology with quantitative data (Sparkes, 2015). Qualitative research can count numerical figures and explore dimensions of magnitude but also, quantitative analysis can also make interpretations about meaning based on dimensions of magnitude (Sandelowski *et al.*, 2009; Teddlie & Tashakkori, 2009). Qualitative research lays the groundwork for questioning and challenging widely held assumptions and connotations about how organisations operate (Boadu & Sorour, 2015).

4.5.3 Mixed Method Approach

Mixed methods research is combination of qualitative and quantitative approaches in a single study (Heeks & Wall, 2018; Johnson *et al.*, 2007). A mixed method approach provides a balance by ensuring that where one approach is lacking in robustness, the other approach provides much-needed impartiality, and where one approach is biased, the other approach provides impartiality (Johnson *et al.*, 2007). The combination of these methodologies enables the findings to be corroborated.

There is a case to be made that the incompatibility between qualitative and quantitative approaches is untrue. The argument is that the two approaches are compatible and should be combined into a single methodology known as mixed methods (Sparkes, 2015). Both the qualitative and quantitative approaches are significant because they serve different study objectives. The qualitative approach enables practitioners to engage in a micro-analysis and intricacies of interactions, whereas the quantitative approach enables practitioners to engage in a bigger picture of a phenomenon that typically or predominantly occurs with larger samples (Rendle-Short, 2019). Qualitative and quantitative approaches are asymmetric techniques; one operates from the bottom up, while the other operates from the top down; one is emic, while the other is etic; and, once

again, one operates from an insider's perspective, while the other operates from an external perspective (Rendle-Short, 2019).

Quantitative results informs, and is informed by statistical or numeric analysis. Qualitative findings should not only be viewed as preliminary analysis that recognise exciting phenomena that leads to more informative analysis, but as an essential part of our understanding of the interactional features of our subjects. Qualitative and quantitative analysis informs each other. (Rendle-Short, 2019). Using qualitative approach only or quantitative approach alone does not reveal the complete story, both approaches are necessary (Grant, 2017). Reliance on one or the other may produce incomplete findings (Doucercain *et al.*, 2016). Both quantitative and qualitative research approaches have substantial significance in research studies. The approach proposed by Layder (1993) advocates for the use of quantitative methods to complement the basics of qualitative analysis. Research may generate results that require qualitative and quantitative analysis which may need both approaches to be used. These two approaches are rather mutually informing than opposing (Gichuru, 2017).

When researchers interpret both quantitative and qualitative findings, using a mixed method approach is not just tough, but it is also an unsurmountable task (Almalki, 2016). This study has not used a mixed method approach.

4.6 RESEARCH STRATEGY

A research strategy is the procedure that a researcher follows when they collect and interpret data with a specific goal in mind (Rahi, 2017). Research strategies are selected depending on a number of factors, some of which include the research goals, the subject of the study, and the researcher's philosophical perspective (Caldeira, 2016).

Many research strategies are used in information systems studies. Common research strategies include survey, grounded theory and case study. These strategies are described briefly in the subsections that follow.

4.6.1 Survey Strategy

In research, surveys are tools that allow researchers to gather data directly from participants in the study by asking them a series of structured questions about their experiences with the research project. It enables the researcher to get information about a phenomena by formulating structured questions that represent the views, perceptions and actions of a whole group of people (Queirós *et al.*, 2017).

Population censuses, voting for government representatives, economic data, and employment statistics are just a few of the many business information systems and applications for which surveys are frequently utilised by governments. The most challenging aspect of conducting surveys is determining a representative sample of the larger population (Walliman, 2017). Walliman raises the issue of how comparable the characteristics of the chosen sample are to the characteristics of the larger sample and to the characteristics of other similar groups. The answer directly relates to whether or not the research is sufficiently large to be generalised. Participants find it simple and convenient to use this device. This method is also low-cost and fast to handle, particularly when dealing with a big number of patients spread over a wide geographic region (Walliman, 2017).

Surveys involve statistical analysis of data (Almalki, 2016). The data that is collected and analysed is generally quantitative and would be gathered through a questionnaire. This data gathering instrument consists mainly of pre-structured set of questions that are distributed to recipients. Recipients are seen as a sample of a bigger population within the study (Gichuru, 2017). Even though bigger samples of data seems to be reliable, it changes quickly. Surveys that are taken in voting for example, change frequently based on how people feel and what could have happened in a particular time. Because recipients are free to respond anonymously, they are also free to express their views whether they have changed quickly or not. It is purely voluntary and mostly anonymous to those that respond. The researcher has absolutely no influence on how the respondents answer the questions (Walliman, 2017).

Researchers believe that a positivist method based on surveys cannot be utilised to study the social world since the social world is complicated (Hasan, 2014), hence, they are not suited to this study and consequently not used.

The survey instrument is commonly used to test hypotheses and corroborate theories and involves large amounts of data measurements, influences and correlations based on quantification of data (Hasan, 2014). Surveys use measurement instruments such as Likert scales that have from five to seven response categories. The Likert scales are frequently used to measure attitudes and observations. The survey strategy is popularly used with deductive research approach with sampling that involves structured questionnaires that assess the beliefs and attitudes of people that have been selected as a population (Rahi, 2017).

Surveys have two advantages, they are reliable, inexpensive and can be highly representative of the bigger population, if properly designed. The biggest limitation of surveys are that their reliability is based on the quality of the answers provided (Queirós *et al.*, 2017). Using Surveys might not produce strong research results as compared to true experiments. The power of the survey can be improved if the survey is conceptualised through testing natural experiments and if the results are supported by data from open-ended interviews (Bernard, 2017).

4.6.2 Grounded Theory Strategy

Grounded theory is a research strategy is used particularly, and is well suited to expose and comprehend what exists behind a phenomenon of which very little is known (Strauss & Corbin, 1990). It identifies a phenomenon and specifies the circumstances that give rise to it, the setting in which it is entrenched, the actions and interactions by which it is handled and the findings of the strategies used to understand it. This means the creation of new knowledge through identifying the factors influencing a particular phenomenon and providing an in-depth understanding that can inform the practice of policy making (Boadu & Sorour, 2015).

Grounded theory was developed by american sociologists Aselm Strauss and Barney Glaser in the latter part of the 1960s in an effort to bring an alternative methodology in

the field of sociology to the dominant positivistic research methodology. Unfortunately for them, their efforts did not succeed in providing an alternative. Grounded theory has in turn become one of the modern positivistic research methodology (Matteucci & Gnoth, 2017). Grounded theory consists of a collaborative strategy that engages researchers with their environment and their study participant. Grounded theorists are able to characterise the world as they study it, and they aim to alter it for the betterment of the communities that live in it (Daly *et al.*, 2016; Matteucci & Gnoth, 2017)

The purpose of grounded theory is to bring an understanding of how social circumstances account for the experiences, the behaviours and the collaboration of people being studied (Boadu & Sorour, 2015). This strategy uses data from individuals to develop a theory or an explanation of the process developed over time hence it is also called a development theory. It is more suitable for explanatory research (Percy *et al.*, 2015). Grounded theory is the process of doing an in-depth and granular examination of micro data to make theoretical assertions that are more generalizable and empirically supported (Institutionalism, 2015).

Grounded theory is effective in exploring complexities because of its capability to produce comprehensive details of organisational exploits in context. It is also particularly suitable in research involving behaviour as it captures the complexity of the processes with ease. Grounded theorists are compelled to approach an inquiry with an open mind because the result of the theoretical account is likely to appear from the investigation (Martin & Turner, 1986). Just like case study, grounded theory research design can be interpretive because it involves cooperative expressions that constructs meanings which may be transformative, enabling and disconcerting (Matteucci & Gnoth, 2017).

4.6.3 Case Study Strategy

The case study strategy was selected as the most appropriate strategy for this study.

Three seminal researchers (Yin, 2003; Stake, 1995; and Merriam, 1998) who write extensively on this subject define case study in three different ways. One researcher defines a case study as an empirical analysis that examines a contemporary phenomenon in its real-life context, particularly when the boundaries between the

phenomenon and background are not clear (Yin, 2003). Another researcher defines a case study as an investigation into the distinctiveness and complexity of a particular case (Stake, 1995). A case study is intended to capture and bring out the complexity of a particular situation. Every object has its own set of characteristics. As a result, any object, from a toothpick to a person, can be used as a case. Where as another defines it as “a thing, a single entity, a unit around which there are boundaries” and it can be a person, a program, a group, a specific policy and so on” (Merriam, 1998).

A case study is simply an entity or an object or a thing that is being studied. Very often a case is a noun and seldom a verb. The primary aims of a case study is to examine and gain more knowledge about the object (Stake, 2006). A case study encourages researchers to concentrate on an "object" and maintain a systematic and real-world viewpoint – such as the analysis of human development cycles, small community behavior, corporate and administrative structures, neighbourhood transition, school success, interpersonal relationships and business maturation (Yin, 2014). Yin also points out that a case study is an empirical enquiry that explores the object of study or studies by addressing the “why” and the “how” of the the phenomenon of interest.

A case study is a methodology or a qualitative research enquiry of an object of study or a product. A case study takes the form of a qualitative research approach where the researcher explores a single case or multiple cases in-depth. The data collection for this kind of strategy involves observations, interviews, documents and reports (Creswell & Poth, 2017).

Case studies are preferred because of their qualitative character. However, it is also criticised because it is less objective, uses less quantification, and it is not as representative as other research strategies such as experiment and quantitative surveys that are able to use large samples of data (Mayer, 2015).

A case study addresses specific studies where more variables of interest are to be considered and not just the obvious point of the study (Mayer, 2015). For the purpose of conducting an in-depth analysis of a case, these variables are obtained from many sources in a variety of combinations. The comprehensive approach include the logic of

design, the data collection techniques, and the approaches employed for analysis of the data that has been collected.

The characteristics that define case studies are in Table 10 below.

Table 10: Case Characteristic/depth (Yazan, 2015)

Case Characteristic/depth	Description
Holistic	Considers the interrelationship between the phenomenon and its contexts
Empirical	Bases the study on the observations in the field
Interpretive	Rests on intuition and see research - basically as a researcher-subject interaction
Emphatic	Reflects the vicarious experiences of the subjects in an emic perspective
Particularistic	Focuses on a particular situation, event, program, or phenomenon
Descriptive	Yields a rich, thick description of the phenomenon under study
Heuristic	Illuminates the reader's understanding of phenomenon under study
Embedded	Examines some aspects of the case but not the entire phenomenon

A case study strategy is different from casework and case history (Yazan, 2015). It has unique distinctive attributes such as its particularistic characteristic. The particularistic characteristic refers to its ability to focus on particular situation or phenomenon or event or program. It also has descriptive characteristic which allows case studies to yield a rich, in-depth description of a situation or phenomenon or event or program under study. Its heuristics characteristic enables the researcher to illuminate the reader's understanding of the phenomenon under study. A case study can also consider the interrelationship between a phenomenon and its context because of its holistic characteristic. Its empirical ability allows the researcher to base their study on observation in the field. It can also be selective in the aspect of the case that it studies because it has a characteristic called embedded. Lastly, a case study strategy can be interpretive (Yazan, 2015).

4.6.4 Justification for a single Case Study

A single case study has advantages over a multiple case study. Gustafsson (2017) lists five advantages of a single case study as: 1) the single case study is much more appropriate when the researcher is developing a high-quality theory, as this type of strategy elicits additional depths that result in more robust and diverse theories (Gerring, 2004); 2) single case studies provides the researcher with much deeper insights and understanding of the subject being explored; 3) single case studies can richly depict the presence of occurrence and its process better than multiple case studies; 4) A single case study provides the researcher with the tools and opportunity to critically examine existing theories and relationships and to propose new ones for exploration as a result of the careful examination of a single case; and 5) they are less expensive and consume less time as compared to multiple case studies.

A single case, carries more weight and provides the researcher with stronger findings and accurate facts of a phenomenon than would be the case had the user considered a multiple cases (Gerring, 2004). A single case, however, must be observed with its case units to give more in-depth evidence (Gerring, 2004). A single case study strategy is appropriate in this study purely because it embodies an exhaustive analysis of a single case with multiple case units (Gerring, 2004). Case Study strategy is subjective and comprehensive in its approach. Other researchers argue that a single case study strategy is extremely powerful and its ability to produce additional context is unmatched by the use of the multiple case study (Dyer Jr & Wilkins, 1991).

The present study adopted a case study strategy with multiple case units. A case study can be holistic or embedded. An embedded strategy identifies sub units (case units) within the main case, these case units are analysed individually and the findings are drawn together to bring forth one complete picture (Rowley, 2002). An embedded single case study is a study that comprehensively investigates a case by exploring its diverse processes, methods and attitudes within its case units that make up or are found to contribute to the case (Saladin *et al.*, 2018). To this point, this is a case study of a development bank that has several business divisions which were each treated as case units. Each business division which was treated as a case unit was analysed individually.

The findings from each case unit was then drawn together to bring a complete picture of business-IT alignment phenomenon within a development bank.

4.6.5 Description of the case

The development bank that is being studied is a South African entity. It trades and conducts its business within the borders of South Africa. It is wholly state-owned and partly state funded. The development bank also acquires money from the market to lend it on to its clients. The bank's objective is to identify development opportunities and projects in partnership with stakeholders, its clients. This development bank finances projects for development, emerging, commercial and corporate growers through funds it receives from government and money that it raises in the capital markets.

The case study explored and described business-IT alignment in development banks in South Africa. The studied development bank has varied business units, and they are seen here as multiple case units. That is, this is a single case study with eleven case units. The case provides financial assistance to the development, emerging, commercial farming sector and to agri-business. To enable access to finance by new entrants to agriculture from historically disadvantaged backgrounds they make available suitably designed financial products. The case is a uniquely South African development bank that serves all farmers equally and it operates only within the borders of South Africa.

4.6.5.1 Development Banks in South Africa

There are 15 national development banks and 11 provincial development banks in South Africa. Table 11 gives a breakdown of the 26 development banks of South Africa and their mandates.

Table 11: Development banks of South Africa and their mandates (Manager, 2011)

Institution	Mandate	Total Assets	Mandate
Industrial Development Corporation (IDC)	The IDC is a self-financing, state-owned national DFI that provides financing to entrepreneurs and businesses engaged in competitive industries. https://www.idc.co.za/	R144 Billion	National

Development Bank of Southern Africa (DBSA)	The purpose of the DBSA is to accelerate sustainable socio-economic development by funding physical, social and economic infrastructure. Its goal is to improve the quality of life of the people of the region. The bank plays a multiple role of financier, adviser, partner, implementer and integrator to mobilise finance and expertise for development projects. https://www.dbsa.org	R89 Billion	National
National Housing Finance Corporation (NHFC)	The NHFC was set up with a mandate to ensure that every South African with a regular source of income is able to gain access to finance, to acquire and improve a home of his or her own. https://www.nhfc.co.za	R4.8 Billion	National
Small Enterprise Finance Agency (Sefa)	Sefa was formed in April 2012 as a result of a merger of Khula Enterprise Finance Agency (Khula) and the South African Micro Apex Fund (SAMAF). It was established to streamline provision of access to finance to Small Medium and Micro Enterprises (SMME), inclusive of Co-operative enterprises. http://www.sefa.org.za	R2.2 Billion	National
National Empowerment Fund (NEF)	The NEF promotes and facilitates Black Economic Empowerment (BEE) and transformation. Its mandate and mission is to be a catalyst of Broad-Based BEE through asset management, fund management and strategic projects. https://www.nefcorp.co.za/	R4.4 Billion	National
Independent Development Trust (IDT)	The IDT has a mandate to support government in meeting its social mandate of alleviating poverty in improving the quality of life of poor rural communities. It has created a reputation for being a development programme-implementing agency focusing on development planning, implementation, and the coordination of government programmes.	R1.9 Billion	National

	http://www.idt.org.za		
Land and Agricultural Development Bank of South Africa	The Land Bank is a specialist agricultural bank guided by a mandate to provide financial services to the commercial farming sector and to agribusiness and to make available new, appropriately designed financial products that would facilitate access to finance by new entrants to agriculture from historically disadvantaged backgrounds. https://landbank.co.za/	R52 Billion	National
National Youth Development Agency (NYDA)	The NYDA's mandate is to: • advance youth development through guidance and support to initiatives across sectors of society and spheres of government • embark on initiatives that seek to advance the economic development of young people • develop and coordinate the implementation of the Integrated Youth Development Plan and Strategy for the country. http://www.nyda.gov.za/	R128 Million	National
National Urban Reconstruction and Housing Agency (Nurcha)	Nurcha supports the national programme to house all South Africans in sustainable human settlements. Nurcha provides bridging finance to contractors and developers involved in the construction of subsidy and affordable housing, community facilities and infrastructure. http://www.nurcha.co.za/	R592 Million	National
Rural Housing Loan Fund (RHLF)	The RHLF's core business is providing loans, through intermediaries, to low-income households for incremental housing purposes. Incremental housing is a people-driven process; and the RHLF's core business is to empower low-income families in rural areas to access credit that enables them to unleash the potential of their self-help,	R666 Million	National

	savings and local ingenuity to build and improve their shelter over time. https://www.nhfc.co.za		
Mpumalanga Economic Growth Agency (MEGA)	MEGA is now responsible for funding SMMEs; agro projects and farming; and housing; and for promoting trade and investment in Mpumalanga. http://www.mega.gov.za	R1.17 Billion	Provincial
The Free State Development Corporation (FDC)	FDC is a specialist economic development agency formed to offer the Free State people and potential investors a wide selection of services https://www.fdc.co.za	R1.17 Billion	Provincial
Ithala Development Finance Corporation	Ithala Development Finance Corporation manages fully-integrated business activities that provide a range of financial and property services throughout KwaZulu-Natal. http://www.ithala.co.za	R7.09 Billion	Provincial
Limpopo Economic Development Enterprise	LimDev's mandate is to provide development finance to Small, Micro and Medium Enterprises (SMME's) to stimulate the growth and development of the Limpopo economy. https://provincialgovernment.co.za/	R2.2 Billion	Provincial
Western Cape Department Of Economic Development And Tourism	The primary responsibility of the Western Cape Department of Economic Development and Tourism is to develop, constantly refine and expand the Micro-economic Development Strategy https://provincialgovernment.co.za	R321 Million	Provincial
Northern Cape Economic Development Agency	The NCEDA generates economic development, planning, and the identification, facilitation of sustainable and viable projects that contribute towards economic growth and social development within the Northern Cape province http://www.nceda.co.za	Not found	Provincial
Eastern Cape Development Corporation	ECDC works with provincial and national ministries, municipalities, chambers, private business, communities and other development agencies to implement the economic	R1.7 Million	Provincial

	development policies of the Eastern Cape provincial government. http://www.ecdc.co.za		
Gauteng Growth and Development Agency (GGDA)	GGDA is mandated to implement approved departmental policies designed to grow the economy, attract investment and develop sustainable social-economic infrastructure http://www.ggda.co.za/	R1.9 Billion	Provincial
North West Development Corporation (NWDC)	The NWDC is an organisation which promotes industrialisation of the economy, attracting investments, promoting exports and overcoming the legacy of economic imbalances https://nwdc.co.za/	R1.5 Billion	Provincial
Small Enterprise Development Agency (Seda)	Seda's mission is to develop, support and promote small enterprises throughout the country, ensuring their growth and sustainability in co-ordination and partnership with various role players http://www.seda.org.za/	R314 Million	National
Gauteng Enterprise Propeller (GEP)	GEP promotes, fosters and develops small enterprises in Gauteng thereby implementing the policy of the Gauteng Provincial Government for small enterprise development. https://geponline.co.za/	R180 million	Provincial
National Development Agency (NDA)	NDA contributes towards the eradication of poverty in South Africa and its causes and has empowered and enhanced the capacity of the civil society sector through its mandate https://www.nda.org.za/	R68 Million	National
Co-operative Banks Development Agency (CBDA)	The mission of the CBDA is to develop the cooperative banking sector through the Provision of innovative capacity development and support to Co-operative Financial Institutions and their members http://www.treasury.gov.za/coopbank/	R11 Million	National
Housing Development Agency (HAD)	The HDA is a national public sector development agency that acquires and prepares land as well as develop the land and project manage the	R1 Billion	National

	development of housing and human settlements. http://www.thehda.co.za/		
National Economic Development and Labour Council (Nedlac)	Nedlac is the vehicle by which Government, labour, business and community organisations seek to cooperate, through problem-solving and negotiation, on economic, labour and development issues and related challenges facing the country http://nedlac.org.za/	R36 Million	National
Coega Development Corporation (CDC)	CDC is a development agency enabling sustainable socio-economic development in South Africa, through investment, infrastructure development, SMME development, mentorship, and facilitating skills transfer. https://www.coega.co.za/	R7 Billion	Provincial

Table 11 above describes the development banks of South Africa, their total assets based on their financial year 2019/20 audited and reported annual financial reports. The table also describe whether the development banks have a national or provincial mandate and footprint.

The National Housing Finance Corporation (NHFC); the National Urban Reconstruction and Housing Agency (NURCHA); and the Rural Housing Loan Fund (RHLF) – are under the Ministry of Human Settlements' jurisdiction. The Ministry of Human Settlements has pledged to establish a single "Housing Development Bank" to support the full human settlements value chain in the future (Corporation, 2019).

4.7 RESEARCH DESIGN

This section outlines the plan used in the present study to effectively address the defined research problem. This subsection describes the unit of analysis, the population and the sample methods utilised, and the justification for using these methods. This subsection also discusses the data collection procedures and how the data were analysed.

4.7.1 Unit of Analysis

When the researcher does not precisely specify the unit of analysis, the study cannot have a well-defined research problem, sampling method, data collection instrument, or proper data analysis option, and thus the study's conclusions cannot be generalised to a population (Kumar, 2018). Table 12 below describes different levels of unit of analysis.

Table 12: Levels of unit of analysis (Kumar, 2018)

<i>Unit of Analysis</i>	<i>Description of the Unit of Study Level</i>
Individual Level	The study of individuals to understand their behaviours, perceptions, attitudes or opinions
Aggregates Level	The study of the individuals as a groups, communities or nations. People's response are aggregated to explain groups, communities and nations. Aggregate Level is classified into two categories, namely, organisation and group
Organisation	This is the study of a formally structured group of individuals. Organisations include corporations, business organisations, institutions of learning, partnerships, non-governmental organisations and so on
Group	This is the study of informally structured groups of individuals. A group is defined as two or more individuals that interact with one another.

The unit of analysis is a thing, a person, a group of people, an organisation and the individuals within it, a country, a tool, a technology, or an object that is the subject of the study or for which the researcher is collecting data (Kumar, 2018). A unit of analysis can also be a process or a procedure, an invention, a strategy, a role or function that someone fulfills in an organisation, an occurrence, a project, a verdict, decision or technology (Runeson & Höst, 2009). The unit of analysis is an entity that is the "what" and "who" of the study. An entity includes objects, group of objects, individuals, group of individuals, organisations, group of organisations, organisations of individuals, countries and technologies (Kumar, 2018).

(Kumar, 2018) states that the first step on analysis of data is defining the unit of analysis. The researcher must determine before they start with the research on what the unit of

analysis is because whatever data collection methods are employed, they must be guided by the unit of analysis (Kumar, 2018).

The unit of analysis is the smallest object of analysis in a study (Matusov, 2016). The unit of analysis can be a problem-solving process that transitions from a previously learnt decontextualised problem-solving process to a newly decontextualised problem-solving process. The unit of analysis could be a reaction to meaningful events experienced by two or more participants.

In the instance of case studies on a community as an example, the researcher may study a larger entity by setting his attention on a smaller unit of analysis (Lune & Berg, 2016).

Researchers define a case study of communities “as the systematic gathering of enough information about a particular community to provide the investigator with understanding and awareness of what things go on in that community; why and how these things occur; who among the community members take part in these activities and behaviors, and what social forces may bind together members of this community” (Lune & Berg, 2016). The unit of analysis articulates the focus of the case study, in other words “what the case is”. This focus could be an individual, a group, an organisation, a city, and so forth (Grünbaum, 2007).

The present study was about business-IT alignment in a South African development bank. Therefore, the unit of analysis was an organization, a South African development bank.

Because this is an embedded single case study, the organisation serves as the unit of analysis. The unit of analysis is the development bank as an organisation with multiple business divisions, and these are represented as case units in this present study. Embedded cases consist of sub-units within of the single case (Saladin *et al.*, 2018). Embedded case studies have more than one sub-unit (case unit) of analysis (Koçdar *et al.*, 2017).

4.7.2 Population

A population as a segment of people or industry that is being targeted by a researcher for a study (Salazar *et al.*, 2006). Population denotes all conceivable elements of a group.

An element is the simplest and most significant unit that defines the study population which could be people or well-defined units of organisations that are significant in public health, education system, banking, manufacturing and so on. As an example, an element could be an individual, a household, an industry, a market place, or a school. Study population is a wide-ranging term and must be well-defined by the researcher to be specific to the parameters that describes the target population for a particular study (Salazar et al., 2006).

The following are characteristics of a good population (Mehmood, 2013):

- a population should be well defined
- it cannot consist of unlimited number of elements
- it cannot be too general
- a population can be homogenous – that means that every element should have the same kind of features that meets the criteria of the target population
- a population can be heterogenous – that means that every element have different kinds of characteristics

There are 15 national development banks and 11 provincial development banks in South Africa.

4.7.3 Justification for the study population for this study

There are 26 development banks as described above, 15 of which are national and 11 are provincial. Within the national development banks, there are small, medium and large development banks. National development banks are put under more scrutiny, in comparison to provincial banks, because they have a significant mandate which talks to the national development and the national economy. Of the 15, 3 are deemed to be large development banks and they have footprints across the country. It is inferred, therefore, that business-IT alignment in these banks would have greater impact towards performance and fulfilling of the national mandate. These banks are the Industrial Development Corporation (IDC), Land and Agricultural Bank of South Africa (The Land Bank) and the Development Bank of Southern Africa (DBSA). For the purpose and goal of the study, it made sense then to focus on the three largest development banks. That

is the population was confined to the three South African large development banks because of their large capacity and national significance.

4.7.4 Sample

The first thing to consider for data analysis is choosing a population from which a sample is drawn (Heppner *et al.*, 2008). The sample must be adequate and must closely resemble the general population when comparing the different dimensions of the population. A sample is technically a subgroup or smaller group of the population. It is a subgroup whose dimensions are representative of the total population. A sample is therefore drawn from a population. This process is called sampling (Mehmood, 2013).

The validity of the reasoning involved in drawing a conclusion or making a logical judgment about the population depends on the correct choice of the sample that represents the population (Heppner *et al.*, 2008). And the sample that represents the population more, will most probably produce a more accurate inference and better findings for generalisation than a sample that least presents the population (Mehmood, 2013). A good sample is one that reaches data saturation. A researcher should aspire to use a sample size that finds the best opportunity to reach data saturation, failure to do so, affects the validity of the research. The fact that a sample size is large does not effectively mean that it reaches data saturation, carefully selected sample, even if it is small can reach data saturation. When enough data has been gathered to replicate the study, data saturation is reached (Fusch & Ness, 2015). The estimation of the population is more accurate as the sample increases. Larger samples produce more accurate results from the population they have been drawn from (Rubin & Babbie, 2000).

Correct samples are typically difficult to arrive at especially in small samples where the population is heterogeneous with regard to relevant dimensions in the context of the study (Walliman, 2017). Since the population is large national development banks, therefore the sampling is from within these organisations. Case studies should not be a statistically valid sample of any population, it is enough to have one or two cases to come to a valid conclusion (Caldeira, 2016).

4.7.3.1 Sampling Method

A sampling method's purpose is to maximise the generalizability of the population sampled (Salazar et al., 2006). Sampling methods resemble the process of identifying a sample. Researchers use either probability or non-probability methods of sampling. With the probability sampling method, units have an equal opportunity of being picked for sampling. However, with a non-probability sampling method, units are not selected randomly but rather selected by the researcher based on a subjective judgement. Every unit does not have equal opportunities of being picked for sampling in this case (Rubin & Babbie, 2000; Tyrer & Heyman, 2016).

4.7.3.1.1 Probability Sampling

As stated above, probability sampling method is random and all units have an equal opportunity of being selected for sampling. Probability sampling is not perfect. It provides the highest amount of representation when it is used with a large sample size, however, it is very expensive to use and consumes a lot of time. It is also complicated and requires a large sample size to function error free (Gokhale & Srivastava, 2017). Probability sampling is less accurate and produces sampling errors with smaller samples (Tyrer & Heyman, 2016). Table 13 provides the different types of probability samples.

Table 13: The different types of probability samples (Gokhale & Srivastava, 2017)

Probability Sampling Methods		Description	Advantages	Disadvantages
Simple Sample	Random	In this sampling the sample units are selected by means of a number of methods like lottery method, tippet's methods, and Grid method	• All elements have equal chance of being included • It is the simplest of all sampling methods and easiest to conduct • This method can be used in conjunction with other methods in probability sampling	• It does not make use of knowledge of population which researcher may have • It produces greater error in the results than do other sampling methods • It cannot be used if the

		• Researcher does not need to know the true composition of the population beforehand i.e. they require minimum knowledge of population in advance • Degree of sampling error is low • Most statistical textbooks have easy to use tables for drawing a random sample.	researcher wants to break respondents into sub-groups or strata for comparison purposes.
Stratified Sample	This is the form of sampling in which the population is divided in to a number or strata or sub-groups and sample is drawn from each stratum.	• Sample chosen can represent various groups and pattern of characteristics in the desired population • It can be used for comparing sub-categories • It can be more precise than simple random sampling.	• It requires more efforts than simple random sampling • It needs a larger sample size than simple random sample to produce statistically meaningful results because each stratum must have at least 20 persons of make statistical comparison meaningful.
Cluster Sample	The usual sampling procedure is to select one element or subject at a time. In cluster sampling, we can divide the	• This is very time consuming and tedious when a large sample is needed.	• Cannot be used with smaller sample sizes

	state into districts, revenue divisions and villages and select clusters or groups of people from these areas		
Multistage Sample	A form of cluster sampling which is used in more complex survey research designs is called multistage sampling. In this sampling procedure, individuals or households are selected, not groups	Works very well only with nationwide survey and extremely large sizes	

Random sampling, stratified sampling, cluster sampling, and multistage sampling are all examples of probability sampling. The advantage of probability sampling is that its conclusions are considered more objective because they are not influenced by the researcher's prejudice. The disadvantage of this sampling approach is that it is difficult to use, involves additional effort and time, and is somewhat expensive (Gokhale & Srivastava, 2017).

4.7.3.1.2 Non-probability Sampling

Table 14 below show the types of non-probability Sampling methods.

Table 14: Types of non-probability Sampling methods (Gokhale & Srivastava, 2017)

Non-probability Sampling methods	Description and Use	Use
Purposive Sampling	The researcher purposely chooses units, which in his judgment possess appropriate characteristics required of the sample units and are thought to be relevant to the research topic and are easily available to him	A researcher would subjectively select an area where they would find their sample in abundance and where they has easy access to them

Convenience Sampling	The researcher studies all those persons who are most conveniently available or who accidentally come in his/her contact during a certain period of time in the research	The researcher is engaged in a study of post graduate students might visit the university canteen, library, departments, playgrounds, and interview certain number of students.
Quota Sampling	The researcher needs to include a certain proportion, a quota, of subjects with a specific characteristic or quality.	The researcher select a subset, quota units that have a particular characteristic with a larger sample of another subset that does not have the same characteristic as the units in the first quota
Snowball Sampling	The researcher uses the first subject as the connecting link to select the rest of the subjects. Samples are frequently used in small studies which focus on specific conditions	- Used in surveys where the researchers do not have much information about the population - This technique is useful when it is hard to locate subjects who meet specific criteria set by the researcher to select a sample. - For example, in a study of women who had undergone successful family planning operations the researcher contacts a woman who meets this criteria and then identifies other such women from the first subject's contacts.

Purposive sampling, convenience sampling, quota sampling, and showball sampling are all examples of non-probability sampling methods (Gokhale & Srivastava, 2017). With Non-probability sampling researchers do not claim for representativeness. This is because the researcher selects the sample unit or units for the study based on the

investigation's objectives. The sample units are not chosen randomly nor do they get an equal opportunity to be chosen for the study.

4.7.5 Sampling for this study

The present study used a purposive sampling technique. The study purposively sampled one of the three largest national development banks in South Africa to explore how business-IT alignment manifests. Purposive sampling allows the researcher to purposely choose a sample and the unit of analysis, which in his judgement possesses appropriate characteristics required of the sample units and are thought to be for the purpose of the research topic. This method is relevant and preferred for the present study.

4.7.6 Study participants

The unit of analysis was the organisation, a large national development bank. The participants, who were representing the organisation, were purposively selected based on their familiarity and experience with business strategy and IT strategy as well as the operations of the bank. The study interviewed 32 participants comprising of senior managers, line managers, senior specialists and specialists from each of the business divisions (case units in the present study). A typical large national development bank in South Africa has the following business divisions (case units), Human Capital, IT, Strategy and Marketing, Finance division, Risk and Credit division, Legal division, Audit and banking operations. However, the purposively selected bank has 11 business divisions (case units).

4.7.7 Data Collection Methods for Qualitative Research

Qualitative research has to do with the systematic interpretation, description, gathering, and organisation of text extracted from documents, observations, and conversations. Three critical steps in a qualitative data gathering technique are 1) developing a clear data collection strategy, 2) correctly identifying the sample from the population under investigation, and 3) collecting rich data using an appropriate data collection method (Ranney *et al.*, 2015).

Data collection may include interviews, observations, focus group interviews, and document analysis (Cyr, 2019; Kitto *et al.*, 2008; Ranney *et al.*, 2015). The intention of these strategies is to investigate the behavior, interactions, and meanings of text to develop a strategy for purposive sampling. The objective is to derive generalisation from the context of the qualitative investigation using the data obtained (Kitto *et al.*, 2008).

4.7.4.1 Observation

The present study collected data through observation. Observation may happen in person, that is with an individual keeping an eye on the activities or monitoring remotely by using technology such as video or audio taping, still photos, or observing environmental patterns. In other studies, researchers may collect and examine previously published free text. Researchers use data collection guides in qualitative research in the field. Researchers also use unstructured notes instead of a formal data collection protocol. They are guided by predetermined guidelines in terms of what to take notes on to make sure that they record what deserves the researcher's attention (Ranney *et al.*, 2015).

Observation is a procedure whereby people interact with the natural settings that they study so that their conducts and words can be properly contextualised. Researchers refer to these natural settings, where their projects are conducted, as "the field," and the study or work they perform there is referred to as fieldwork. The study of individuals in their natural habitat is referred to as ethnography or ethnographic research. Even so, hypotheses can be deduced in these types of experiments (Angrosino, 2016). Table 15 below presents the types of observation techniques.

Table 15: Types of observation techniques (Murgan, 2015)

Types and forms of observation	Description of the type of observation
Participant and non-participant	This kind of observation depends on the researcher choice on whether to be part of what they studies or not
Obtrusive and unobtrusive	This kind of observation is based on whether the object being studied can detect the environment

Observation in natural settings	This observation is conducted in contrived settings where the researcher can observe the behavior where and when it is occurring

With the observation technique, data is collected directly by the investigator in his/her own way through direct observation without requesting participants to provide responses. This technique involves making decisions about what is being observed on the field (Murgan, 2015).

4.7.4.2 Document Analysis

The present study also collected data through document analysis. Document analysis is a systematic method of data collection used in qualitative research in which research relevant printed and electronic documents are selected and interpreted by the researcher to provide meaning on a certain topic. Documents are reviewed and analysed to extract meaning, acquire understanding, and formulate empirical knowledge (Bowen, 2009).

Document analysis includes an iterative process of glancing through documents quickly and interpreting them. It involves content analysis and thematic analysis. Content analysis is a technique for categorising data in relation to a central question for research (Bowen, 2009).

The process of document analysis includes identifying documents, collecting documents and analysing them (Oczkowski *et al.*, 2018). Identifying documents requires searching the internet or an organisation's document repository, if the organisation grants approval and access. Other non-digital papers can be located through searches of archives and document storage. After locating the documents, the researcher identifies the ones that are pertinent to the study. Once the documents have been identified, they are classified according to subtopics or authors. The documents are then analysed using a qualitative data analysis tool.

The following documents were analysed, the organisation's overall business strategy document, division's business strategy documents, organisation's website and the annual financial results document, amongst others.

4.7.4.3 Focus Groups Interviews

Focus groups interviews are a type of data collection approach in which a small group of people is interviewed. A moderator conducts a focus group interview as a discussion group. Questions for the focus group are planned and organised. They begin with broad questions and progress to more detailed ones. Due to their in-depth capability, they are frequently utilised in qualitative research. (Murgan, 2015).

Focus groups provide rich and detailed data through a semi-structured session, in an informal setting. Focus groups work very well in environments and groups where the members are well informed, eager, and able to communicate in a suitable group setting. People are willing to participate when they speak a common language and would like to be heard (Carey & Asbury, 2016).

Focus groups are much different from one-on-one interviews in that they involve groups which provide researchers with information that is collected from group member's interaction to express responses to the questions researchers pose (Rosenthal, 2016).

4.7.4.4 Interviews

Interviews are a form of data collection technique that make use of open-ended questions. Researchers often utilise these questions to gain experience and a better understanding of the participants' behavior. Interviews can be conducted through face-to-face interaction or by Skype, email or by telephone (Heath et al., 2018). Below are three different types of interviews, as shown in Table 16 below.

Table 16: Types of Interviews (Mann, 2016)

Type of Interview	Description of Interview
Structured interview	This type of interview relies on a detailed script that is prepared and usually piloted before the interview. It can resemble a spoken questionnaire. Part of the reason for this piloting and revision process is that the script is usable by more than one researcher.
Semi-structured interview	This type of interview often relies on a guide (rather than a script) and, although there is room for deviation from the guide, it is important to cover most of guide, for comparative purposes.

Unstructured interview	This type of interview relies on a few open-ended questions where interviewees are encouraged to talk at length about what seems significant or prominent for them. In such open-ended interactions, there might be one or two themes that the interviewer wants to focus on but generally follows the lead of the interviewee.

Interviews can take a structured, unstructured, or semi-structured form (Saunders & Townsend, 2016). Structured interviews are scripted as opposed to semi-structured interview which rely on an interview guide. Unstructured interviews have fewer pre-scheduled questions and are guided by the interviewee's responses.

The advantage of interviews is that they enable the researcher to do an in-depth examination with swift follow-ups to questions that remain unanswered or raise new topics that were not anticipated. This also allows for clarifications and addressing inconsistencies and mis-understandings. Unlike surveys, with interviews, the participant can request for a question to be rephrased should they not understand it as it was posed (Cobb et al., 2018). The advantages and disadvantages of qualitative data collection methods are shown in Table 17.

Table 17 Advantages and disadvantages of qualitative data collection methods (Bowen, 2009; Murgan, 2015)

Data Method	Collection	Advantages	Disadvantages
Face to Face Interviews	Face	• More information and more in depth discussion can be achieved • There is flexibility to restructure questions under interview • The interviewer can easily control the person to be interviewed • personal information can be obtained freely under face to face interview • There is high possibility of obtaining responses to all questions under face to face interview	• Is a very expensive method to use especially finding money to go round the areas where people shall be interviewed • Is more time consuming • There a is possibility of bias • The presence of interviewer may at times stimulate the respondent to give some over bloated response and misinformation • Lack of physical presence of respondents can as well influence bias and over

	• There is also the possibility of asking probing complex questions and getting complex answers under face to face interview	bloated responses of respondents
Telephonic Interviews	• It is faster to conduct in term of speed, telephone is less expensive to conduct • Can be used for a wider coverage of study • Makes it amenable to less bias from respondents	• it can only be conducted within a limited duration of time • identification of respondent can be more difficult to ascertain • is limited representation of respondents
Observations	• Direct primary data collection • Complement information obtained by primary methods like interview and questionnaire • Directness also permits observer to understand situation under study and to identify unanticipated outcome • It rules out bias if observation is done directly and accurately • Guarantees independence of respondents who are not subjected to any sort of cooperation	• It is time consuming and expensive • It is not practically suitable for applied research studies that necessarily require a short period of data collection • It may be difficult to write down everything that is important while you are in the act of participating and observing
Document Analysis	• Is less time-consuming and therefore more efficient than other research methods • It requires data selection, instead of data collection • Many documents are in the public domain and are obtainable without the authors' permission • Is less costly than other research methods and is often the method of choice when the collection of new data is not feasible	• Documents are produced for some purpose other than research • Documentation is sometimes not retrievable • Access to documents may be deliberately blocked • Documents that have been public may be those that favor the organisation and not necessarily the entire collection of document in the organisation

Focus Groups	• offers opportunity for direct contact between the interviewer and the people to be interviewed • consumes less effort and time for preparation • It provides speedy research result and enables researcher to increase sample size as the interview goes on	• The researcher has less control over the interview, unlike individual interview • It has been observed that the data obtained under group interview are more difficult to analyse • Groups can be difficult to assemble for focused interview • It can be difficult to see that interview discussion is conducted in an environment that is conducive for conversation

In the past, face-to-face interviews have been the most preferred mode of gathering data for qualitative research approach. However, in recent years, it has become clear that other form of interviews are also as superior as face-to-face. Interviews through telephone and Skype are just as effective as face-to-face. In other words, face-to-face interviews are not superior to other forms of interviews. In addition, these other forms on interviews are cost effective and they minimise the burden on the interviewer to travel to distant areas (Irvine *et al.*, 2013).

There is a further advantage to using e-mails for interviews. With e-mails used for interviews, participants are allowed to answer questions at their own time. With managers and executives' hectic schedules, it will be difficult to find time to sit and interview them face-to-face. With the use of technology, such tools as e-mails enable you to reach out to busy executives that provides answers to interview questions at a time that suits them (Mallows *et al.*, 2019). Different mediums for interviewing participants appeals to different people and different situations. It is more likely that not one medium of interview is convenient to all participants in a single study. Thus, technologies such as Skype communication platform and face-to-face interviews, as well as a combination of face-to-face, telephone, and email interviews, must be employed to achieve the optimum outcomes. This flexibleness increases access to participants and promotes openness on addressing sensitive topics that participant need to address. It also promotes record keeping and audit trail of discussions and accountability (Heath *et al.*, 2018). The

researcher could initiate the interviews using e-mail interviews and then use telephone or face-to-face interview to follow-up on missing data where it is possible.

The advantage of using interviews as a form of data gathering technique is that it allows the researcher to probe the participant's responses and urge them to think aloud as they answer questions posed to them. It also allows for semi-structured interviews which enables exploration with pre-determined questions and also provides an opportunity to explore other themes further (Cyr, 2019).

4.7.8 Data Collection Methods for the present study

In the present study, semi-structured interviews, document analysis and observation were selected as most appropriate methods of data collection. The choice was based on their advantages and relevance for the kind of research that this study is, as discussed and detailed above. The present study believed that triangulation of these three techniques would be able to provide profound and rich quality data. The data collection was carried out using the theories (discussed in chapter 3) as lenses, to create themes and subthemes. Semi-structured interviews were conducted remotely using Skype for Business online communication platform owing to the face-to-face restrictions during the Covid-19 period. Organisational documents were requested and obtained from the bank. Observation was done at the premises, this included observing strategic meetings, workshops, employee engagement sessions. From the observations, the study could observe how the organisation operated. The researcher also followed participants as they went about their daily business routines, while observing social distancing.

4.8 DATA ANALYSIS

Qualitative data may be analysed using various methods, namely content analysis, thematic analysis, discourse analysis and conversation analysis to mention a few. The present study analysed the collected data using both thematic and content analysis.

Data analysis is no longer only conducted in a manual manner, researchers often use different computer aided data analysis software to conduct analysis. Data analysis methods for qualitative research are mostly based on the same central principle of identifying the common themes or patterns from the data they analyse (Archer, 2018).

4.8.1 Thematic Analysis

Thematic Analysis is a data analysis technique that is very common with the qualitative research approach. It identifies, analyses, and reports on patterns, which are called themes, within the data that is being analysed (Cooper *et al.*, 2012). These themes become categories for analysis. The thematic analysis process involves careful and more focused reading and reviewing of data to select data for coding and category construction based on data characteristics. The ultimate objective is to uncover themes that are related to a particular phenomenon (Archer, 2018). Thematic approach is therefore a process of breaking up all the data that has been collected into their lowest and smallest components called codes and then re-organise and group them into units or categories known as themes.

There are two reasons why thematic analysis is preferred, this is because it is flexible and accessible. It provides a way that teaches the mechanics of coding and analyzing qualitative data systematically (Cooper *et al.*, 2012).

4.8.2 Content Analysis

Content analysis is a research technique that makes reproducible and reliable conclusions about the context of data (Krippendorff, 2018). Content analysis is indigenous to qualitative research and is possibly the most significant data analysis technique in the social sciences. It is used to analyse data within a certain context in view of someone's meaning. Content analysis relies on symbolic qualities to trace the antecedents, correlates or sequences of communication therefore revealing and analyzing unobservable context (Krippendorff, 2018).

Qualitative content analysis is a qualitative data analysis technique. Its emphasis is on the subject and context, but it also highlights instances of change, such as the similarities and differences across sections of the text (Graneheim & Lundman, 2004).

4.8.3 Data Collection Procedure

4.8.3.1 Interview Procedures

Semi-structured interviews were conducted, during the era of Covid-19, using the Skype for Business communication platform. The organisational chart illustrating the development bank's business divisions (case units), positions and roles was obtained from the bank's Website. Each of the study potential participants, within a division, were purposively identified and contacted. The list of potential participants and their contacts are listed in the bank's employee directory. A potential participant was contacted and invited to take part in this study, subsequently an interview appointment was arranged. A day prior to the interview, a reminder was sent. Since interviews were conducted using an online platform, they were done independent of time and location. All interviews took place at a time and from location convenient with the participant.

4.8.3.2 Document Analysis Procedures

Organisational documents were sought and sources from public platforms such as the internet, organisation's intranet portal, document repository, observed meetings, workshops and presentations conducted in the organisation. The Integrated Annual Reports (IAR) and other materials on the company's website that convey information about the organisation's performance, strategic intent, and business strategy were sourced. The organisational artifacts, documents such as the business strategy and IT strategy were requested and obtained from the participating development bank.

4.8.4 Reliability and Data Quality

Reliability and data quality in a qualitative research can be ensured through credibility, confirmability, dependability and transferability (Bradshaw *et al.*, 2017). The present study adhered to and used these guideline to ensure reliability and data quality.

Credibility and confirmability was first ensured by obtaining ethics clearance from the North-West University. The interview schedule was verified prior to interviews and the collected data secured. Confirmability was ensured by building a trust relationship with the participants where they confirmed accuracy of the transcripts. Dependability was

ensured by establishing audit trail describing the procedures and processes of the study. It also means to account for any changes that may occur. Transferability was also ensure by keeping a self-reference journal which provides rich descriptions and sufficient study details (Bradshaw *et al.*, 2017).

4.9 ETHICAL CONSIDERATIONS

This section describes how research ethics were adhered to during the present study. Ethics clearance was obtained from the North West University.

4.9.1 Informed consent

Written permission was first obtained from the participating development bank. Before the semi-structured interviews began, all participants were informed on what the study entailed and were notified of their rights. The written consent and study information were sent before the interviews, reiterated the rights of the participants to withdraw at any time from the study. Additionally, informed consent indicated that all subjects participated in the study voluntarily (Houghton *et al.*, 2010). To ensure ethical informed consent, all participants received and signed consent forms.

4.9.2 The right to privacy anonymity

Privacy is critical for ethical reasons. The identity of the development bank and its participants are kept anonymous. The participants were informed and assured that the data they voluntarily provided during the study would be kept safe, secure, and protected. It is the responsibility of the researcher to assure that the proper governance and risk associated with data leaks have been addressed satisfactorily (Longhurst, 2003).

Anonymity is the ability to keep the identity of the participants private. The identity of participants was not revealed or exposed by any means unless the individual had explicitly agreed to the exposure. Names of the participants were changed and details that can make the participants to be traced and ultimately identifiable was not provided (Flewitt*, 2005). The present study ensured that the identities of the participants are kept private and not revealed or written down anywhere in the study.

To ensure the right to privacy, none of the participants' names, identities, or demographic information were recorded anywhere on the transcripts. The information received from the participants is kept safe and was only shared with the research supervisor.

4.9.3 Protection from emotional and physical harm

The present study took care not to harm the participants in any way. Harm does not have to mean bodily or mental injury; it can also mean social harm. Research methods can cause emotional harm, especially during in-depth interviews that require that a victim should relieve their experience. In other cases causing the participant, who may also be the victim to relieve the trauma over again (Guillemin & Gillam, 2004).

No emotional or physical harm to participants or the development bank was anticipated during the study. However, to eliminate the risk of unintended physical and emotional harm, participants were asked to name any factors that the study may be unaware of that could provide a risk of unanticipated harm.

4.9.4 Respect and Dignity

The researcher must conduct study in an ethical manner and treat subjects with dignity and respect. Each participant must be treated as a human being, which implies they deserve human dignity. Human dignity cannot be relinquished, not even through illness, handicap, or approaching death. Giving respect to participants for their overall wellbeing is a value that must be practiced (Gastmans & Milisen, 2006). At all instances, the participants' dignity was preserved.

Participants were instructed in advance not to answer any questions that they did not feel comfortable answering or that they felt were demeaning.

4.9.5 Respect for autonomy

People are not objects. Human beings are persons that act according to their principles, in liberty, with self-determination and in a responsible way (Gastmans & Milisen, 2006). The fact that human beings can make choices must always be respected regardless of how the researcher feels about the choice or decision taken by the participant. The researcher considered the research participants as responsible people.

Participants were advised that there were no correct or incorrect responses. All responses were accurate and representative of the participant's experience.

4.9.6 Inclusion of sensitive materials in publications

In-depth semi-structured interviews have the potential to elicit participants' disclosure of private information about their life. This information may be provided inadvertently but not for publication. When such sensitive material is shared by the participant, a researcher must use caution. The researcher must be reasonable when they include information for publication. Sensitive information must not be published and authors must use their judgment to make this call (Wood, 2006). In all publications emanating from the present study, including this thesis, participant's sensitive information was ensured and anonymity upheld.

4.10 SUMMARY OF CHAPTER 4

This chapter described the research methodology followed in the present study. The research philosophy, research paradigm, research approach and research strategy were described. This chapter further outlined the unit of analysis, the study population, the sampling method, data collection and analysis. The justifications for the research paradigm, research approach, research strategy and sampling method were also provided. The next chapter analysis data collected and discusses the study findings.

CHAPTER 5: DATA ANALYSIS AND DISCUSSION OF FINDINGS

5.1 INTRODUCTION

The previous chapter discussed the research methodology followed in the present study. The chapter described the research approach and paradigm, as well as the research strategy and design. Furthermore, the preceding chapter discussed how data were gathered using semi-structured interviews, documentation, and observation.

In this chapter, the data that were collected are analysed using thematic and content analysis methods and findings discussed. The study findings are discussed per theme and subtheme. A theme is tantamount to an objective of the study. The importance of content analysis is that it provides the opportunity for researchers, through verbal or written communication materials, to understand the significance of a phenomena that could contribute to a study (Li *et al.*, 2019). Thematic analysis is a method that defines, evaluates and reports on trends or themes within a qualitative data set. Thematic analysis is known as a descriptive technique that produces data in a flexible way that suits other methods of data analysis (Castleberry & Nolen, 2018). At the end of this chapter, a summary of the study findings is presented for each theme

The following themes in Table 18, which are tantamount to the study objectives, are listed below together with the theory used as a lens.

Table 18: Study Objectives and Theoretical lenses used

Study Objective/Theme	Theory
To analyse and understand how the business strategy and the IT strategy manifest in South African development banks	Strategic Alignment Model
To explore and describe business-IT alignment in South African development	Strategic Alignment Model MIT90 framework Strategic Alignment Maturity Model

banks through triangulation of four theoretical lenses	IT Capability Model
To describe how social factors, culture and communication, influence business-IT alignment in South African development banks	MIT90 framework
To determine how business-IT alignment can be improved in the context of South African development banks	Strategic Alignment Maturity Model

The present study took the qualitative research approach in exploring, in-depth, business-IT alignment in a development bank, a case study with multiple case units. The different business units within the development bank are treated as case units with partnerships. Partnership maturity refers to how other business units and the IT division perceive one another (Boström & Celik, 2017). Partnership matures when business units perceive the IT division to be a valuable and an important partner to accomplishing the business strategy. Business executives must encourage innovation, advocate for empowerment, and foster collaboration between the IT division and business units to achieve business-IT alignment (Eom et al., 2015).

The identity of the development bank and study participants are kept anonymous. Data are analysed per theme in each section with sub sections. Semi-structured interviews were conducted with 11 business units and further data were collected during organizational meetings, workshops, presentations and staff briefings where the Executive Management Committee (EXCO) made contributions. Primary data were collected through semi-structured interviews with 32 participants.

The case units are synonymous with business divisions of the development bank. Each business unit is sub divided into divisions according to function. They are listed from case unit A through to case unit K. The case units are Information Technology (IT), Banking Operations Unit (BOU), Strategy and Communications, Post Sales Services, Credit & Risk, Presales Advisory Services, Finance, Treasury, Human Capital, Audit and Executive Management Committee (EXCO) and are 11 in total. The data analysis and discussion of findings are done per case unit, from the first case unit, section 1 to the last

section, 11. Section 12 presents the findings of all case units, from A to K with regard to the organisational data analysis and discussion findings. The discussions and findings were consolidated under this section because they focus on the organisation and not individual business units, even though they were noted during the interviews conducted with users from different business units. The table below is a presentation of the divisions within the South African development bank and how they are mapped to case units.

Table 19: Business Divisions as case units of the development bank

BUSINESS DIVISION	CASE UNITS
Information Technology (IT)	A
Banking Operations Unit (BOU)	B
Strategy and Communications	C
Post Sales Services	D
Credit & Risk,	E
Presales Advisory Services	F
Finance	G
Treasury	H
Human Capital	I
Audit	J
Executive Management Committee (EXCO)	K
Information Technology (IT)	A

5.2 SECTION 1: CASE UNIT A - IT DIVISION

This section provides data analysis and findings from Case Unit A: IT division of the development bank. The data were from semi-structured interviews with line managers, senior specialists and specialists. Data analysis and discussions is done per theme and subthemes. A theme is tantamount to a study objective.

For anonymity and confidentiality, participants were coded. Five interviews were conducted with managers and senior specialists. The participants were coded as A-MG-1, A-MG-2, A-SP-1, A-SP-2 and A-SP-3.

5.2.1 Case unit description

Please describe what your business unit does?

“IT has 3 function areas, which are the application development, desktop & infrastructure and IT governance. The application development area has developers and business analysts and they are responsible for development and configuration of existing applications. The desktop & infrastructure division has desktop technicians and infrastructure engineers. They are responsible for the ITHelpDesk, desktop and server installations, maintenance and troubleshooting system errors”.

The IT division reports directly to the office of the Chief Financial Officer (CFO). IT division is an enabler of business. The IT division supports and enables the business with technology and automation of business processes in order to accomplish business goals, objectives and mandates. That is, the IT division ensures that business information systems and applications are available at all times.

5.2.2 Case unit strategy & objectives

Describe the IT division strategy and how it manifests itself relative to the business.

“IT does not have a clear vision or strategy. What people call an IT strategy is not a strategy to me. I do not call it a strategy, I would call it an IT play book because it describes what we as IT are offering and the plans we have with regard to digitising the bank. I don't see it as a strategy, reason being, there is no 'the how part' of achieving that digitisation plan. And again, there is no clear roadmap of how this digitisation will happen”.

With the assistance of an external organisation, the IT division prepared a document referred to as the IT strategy. The development bank's EXCO and board of directors have approved the IT strategy.

5.2.3 Skills in the IT division

Does the IT division have skilled personnel to achieve what is defined in the IT strategy?

“In IT we have skilled individuals who are extremely knowledgeable in the areas of responsibilities they are allocated. Their knowledge and expertise is stifled by lack of room

to express themselves. The senior IT leadership is very operational in the way that it dictates how solutions should be implemented. But there are also employees within IT that are producing way less than their level on the organogram”.

No platform is provided for senior technical specialists to lead. Even though this is a basic management position, the employees in this position work in the same manner as the specialists below them. They have not been given the authority to lead. Their performance contracts contain no provisions for leadership.

5.2.4 IT division challenges and weaknesses

What are the challenges and issues you face in the IT division?

“We have capacity and capability issues. The IT leadership does not acknowledge these issues in their commitment on delivery to business. The delivery of projects are affected by our capacity and capability. Our resources are under pressure to deliver to a point where they do not deliver innovative solutions. The working conditions do not allow them to be creative”.

Critical positions in the IT division currently remain vacant, and to fill them, it typically takes more than a year. Due to this delayed acquisition of the critical skills, IT struggles to complete projects on time and under budget. The majority of projects have been completed later than scheduled, and the IT division frequently demands budget increases for projects because of these overruns. This could be because project scoping is not as efficient as it should be, resulting in an underestimate of time and budget.

Individuals in this case unit are willing to better themselves through training, but there is insufficient time to do so due to personnel overload.

The corporate governance (policies and procedures) are a disadvantage for the IT division's service delivery because of the amount of time they take to secure external IT services required. Critical system problems that require external resources and services stay unattended for long periods of times because of the lack of flexibility in the governance, procedures and the development bank's policies.

Another participant described the issues and challenges as,

“We are not able to properly enable business and automate their processes. We develop solutions without understanding exactly what the problems and challenges are in business. IT is overwhelmed and does not have time to spend on understanding where the problems are in business”.

The participant further stated that,

“There is resistance to change in the way things are done in the bank. The employees are not open to accepting new way of doing things and therefore new technologies are not easily adopted”.

As a result most IT division's personnel do not take accountability for deliverables they are assigned due to the lack of required IT support.

5.2.5 The strengths and opportunities in the IT division

What are the strength of the IT division?

“Our information security is strong. There is team work and collaboration in IT. Even though there are pockets of silos and the mentality to operate in those silos”.

The IT division performs a yearly survey for system users to assess their performance. According to the survey results, the organisation is quite satisfied with the IT services they receive from this case unit. This is not the perception the IT division personnel have when confronted with users during interactions either in meetings or when they are doing rounds at the user's workstations though. The IT division's experience with users appears to indicate that users are dissatisfied with the service the IT division is providing, which results in a high volume of complaints from users which are not reflected in the annual survey results. This means that the annual survey instrument used does not provide an accurate picture of IT division's performance and value.

5.2.6 Organisational business processes

The issue of the loans application turnaround-time is a huge issue in the development bank. Turnaround-time is the amount of time it takes the development bank to receive a loan application, process it and provide a decline or approval response to the client. The

current turnaround-time is long. Where is the development bank getting it wrong and how can the IT division assist?

“The organisation must have a special focus on documenting their business process, maintain and optimise them. A special focus is required to do this until all processes are optimised and aligned. Process bottlenecks and unnecessary requirements for documents must be done away with. Until then, this problem will not be resolved. At this present moment, each business unit is responsible for their own processes. There is no methodology for business processes management. The processes are not synchronised. This is not an IT problem. The IT division must come up with solutions that will cater for processes that are suitable”.

An external company was hired to review and document all business processes within the development bank for each case unit. The developed business processes have not been disclosed to the case units to date. The business processes documents were produced by the external company and are currently collecting dust and not being used.

5.2.7 IT strategy

Is the IT strategy robust enough to support the business strategy?

“The IT strategy must be supported by an enabling IT structure. The initial intention of the new strategy and structure was to break the silos within IT and to do away with one man systems. Applications or modules are one to one, which means one system to one IT personnel. The intention was to introduce multi disciplinary individuals responsible and knowledgeable to support several modules across the application catalogue. I do not see this happening”.

There is a great deal of risk associated with the IT division's staff and the systems they develop and support. Each system has an IT specialist assigned to it. If the specialist is unavailable due to leave or training, no one else has the technical capability to fill in for them. The team is not multi-skilled. One of the goals of reviewing the IT structure a few years ago was to decrease this key-man dependency risk, sadly, this has not happened. With the review of the IT structure and the development of the IT strategy, executive management commenced with the process of aligning the business and IT strategies.

Together with this process, they developed a process to evaluate and audit the IT division's skills and to review processes and systems. The strategy was shared with the board of directors, EXCO members, some senior managers and in some cases front line case units.

The IT strategy seeks to automate manual processes, interface systems, and streamline data to report one version of the truth for sets of objects that data is collected for.

5.2.8 How can the IT division improve?

What can be done to improve the IT division in order for them to provide better support for the business strategy and business units?

“Our department needs an executive manager that will be part of EXCO. The bank must create a CIO role that will assist with and be part of the the development of the business strategy”.

The IT division's non representation at EXCO should not be undermined. One of the most important problems confronting the IT division is its ageing IT infrastructure. This matter requires immediate action. However, due to a lack of knowledge of the critical nature of IT infrastructure in enabling the development bank's functions, funds have not been allocated for the renewal of the IT infrastructure. The implementation of a cloud strategy has been delayed. A cloud strategy must be developed which will cut IT operational costs and enable delivery of services with speed.

The IT division is trying to be effective in how it supports and enable business but it fails because it does not get the prominence and proper representation it should get at the highest levels of the organisation like the board of directors and EXCO.

How can the IT division be better positioned to understand business issues and problems?

“For the bank to draw value from IT, business analysts must be recruited to be part of business. Their role will be to bridging the gap between IT and business. If however the bank cannot afford additional employees because that will increase head count, then IT champions must be appointed and trained from the existing staff within business units”.

Case units must be more involved in the solutions that the IT division is providing. Business takes a back seat when technology is involved. They present a problem to the IT division and sit back hoping for a working solution at the end. They do not get involved in the solution.

Information sharing between users and the IT division is highly recommended. The different functions must collaborate and work together in initiating projects through brainstorming sessions.

The implementation of the Architecture Review Board (ARB) which has a representation from key resources in the IT division, provides for new ideas to be reviewed and tested for innovativeness.

5.2.9 The role of the IT division

The IT division should evaluate all other case unit's business strategies and the organisation's business strategy to guide alignment. The IT division should be partnering with business to understand the business strategy and business processes.

The function of the IT division is to develop business information systems and applications that will enable the business to perform effectively. They make information available, enable communication and store information on servers. The IT division should enable and support the business to reach its strategic objectives. It must provide systems that are always available with the required confidentiality and to enable business processes.

5.2.10 The leadership of the IT division

How do you feel about the current IT division leadership and style?

"I feel like the IT leadership is not open to differing view points. It is set on over promising what it cannot achieve based on its current capacity. The needs of the business strategy are beyond what the current IT structure can do. Now that there is moretorium on recruitment, it is even worse. The IT leadership must appeal to EXCO for more IT resources to achieve the current objectives of the IT strategy".

The demands from business on the IT division are not proportional to the capacity of IT. Added to this is the failure of the development bank to recruit the right personnel for the IT division.

5.2.11 Contribution of the IT division in enabling the case unit

The organisation is not satisfied with the support they receive from IT. In most cases, non IT staff, do not understand technology and struggle to understand the role of IT. The IT division overwhelms the organisation with rolling out many various IT solutions in a short space of time. This happens mostly without the IT division reviewing the adoption levels and buy-in of the organisation on systems rolled out previously.

5.2.12 Business information systems and applications to enable the case unit

Are the current business information systems and applications adequate to take the development bank into the future?

“We have implemented SAP, which is an Enterprise Resource Planning (ERP) system for most of the main functions in the bank. It is keeping the bank afloat even though it is not used to its full capability. Because of its huge scope, there are functions that have been enabled in SAP but they have not been configured to meet the user requirements. This then leads to other system being brought in to close gaps. Therefore you end up with two applications with more or less the same capabilities. In this regard then you find applications clashing with regards to capabilities instead of complementing one another. For example the SAP and Excalibur systems are all have the debt management function. SAP has an Arrears Management module that has been enhanced however a caution was made not to over customise it to cover all the debt management activities”.

There is a tendency for the different business units to outrightly instruct the IT division to purchase systems they require based on personal experience without looking internally to see if there is an existing system that can be enhanced to perform the same function. Such decisions on business information systems and applications lead to systems with duplicate capabilities in the same organisation, which is fruitless and wasteful expenditure.

5.2.13 IT infrastructure to enable the case unit

What is the current status of the IT infrastructure?

“What I know is that the current infrastructure is very old and outdated. It is not flexible and cannot be scaled up. The importance of infrastructure is ignored in the bank according to my observation. There is no investment on infrastructure currently. The bank is running an old infrastructure that is out of support, out of warranty and costly to maintain should it break. The infrastructure state is shabby and in very poor condition. There are no committed plans to improve the current state”.

When responding to a follow-up question of how IT can be improved, another participant said,

“The entire infrastructure must get a make over. The only way is to invest money into the renewal of the infrastructure. Further to this, monitoring tools can be acquired to enable technicians to be proactive in dealing with hardware failures”.

The position of the manager of the IT infrastructure had been vacant for more than a year. During this time period, an acting manager was appointed. IT infrastructure is not a priority for the bank or its leadership since they do not comprehend the relationship between the business information systems and applications that support their functions, and the IT infrastructure. The infrastructure services are not clearly defined for the organisation to understand.

5.2.14 IT structure

What are your thoughts on the new IT division's structure?

“The new IT structure is not adequately capacitated to support the bank. The gap analysis could have been performed before the old structure was changed into a new structure. The current and new structure is not fit for purpose. The current IT structure is not aligned to the IT strategy. The current structure cannot implement the current objectives of the IT strategy. The IT employees do not have the skills to implement new things such as digitisation, integration and automation without hiring new people that are specialists in those areas. The new strategy is based on old employees and their skills”.

To complicate matters even further is that the morale is low in the IT division because they are struggling to adjust to the new structure that have recently been put in place. The management of the IT division is worried because there is fierce competition for the IT resources in the market and the development bank does not have a retention and promotion policy for key roles.

The organisation has put a moratorium on recruitment. Certain functions can be outsourced if and when required, however, with the budget constraints experienced by the bank currently, it might not be an easy decision to make for executive management.

5.2.15 Communication between case units and the IT division

Does the IT division and other business units communicate and how effective is their communication?

“The communication between business units and IT are mostly done through committees and at the levels of the executive management and board. There are no forums at senior management, middle management or specialist levels where staff can collaborate at different levels”.

The communication between the development bank's departments and the IT division is further hampered by the lack of understanding of the technology by the system users. Technology has a certain language which is technical and users are not comfortable with it, they prefer business talk which is devoid of technology. On the other hand, IT staff do not understand the business language. The business language revolves around business processes, products, economics, finance, sales, clients, agriculture and farming. This is the reason business analysts are required to close this gap.

5.2.16 Demonstration of IT value

Explain how the IT division demonstrate its importance or value to business?

“There is no formal platform or structure for IT to demonstrate its value to the bank. It is obvious that there is value that it adds. There are informal and unstructured sessions where IT would ‘show and tell’, do systems demos and inform business units what their IT strategy

could mean for them. These are however no structured processes and platforms and therefore not easy to see if they make an impact”.

The IT division must initiate roadshows that will assist them to demonstrate ‘what they do’ and ‘why they do what they do’. This will make the IT division’s value-add visible. Explaining how they are structured and why, will also demystify IT. The departments do not understand the processes and IT structure.

5.2.17 Case Units and the IT division partnership

Describe the partnership that exists between business units and the IT division?

“IT must engage business units and listen to their issues, understand their strategy and how they intent to achieve it. IT and business units needs to agree on what is priority and these needs to be formalised and approved by the appropriate committee”.

The partnership between business unit and the IT division should be one that highlights the value that each of them are adding to the business strategy. Business units should appreciate technology that enables business processes. Business units need to understand who makes up IT, what they do and how they do what they do.

5.3 SECTION 2: CASE UNIT B - BANKING OPERATIONS

This section provides data analysis and discussion of findings from Case Unit B: Banking Operations Unit (BOU) of the development bank. The data were from semi-structured interviews with line managers, senior specialists and specialists. Data analysis and discussions are done per theme and subthemes. A theme is tantamount to a study objective. This business unit forms part of the SBUs because it forms part of the core function and has a direct effect on the mandate of the development bank.

For anonymity and confidentiality, participants were coded. Five interviews were conducted with senior managers, a manager and specialists. Participants were coded as B-SM-1, B-SM-2, B-MG-1, B-SP-1 and B-SP-2.

5.3.1 Case unit description

Please describe what your business unit does?

“BOU facilitates banking transactions. We facilitate the actual applications for funding through 3 divisions in provinces across the country, which are Gauteng, Free State, Mpumalanga, Northern Cape, Western Cape, Limpopo, Kwazulu Natal, Eastern Cape and North West. Each of them have satellite offices which are a point of presence. There are dedicated Commercial Bankers and Agri-Specialists in the satellites. The Commercial Banker is the first point of contact and communicates with clients. If someone want a loan from the bank the would typically speak to a Commercial Banker. They facilitate the process of starting with the application. Commercial Bankers perform the prescreening where the Agri-specialists will assess financial position and the commodity that applicants would like the bank to finance and whether they can afford to repay the loan that they are applying for. If the bank has appetite, we then proceed with the formal application where involve the business analyst and the provincial manager who would assist in submitting the application to the Credit business unit for assessment”.

The BOU is a client-facing business unit. It is responsible for increasing sales of the development bank’s products. It has two divisions: commercial and development, and corporate.

Commercial and development division

The commercial and development division is made up of 9 provincial offices spread across each province in South Africa. Each provincial office has one to two satellite office which serves as a point of presence. Commercial and development is mandated to conduct transactions worth up to R100 million and is focused on individual farmers seeking production loans, livestock loans, and mortgage loans, among other products. The commercial and development is also responsible for transformation or development deals. Development deals can be in the form of employee share schemes and/or partnerships between successful commercial farmers and black new entrants.

Corporate division

The corporate division is made up of two regional offices, one in Johannesburg and the other one in Cape Town. The corporate division seeks to acquire big agro processing enterprises and agricultural cooperatives through transactions worth at least R100 million.

They involve the private sector in the development of historically marginalised farmers. The division is responsible for originating, negotiating, restructuring and managing relationships of development deals. The deals could be new projects or the purchasing of shares, mergers or equity (bank's shareholding) injection in established corporate businesses turning over R25 million and above by the historically disadvantaged individuals.

5.3.2 Case unit strategy & objectives

When and how does your business unit formulate their strategy?

“On a yearly basis we conduct a strategy session to align all the divisions in the business unit because they all form part of the bigger unit. The strategy though has never been shared with any other business unit because of the changes in leadership probably. A while ago when the previous CEO was in charge, he would make sure that everybody puts their strategy up and everybody discusses it. That was very beneficial for the bank. The strategy was formulated by all senior managers. Senior managers would get input from the teams. The business strategy is both top-down and down-up”.

Over 70% of the company strategy's objectives are contingent upon the BOU. The development bank's objective is to increase direct lending at the expense of indirect lending. Indirect lending occurs when a bank partners with an external organisation to provide loans on its behalf. The indirect lending loan book forms approximately 55% of the total loan book. The development bank would like to aggressively change this pattern. Based on this, the development bank has begun a program to take back the loan books and manage them internally. This will be managed by the BOU.

5.3.3 Case unit challenges and weaknesses

Are you successfully supporting the business strategy, if not, why are you struggling to support the business strategy?

“If we look at our performance contracting, our score cards, and the time that we spend on what we do, it is not exactly aligned with the end goal. There must be proper contracting at executive level and not just a copy and paste of the corporate score card. We must look

at projects and be very clear on which ones of these projects and initiative are required by when to get us to where we want to go. Rather focus on a few doing too many things and not doing it properly. It is about sequence as well, what comes first. I think the next part that we are missing is - we have tried to do that in our business reviews to some extent but it has not happened the last year probably – taking stock against the strategy at a company level probably once a quarter, but at a divisional level probably once a month. To check if we are on track and holding each other accountable.”

When asked the same question, another participant said,

“The difficult thing is deciding on the price as an example. I would not be writing memos for pricing if IT had a system. We would capture the loan amount and other aspects of the loan and at the end of the day the system would tell us what the bank will make. If we are not happy we write a motivation and within 24 hours the entire pricing would be completed. The problem here is that the pricing tool is manual. I should worry about the pricing tool? I need to do it on the system. Why do I need to go to the committee”.

The majority of the BOU's business processes are manual, with little to no automation of customer onboarding technologies. The issue with manual processes is that the users take longer to complete transactions, which results in the development bank losing clients. Another issue they encounter is the accuracy with which data is captured. In addition, data is easily manipulated due to the tools used. The business unit's primary challenge is turnaround time. Without visiting the development bank's office, there are no alternative methods for prospective clients to contact the development bank. There are other channels for applying for loans online.

Operationally, the case unit is inefficient. They can report on turnaround times, net promoter scores, and so on, but they are unable to generate data that can be used to make proactive decisions at the divisional level. Employee performance management is impacted by a lack of systems and effective reporting. The business unit is unable to identify and reward top performers. The performance targets and the financial targets of the company are out of sync. Appointments to critical positions are made at an unusually slow pace. For more than two years, the executive manager of this case unit has been in

an acting capacity. There are numerous people in acting positions. Which means they are accountable for two roles, impeding the team's performance.

There is no centralised data storage. Because data is not kept in many different locations and not a central location accessible to all, it becomes unreliable and out of date depending on where you discover it. The data should be accessible to everyone who requires it. The business unit devotes considerable work to preparing reports and distributing them to various case units and committees.

5.3.4 Organisational skills

Is your business unit doing enough to address the problems that the development bank is facing? What are creative solutions that you have implemented to resolve these business problems?

“We are doing our best to resolve these problems. Innovative ideas have been suggested to the executive but not implemented because the innovation programme has not been implemented successfully. Daily operational management, non-performing loans tracking, client visits tracking system that can assist with proactively assist the customer before they fall into the arrears are not available”.

The staff in the business unit understand the business and the industry. The staff is focused and passionate about what they do. They are committed to make development farmers succeed and transform into commercial farmers. Despite the frustrations, staff stay on because they are able to see the lives of members of the community transform. The customer survey has indicated that the business unit staff is professional, solution oriented and have knowledge of the sector. The staff is acknowledged for having the client's best interest.

The strength of the development bank is that it is true to its mandate on primary agriculture. The development bank has employees with agricultural knowledge especially with the Agricultural Economics employed by the BOU.

5.3.5 How the case unit supports the business strategy?

How does your business unit support the business strategy?

“I think this is where we have failed in the past, we try to do so many things where as we need to prioritise better. Actually we need to pick those things that are linked to the strategy. I think the problem is that we are trying to fix both the fundamentals and also to get ahead of the game and right now we are not getting ahead, we are actually behind. So we are in firefighting mode that means that we are so busy with surviving and that we do not get value add of it. How it should work is that once we get the corporate strategy and it is approved, we must unpack it in a proper roadman and have a proper strategy alignment map that depict where we are going as a company and at all staff should know what we intent to do and what is the steps we are going to take to get there.”

Due to the huge size of the business unit, on an annual basis the business unit develops a major strategy that aligns all division's strategies. This business unit's strategy is not aligned with other business units, only the business strategy. Except for the top managers, no other business unit employees have involvement into this case unit's strategy formulation.

The business unit has for the most part failed in the area of supporting the business strategy because there is no focus on the strategic objectives in their operations. Their business strategy should have been properly communicated to everyone in the unit, and a comprehensive alignment map created and shared with all employees. This was never accomplished. The scorecard should have been developed in conjunction with the strategic initiatives. The business unit has undertaken numerous projects that may or may not have impacted the business strategy. There is no strategy alignment between the business units. The business unit makes an attempt to align, but has not done so in a long time. Continuous alignment at the business level should occur once every quarter, followed by monthly alignment per business unit. After that, monitoring must be carried out operationally via dashboards. The operations management component, which is committed to ensuring operational alignment, is missing.

5.3.6 Organisational information needs and processes

What is the information that you require internally and externally for your business unit?

“I think at the divisional level, typically, we need to be able to populate the executive scorecard. We use that as our gauge of whether we are on track or not. So they will include financials. Typically we get the financials too late. So we which be probably six weeks after month-end. So getting the financial information because that's critical. We need to understand the financials, we need to look at the performance of the book and where there are gaps. We need to look at operational expenditures. So there's there is a strong financial management. But the other component is in terms of our lending activity, so disbursements, approvals, cash commitments, and those available and were able to withdraw that. Then there's other components where we need to report on the impact of what we doing, report on development in true nature in terms of how many deals for women and youth, how many for black owned entities”.

The business unit obtains the majority of the information it need from the client to determine the client's financial position. The client will share their information by filling in a physical application form. The Deeds Office, Home Affairs, Dow Jones, and Credit Bureaus web portals are accessible and used to draw the applicant's credit records. The lack of an automated third party verification is a gap that the IT division needs to close. The services are not automated. The commercial bankers need external information in the form of trends on agricultural industry, property values for security provided, price per commodity and credit information of applicants amongst others. They also require financial statements from the client. All the information is acquired manually at this stage.

To populate the performance score card, the business unit requires data such as the financials. The financials data is necessary, which they obtain late due to the laborious production of month end reports. Financial statements will assist in determining loan book performance and operational expenses. Additional financing data is available on SAP. The data supply can be enhanced because it affects other areas of reporting due to a lack of data in our systems.

The business unit is also responsible for creating a lot of reports on a daily and monthly basis for EXCO. These reports take time and are prepared manually. Industry data is collected from the industry expert's on subscription basis. Data is requested manually from them and it is sent through emails in order for the case unit to prepare industry

reports for executive management. Client's financial information is provided manually and is captured on different systems that are not interfaced with each other. To develop reports, the case unit relies on Microsoft Excel tools and functionalities.

5.3.7 Resources and skills in the IT division

Are the IT division resources allocated equitably and effectively?

“I'm not sure if we're getting value from all the resources. I'm not sure if they're misplaced. But now I've been going on about dashboards but we have, I think, three people that work in this space were eventually able to deliver these. They obviously have dependencies. The staff is very good. They are strong. We understand that you have to give proper guidance, and they will make it happen. So there are other guys that are not that strong. But so yeah, so far for prioritisation, I think so I think we've tried to find a logical sequence of things. I think this year is certainly challenging that that sequence and the timing, and saying why should it take so long? But so where I am, where I feel there's a lack and shortage, maybe that's with the business analysts. I think those type of skills where we think we know what we want from a business point of view, but the conversion or we get more than those requirements document. There is a huge gap with business analysis skills at the moment”.

There is a logical sequencing of operations in the IT division and the resource allocation seems to work to a point. The problem is the few business analysts in the IT division that are spread thinly throughout the business. There is a need for system integration. The lack on system integration skills causes duplication of work for front end workers because they have to capture the same information on multiple systems. The staff in the IT division is knowledgeable and always willing to assist with the IT division related services. Individuals are friendly and ready to provide support especially the Help Desk services. There is sufficient knowledge about the business information systems and applications used in IT.

Mobile applications and mobile tools can also go a long way in enabling the field workers and sales staff. There are no analytics to inform the development bank of the performances of the farmers being financed by the development bank. This lack of analytics lead to partners financing farmers beyond the development bank's credit

policies and in turn exposing the development bank to reckless lending and financial loss due to non repayment ability. The lack of analytics makes it impossible to identify performing clients and non-performing clients. The case unit spends a lot of time trying to slice and dice data for reporting to executives.

5.3.8 The challenges and weaknesses of the IT division

When you compare the development bank's IT services and tools to the banks that you have worked for in the past, what is your experience?

“For previous banks that I worked for, the IT would provide information that I have asked for, solutions for clients and also give you a risk analysis. I have found that it is a bit absent in this current IT of this bank. The knowledge side was different. They wanted to know how they can support your business. A lot of times they were part of your team meetings. Not every week but this is what I want. I would say there is quite a room for improvement for the IT division to because they are a driver of business”.

Technical tools are not available and the business unit ends up creating their own tools to assist them with day to day operations, mainly based on spreadsheets. These tools are created by individuals and some are used within a single division or business unit creating shadow IT.

There is a clear bottleneck in the IT division when it comes to business analysts. The manual process of storage of documents on shared folders is a risk because there is no access control on the folders and those files are not properly protected.

5.3.9 The strengths and opportunities in the IT division

What are the current IT strengths and opportunities?

“We are currently using mobile devices even though it is at small scale and in wrong hands. This can be expanded to the sales staff that is mobile. I think some of the staff, is like mobile type solutions could be easy to deploy and use. So we have the platforms to work on whether the CEO wants to have his app or we want to have an app for when you do a farm visit, you take pictures, you upload the pictures and the application form on your iPad, and you're done and dusted. So some of those things are possible through mobile solutions,

where we can have CRM for each appointment, like a sales rep in any environment. So easier ways to keep these things to buying them and having it updated through mobile applications”.

The development bank has implemented a new system called the CRM system, which will aid in the collection and tracking of loan applications.

The IT division appears to be cognisant of the difficulties and challenges that is faced by business. They have created a comprehensive road map for this business unit, and work has begun, most notably with the implementation of the CRM system. The IT division is evolving from a support business unit to a collaborative partner as far as this business unit is concerned.

5.3.10 IT strategy

The IT strategy is shared with front line business units, EXCO and the development bank’s board of directors. It is not shared across the the entire bank with all business units. The executive managers of varied business units are not involved in planning and creating the IT strategy, it is created by the leadership of the IT division and external consultants and then presented to the EXCO and the board of directors for adoption.

5.3.11 Opportunity identification

Which opportunities has the IT division been able to identify and implement in your opinion?

“Yeah, I think mostly there's been a shift from IT being the helpdesk to it becoming a partner and trying to make things work better. So I certainly think in the last two years, there's been a shift. I can remember our first meetings where the question was, what do we want? And why do we want it? We moved from there to really trying to solve things together? Yeah. So I think that's been a journey as well. Yep. And a good one in that sense”.

The IT division should be able to provide solutions that assist with product development, provide automated pricing, risk ratings applications, and provide tools that can assist with risk analysis with ease and using the latest technology. The IT division must form part of the front office function by creating banking apps that can play a part in attracting clients

and therefore creating additional channels for potential customer to get loans from the development bank.

5.3.12 IT infrastructure & business applications

Does the current IT infrastructure, systems and applications add value to your business unit's needs?

“If they were able to respond quickly to our queries, maybe yes. That is where they could start. Their response time and support is slow. IT needs to be a little bit faster in terms of providing solutions”.

The IT division should have the IT infrastructure necessary to support the business unit's effectiveness and efficiency. The IT division has hampered the business unit's ability to operate effectively and efficiently, mostly due to a lack of system integration. The IT division can automate manual operations such as loan applications and the creation of a customer application portal. The IT division should provide the appropriate solution to support the business's operational model. The IT division must comprehend the business units' operations. IT must give precise data analytics to the company for decision-making. The business strategy should be guided by analytics.

5.3.13 IT structure

The IT division staff is extremely helpful. The help desk services and technicians that support the business unit are satisfactory. The management of the IT division has closed the gap in being proactive with the solutions that enables business.

5.3.14 Case unit's understanding of IT

The organisation has corporate induction for new employees to inform them about what is available bank wide. The induction does not however filter down to the business units where they must focus on inducting new employees on their responsibilities and IT systems available for you to use. This causes misalignment and under utilisation of systems.

5.3.15 The IT division's understanding of case unit's strategic objectives

Does the IT division understand the needs of your business unit?

“I think step one is understanding what to do, and understanding what the client expects. So they just paint the scene. As a first outward look to say, what our clients expect of us? What is the competition doing around us? And how are we operating in this environment as a bank? So I think that external understanding is a lot easier to start looking at for internal solutions. But I don't think it should be the other way around. I don't think we should solution for things and then see if the clients happy about it. I mean, sure we want to test the feedback, but my expectation is certainly that there's a there's a broader view to say what are we benchmark against, understand how we work, because of that end-to-end understanding is of all the activities that is fulfilled, from origination all the way through to disbursement and maintaining accounts”.

There is general lack of internal collaboration within business unit. The business unit strategies are not shared with the IT division and therefore it making it difficult for the IT division to align their strategy to support this units.

5.3.16 Scope and architecture

If you were given an opportunity to improve IT, what would you do?

“I would ask top management for a massive budget for systems and infrastructure upgrade, and system integration. To buy more systems and quickly get us to be a new generation bank. IT has stopped asking for what they know we need. When you have asked for too much you just give up”.

When asked the same question, another participant said,

“IT needs budget. IT must be able to bring in new incumbents and have the budget to scale up implementation at speeds where necessary. Project Managers must be in IT to manage technical projects”.

The development bank's technology will need to be scaled up. To manage the IT projects, senior IT division project managers must be appointed. Business units must have a close

relationship with the IT division to influence IT solutions rather than simply accept whatever the IT division determines to be the business unit's solution.

The IT division must leverage current technology and build systems that increase the number of channels available to potential customers wishing to communicate with the development bank. The digital platform should be expanded to include mobile and electronic loan applications.

5.4 SECTION 3: CASE UNIT C - STRATEGY AND COMMUNICATIONS

This section provides data analysis and discussion of findings from Case Unit C: Strategy and Communications of the development bank. The data were from semi-structured interviews with line managers, senior specialists and specialists. Data analysis and discussions were conducted per theme and subthemes. A theme is tantamount to a study objective. This case unit is a support function and not a strategic business unit.

For anonymity and confidentiality, participants were coded. Three interviews were conducted with a senior manager, a manager and a specialist. The participants were coded as C-SM-1, B-MG-1 and C-SP-1 respectively.

5.4.1 Case unit description

Please describe your business unit and what you do?

“Our business unit is responsible for marketing & communications, strategy and enterprise project management & organisational integration. The marketing and communications division promotes the bank’s products and handle internal and external communications. We are responsible for agri related research which should inform product development, performance of commodities and which commodities should the bank be investing in”.

5.4.2 Case unit strategy & objectives

How does your business unit support the business strategy?

“The business unit is very key to the successful delivery of the business strategy. The board is responsible for developing the strategy. The EXCO develops strategic initiatives that are

delegated to the CEO and the EXCO to develop. The PMO committee that is coordinated from our business unit has an overview of all strategic projects running at any point in time. The PMO is key to assisting the organisation in achieving its strategy. The business unit makes sure that the project being implemented are strictly focused on achieving the strategic intent of the bank. These projects are prioritised and streamlined and implemented in a formal way that follows a certain methodology”.

The case unit’s strategy division looks at internal and external factors that affect the objectives of the bank and develop strategies to respond to them. It also looks at business operations and identify where there are short comings with regarding to addressing issues that have direct correlation with the business strategy”.

5.4.3 Case unit challenges and weaknesses

What are the challenges and weaknesses of your business unit?

“The organisation’s tedious processes, slow and unfriendly processes are a cause of great unhappiness for most people. This also results in dynamic young resourceful individuals leaving the bank as a results. It is difficult to work in an environment where you struggle to achieve most of your deliverable because you literally have to fight for everything. The people in this organisation do not see the bigger picture. Our processes are not efficient. Our turnaround times are the worst compared to our competitors”.

More than one participant from this business unit has stated that the marketing of the development bank is not visible enough. Most South Africans are not even aware that the development bank exists. The marketing of the development bank can be pushed aggressively and new platform such as social media and other different platforms can be used to make the development bank more visible.

This business unit is responsible for ensuring that all other business units within the development bank formulate strategies that are consistent with one another and with the organisation's overall business strategy. There is a disconnect regarding the synergy of case unit plans. This results in the organisation becoming reactive rather than proactive in addressing the development bank's difficulties.

The business unit is responsible for developing programmes to support the execution of the business strategy. In this bank, project management is a new discipline. It was implemented to ensure that work is consistent with the business strategy. The issue is that the development bank lacks a culture of project management. Project management is time-consuming and needs a high level of commitment. Nonetheless, the majority of projects begun without consulting the Project Management & Organisational Integration (PMO), resulting in the expenditure of time and resources on initiatives that do not contribute to the achievement of the business's strategic objectives. To instil a project management culture throughout business units, the PMO has appointed project champions. The issue is that executive managers do not involve project champions in their initiatives to the extent that they should.

5.4.4 Case unit strengths and opportunities

What are strengths and opportunities that your business unit can exploit?

“Project Management is new. When it is implemented well, projects would be handled in an effective way to make sure that they benefit the bigger team of the bank instead of just divisions in the bank. The business units are interrelated and what they do impacts on each other. The advantage of centralising projects is that the benefits of any project can be stretched to cover other units as well and contribute to the business strategy”.

Within the development bank, the PMO is establishing a center of excellence. The project champions attend bimonthly PMO meetings and provide updates on initiatives within their business units. Templates have been created to assist champions with the completion of project reports. The PMO has created toolkits. These toolkits are created using Microsoft Word and Excel. Also, there is a disconnect in expenditure on projects, which the PMO has helped to highlight. In the majority of cases, project expenditures exceeded the actual cost in finance.

The PMO committee is now responsible for evaluating and approving projects that align with the business strategy. Also, projects are evaluated for their likelihood of success in light of their planning, scope, and capacity. At the very least, this has reduced the issue of projects being launched and then failing to be completed due to improper planning.

The PMO has mandated that all projects create project steering committees. This has also resulted in an alignment of the project's progress and costs. While project steering committees give operational guidance for a single project, the PMO committee provides strategic direction for all major initiatives. The PMO committee continues to function long after the project is complete to track the project's benefits.

5.4.5 How does the Case unit support the business strategy?

What are the things that your business unit can focus on to resolve a big the part of the organisational problems?

“The processes in the bank needs to be adjusted in a manner that will assist the development farmers to be able to meet the minimum requirements of getting loans approved. Credit requirements and policies needs to be looked at because at the present moment farmers are struggling to meet the requirement”.

The PMO is responsible for prioritising projects and establishing project governance for enterprise-wide reporting. The PMO is tasked with implementing a programme that will review and and improve the development bank's business processes and policies. The objective of this project is to develop forms and tools that will be easy and quick to use to improve turnaround time for loan application.

5.4.6 Organisational information processes

What is the information that you need operationally and how do you receice it?

“The information that our business unit use is brought to us manually. The reporting on monthly basis on the progress of the projects in on Excel templates. I should add that we struggle to get the business units to complete reports that form part of our operational inputs”.

Additional information required is the project budget information and running costs against projects. Analytics are required to assist markenting and communications with product performance. A competitor analysis report is required to understand what the competition is doing. The business unit reports on quarterly basis to the main shareholder of the

development bank by consolidating different reports from different business units manually.

5.4.7 Skills in the IT division

In your opinion, do you think there is insufficient skills in IT?

“No, no I don’t think so, really. There is enough skill in business and in IT. The bank is now losing people in specialised areas because of the processes that are rigid. People struggle to do the simplest of things. In IT people have skills but they do not have the opportunity to show case those skills”.

According to the participants in this business unit, the IT division demonstrates willingness to support and enable the organisation. There should however be a clear roadmap that is agreed to by business units in terms of what the IT strategy must achieve. There are skills in the IT division to embrace the new technologies to the development bank’s advantage and to compete on equal footing with other lenders in the agricultural sector and commercial sector.

5.4.8 The challenges and weaknesses of the IT division

What are your challenges?

“Our division has developed manual project management tool kits to manage the project administration and documentation. Unfortunately the tool kits are not as usable and friendly as they should be because they are manual. The adoption of these tool kits is extremely poor. We have requested for these to be automated by IT”.

To reduce manual processes, PMO toolkits may be automated, or project management software may be purchased or developed. Microsoft Projects (MS Projects) is the most straightforward tool for monitoring projects. But because not everyone in the business unit has MS Project installed on their workstation, collaboration with colleagues on project monitoring is challenging. A project management tool can assist in ensuring that reports are objective. A suitable project management technology should be installed to link progress and budget and to highlight dependencies. Currently, these two are

administered separately, which makes tracking more challenging. The PMO should be capable of developing the master schedule report for presentation to EXCO.

Other IT challenges are the workstations that are allocated for use in the business unit. The laptops are old and slow.

5.4.9 The strengths and opportunities in the IT division

The establishment of a learning portal to enable business units to access training and company documents is a significant aid and enhancement. This platform has been used to provide ethics and governance training, which has proven to be quite beneficial to the staff.

In response to the South African government's response to Covid-19, which requested organisations work from home, the IT division responded quickly, and the shift was simple.

5.4.10 IT strategy

What do you think the IT strategy must focus on?

“IT must stop being implementers, they must be enablers. IT ends up driving business projects and it consumes a lot of their resources. This approach disempowers the other business units in the bank because they do not take accountability. As a result the business units struggle with adopting systems that have been developed. This will free up the constrained resources within IT and bring focus on what IT needs to deliver against the business strategy. The business needs to mature and find a way to define their requirements. In so doing, they will own the problems and take accountability of resolving them. Their lack of focus tends to make them loose the core responsibilities of technology such as creating platforms to reach the market like the implemenation of the social media strategy and other technologies that can make the bank visible”.

The majority of staff in the development bank's business unit are unaware of the IT strategy. This demonstrates that the majority of business units' strategies are poorly communicated inside the development bank, implying that alignment throughout business units is a concern.

The IT strategy must incorporate technology platforms such as social media, podcasts, and banking apps to increase the development bank's visibility and awareness. With the usage of drones, the farming community is embracing technology.

5.4.11 Projects assessment and prioritisation

The PMO formalises and prioritises the projects with regards to what needs to be achieved within a particular period. The PMO also evaluates the dependencies within the projects and they recommend prioritisation of projects to EXCO.

5.4.12 Contribution of IT division to enabling the case unit

What can the IT division do to simplify your work?

“Our work has so much administration and manual tools. IT makes it difficult to work. Systems are needed. We need to perform work at the press of a button”.

There is a strong preference for Microsoft Excel-based tools over automated systems. Additionally, there is a significant lack of system adoption. Where systems exist, staff, for example, utilise Microsoft Excel in conjunction with finance systems to confirm figures. IT is trailing behind in enabling this case unit's processes.

5.4.13 IT Infrastructure and software

If there is one things that the IT division can do to make your work easy, what would that be?

“A project management tool is required to link the project progress to the budget. Currently we running these separately and manually. We do not even have an MS Projects tool to monitor projects. MS Projects assists to monitor projects and it identified which projects needs our intervention. But then again, there is this issue with our network, our infrastructure and hardware are not up to scratch, honestly”.

Through the use of software and IT infrastructure, the IT division should enable the organisation to run its business. The IT division must take the lead in educating the organisation about the available technology. The IT division's role is proactive, advising businesses on the availability of business solutions. The IT division needs to push for

using existing systems rather than purchasing new business information systems and applications every time a new requirement arises.

Is the IT division and IT systems flexible enough to support the development bank?

“The systems seems to be old. Our IT struggles to adapt to new requests from our business unit and external needs of the clients. Our clients are technologically survey already and our systems are not adapting. They are not the best. The bank has the tendency to purchase applications that end up not being used because of the pressure they receive from the business units. Business unit sometimes put IT under pressure to purchase certain products that they will not use at the end of the day. This takes money away from efficient and effective systems that could have been purchased to fit the purpose”.

The adoption of systems such as SAP does not appear to be meeting all of the organisation's requirements. This ERP system addresses the most typical business processes, including finance, human resources, supply chain management, and banking. However, there are other business requirements that these systems do not appear to fulfill. As an example, consider the need for system flexibility and analytics.

5.4.14 IT structure

Why do you think the IT division is failing to support the business effectively?

“We understand that IT has an issue of capacity. I have been at the end of lack of service delivery from IT for a long time. IT has been struggling to install MS Projects application on my machine. They do not know what the problem is. This has been going on for months now”.

All three participants in this business unit acknowledged the issue of the IT division capacity. Their initiatives and requirements have been delayed due to the IT division's overwhelming volume of requests from other business units. The IT division has a capacity issue. Projects have been paused due to the present the IT division staff's workload.

5.4.15 Prioritisation of IT projects

The EXCO identifies strategic projects. During the budgeting process, business units are invited to list the projects they intent to implement during the financial period. The PMO then prioritises all project including those that have a bearing on IT. The prioritised projects are then included in the corporate plan with the allocated budget.

5.5 SECTION 4: CASE UNIT D - POST SALES SERVICES

This section provides data analysis and discussion of findings from Case Unit D: Post Sales Services business unit of the development bank. The data were from semi-structured interviews with line managers, senior specialists and specialists. Data analysis and discussions were conducted per theme and subthemes. A theme is tantamount to a study objective. This business unit forms part of the SBUs because it froms part of the core function and has a direct effect on the mandate of the organisation.

For anonymity and confidentiality, participants were coded. Three interviews were conducted with a senior manager, a manager and aspecialist. The participants were coded as D-SM-1, D-MG-1 and D-SP-1 respectively.

5.5.1 Case unit description

Please describe what your business unit does?

“Our business unit takes responsibility of the deals after they have been originated and approved. We perform due diligence on all deals to make sure that the contract in place with the customer is captured precisely as is on the system and all documents are in place. The monitoring happens through getting in contact with the client and making sure that the customer understands their obligation. We monitor that the monies are used for their intended purposes on the farm and all assets that are used as collateral are still on the farm in good condition. We monitor the client until they have paid up or are handed over to legal accounts”.

The business unit is comprised of the monitoring and workout services, customer data, and restructuring divisions.

After a loan is granted, the Customer Data section conducts due diligence on all transactions. They verify the accuracy and completeness of all contracts and other legal papers. They evaluate the deal's requirements and ensure that all necessary and supporting documents are attached to and approved as part of the deal's preparations for auditing, if it occurs. They also monitor the alignment the SAP system with all contract conditions.

The monitoring services section is responsible for ensuring that funds are used for their intended purpose and for providing ongoing monitoring of moveable and immovable assets. They contact consumers who have fallen behind on payments and work out payment arrangements if necessary.

When a consumer is having difficulty repaying their debt, the Workout & Restructure section is contacted. This division is made up of business rescue professionals. They write recommendations to rehabilitate failing businesses to aid the customer in resuscitate their farm. Otherwise, the matter is sent to the recoveries process. The recoveries process is an activity designed to recoup all outstanding funds through the sale of customer collateral and security.

5.5.2 Case unit strategy & objectives

What are the objectives of your strategy?

“Some of the objectives in our departmental strategy requires that we reduce non-performing loans by proactively monitoring the bank’s assets before the farmers are in distress. We also manage the organisation’s inherent risks by applying strategies to mitigate the bank’s risks in order for it to function optimally. We are the custodians of the bank’s collateral. We do inspections and valuations on the customer collaterals to determine impairments and provisions on loans”.

Monitoring services entail implementing a variety of proactive risk management methods, including campaigns to encourage clients to make on-time loan repayments. They conduct proactive financial reviews of clients on a continuous basis to discover customers in difficulties early. Customers in trouble are aided with loan restructuring before their situations become hopeless.

5.5.3 Case unit challenges and weaknesses

Will automating business processes and tools in your business unit resolve a huge part of the problems you face in doing your daily tasks?

“You can have the best software but you will never ever be able to automate everything. For example if we establish that all record keeping is done, there could be somethings that could be automated to catch 60% of things that we know can go wrong. The assessment and decisions can be made as a result of what needs to happen. This can be automated through restricting what can be put in certain fields. Exception reports can also be put in place in users skip necessary data capture. IT can automate all the logic that we can created already to produce these. In the deal restructuring, for example, I don’t see how that area can have automated systems and processes except for maybe exception reporting assisting the users there”.

The business unit lacks the necessary staff to maintain the loan book effectively. Due to this capacity constraints and the fact that the majority of operations must be completed manually, there is a backlog in monitoring and assessment.

While the monitoring tools now in use are capable of producing the requisite statistics, they do not provide interpretation or insights into the agricultural industry. There is a need for technology that can assist with agricultural evaluations. GIS solutions that aid in crop evaluation can aid the business unit in making assessments and providing better customer service. Due to a lack of systems and insights, employees are forced to exercise their discretion in other areas. This is obviously problematic because there is a significant risk of overlooking distressed clients, resulting in a significant financial loss for the development bank. The business unit creates dashboards for top management using Microsoft Excel data dumps.

The other challenge that this business unit faces is a linguistic barrier. The majority of clients are non-English speakers, whereas more than 60% of personnel are English speakers.

5.5.4 Case unit strengths and opportunities

What are the strengths you have identified in your business unit?

“Employees within the business unit are knowledgeable of the business and the industry and it makes it easy to access institutional knowledge. The employees have longer tenures with the organisation and have good comradery and team work. The environment is welcoming and warm to work in. There is a feeling of contentment amongst colleagues. People are willing to go an extra mile and do more than they are expected to. The problem recently is that people are taking on more than they should and that also leads to burning out, which has been noted most recently”.

Even though the D-SM-1 states that the employees have longer tenures, it should be noted that the division did not exist until later in the development bank. Therefore the experience that they bring is from other areas in the business where they worked before they were transferred through a formal recruitment process into this new business unit.

In general, the employees stay long at the development bank and most of them do have institutional knowledge that is required to understand history.

5.5.5 How the case unit supports the business strategy

How and where does the business unit support the business strategy?

“The business unit manages the non-performing loan book which is directly linked to the business strategy. The bank has various financial covernants with its investors. The covernants stipulate the limit for non-performing loans. If the limit is exceeded and the covernants are bridged it affects bank’s cost of funds and investors have the right to disinvest their facilities which could leave the bank in financial difficulty. One of the objective in the bank’s trategy is to reduce non-performing loans”.

The function of monitoring non-performing loans was performed by the BOU business unit recently. This changed with the last restructuring of the organisation. This was one of the new business units that were established to put more focus on areas where the development bank was struggling especilly in the collections and arrears management space.

5.5.6 Organisational information needs and processes

What is the information that you need operationally and how do you receive it?

“Our unit requires financial statements, management accounts, cashflow projections for the National Credit Act (NCA) documentation that reflects assets and liabilities, income and expenditure, credit information from the credit bureaus. We also require several reports from SAP for arrears management and to classify performing loans from non-performing loans. Information is also taken from the credit assessment tools captured during the origination of the loan. The most important data that is required is the loans data that is into the collections system and the collateral data”.

Recently, the organisation implemented a new debt collecting system. The system is fully linked with SAP. Loans and collateral data are sent automatically from SAP to the debt collection system. The system has been in use for almost a year, and users are reporting system failures. These issues are being addressed. The system has not yet been rolled-out to all users for whom it was designed so most processes still remain manual.

5.5.7 Capacity and skills in the IT division

Do you think there is insufficient skills in the IT division?

“IT has lost a lot of skilled people in the past years. This could have been due to the past IT leadership. The current IT staff is made up of a mix of dead wood and excellent performers. It must be asked what IT is doing with the current dead wood and how they plan to retain the excellent performers. There is a lack of business analysts that can be part of business and understand business issue and provide a technical solution. The IT leadership does not have a clear and objective performance measurement. IT should have a continuous training on the bank’s systems for existing employees and new employees”.

The IT division had an opportunity to restructure their business unit. This restructure presented them with the opportunity to introduce clear performance measurements and to deal with the non performers in the IT division and acquire the required business analysts. It is clear that they were not able to obtain more business analysts in their structure as they should have. The participants agree that there is a lack of business

analysts in the IT division and that leads to huge misalignment with regards to expectations both from the IT division and business. The lack acquiring additional business analysts was due to the organisation's budget constraints and not the IT division's failure to recognise the importance of these roles.

5.5.8 The IT division resource allocation

Are the IT division resources allocated equitably and effectively in your opinion?

“Well, the laptops are allocated per level and not based on the needs of the employees. We have laptops allocated to us that are not able to work with heavy spreadsheets. They freeze. I see that only the Senior Managers get iPads for use. In our business unit we travel extensively and the use of such mobile devices is required. I reside in one province and manage different provinces. When you are on the road and you cannot open your laptop, you cannot respond to your e-mails, you cannot work on your spreadsheet especially if there is some urgent thing you need to do”.

In the development bank, the Apple iPads are allocated to the board members, senior managers and executive managers of the development bank only. It is not clear if this is part of policy and what informs this stance. However, it is clear that these tools could be useful for employees that visit clients and who are almost always working in the field especially with the development bank looking at expanding to digitisation and mobility. The IT division must also perform a needs analysis when they allocate laptops and desktops to their staff so that they allocate resources according to the requirement of the position.

5.5.9 The challenges and weaknesses of the IT division

What are the challenges that you have with IT?

“For monitoring, reporting is important. All over the organisation, reports are not automated. The biggest source of reports used is a huge manual spreadsheet drawn from SAP. This spreadsheet has so much information. There are other systems involved such as the collection system, the collateral system and others which all house data that is important. The data is there but is it not consolidated in a useful way as such client

information is in many different systems, as an example. The data can be consolidated for deep analytics, not just management information reporting”.

The case unit struggles to perform their responsibilities because reports are not automated, systems are not interfaced and there is lack of analytics capability in the organisation. The development bank has many different systems that house data about the same object in various databases which also causes data duplication. These databases need to be consolidated so that complete and clearer reporting can be done on objects such as a customer. Further automation to systems to perform loan reclassifications into new statuses based on risk can be looked at to eliminate manual reclassification which is prone to errors.

Further analytics and reporting is required to assist with operations within the case unit.

5.5.10 The strengths and opportunities in the IT division

What are the strengths and opportunities of the IT division?

“The bank is way behind in terms of adoption of new technologies. There is clearly a lot of ground that IT can cover and exploit to be at par with other institutions. With technology over the years, there are surely appropriate systems that would be able to provide exactly what the bank needs”.

The business unit has resource capacity issues to manage the loan book adequately. Implementing systems can enable the processes of running scheduled campaigns will assist in freeing the employees from the manual work that takes valuable time away from critical tasks. The debt management system implemented is able to automate campaigns, unfortunately it is not adequately used by all users because of the issues experienced with the system.

5.5.11 How can the IT division improve?

What can be done to improve the IT division when it comes to better supporting the business strategy and business units?

“I am sure there are several things that IT can do to improve. I would not be the right person to talk to how they can improve, but I can tell you that we are struggling when it

comes to producing reports. Reports are extremely manual. This is quite frustrating. Anything manual has errors. Senior management do not take kindly to incorrect information. If this can be automated it would be a great deal of help”.

The IT division must strive to attain proper business intelligence by making sure that data is properly consolidated in data warehouses to automate reports. The IT division must build an excellent team of business analysts that will understand business issues and provide technical solutions.

5.5.12 Role of the IT division

What should the IT division do to turn its performance around?

“IT must make sure that all data is properly housed so that it can go to business intelligence. Get proper business intelligence for business for every division”.

The IT division should be able to use technology to bring people and process together and make the business to operate effectively and optimally by making the right decisions at the right time. Business intelligence is in the heart of right decision making. The data of the organisation must be well consolidated and streamlined in a central data warehouse for manipulation for acquiring deeper insights. The IT division should enable business units to function efficiently by providing IT infrastructure and business information systems and applications for storage and retrieval of data for daily operational use.

5.5.13 IT Infrastructure and software

Seeing that SAP is the system of choice for most of the development bank’s main functions, do you think it is the right solution for the organisation?

“If you ask me if SAP is the right solution for the bank I would say no. SAP is an enterprise systems that runs HR and so on but I believe there are better systems that you can build on which are designed for a specific job. Seeing the lack of Business Intelligence capability of SAP tell me that it is not the right solution. If you go to Gartner’s magic quadrant you will see that SAP is not at the top, but other systems. People are flexible, the system is the one that is rigid”.

SAP is a global enterprise resource planning (ERP) system that is very sophisticated, expensive, and contains interconnected module functions that are poorly understood by business. It is completely inflexible. It has been discovered that because of its ability to tightly integrate modules, it causes internal conflicts in the majority of organisations. Module integration is a significant selling factor of the software.

5.5.14 The IT division's enablement of the case unit's business processes

Is IT successful in enabling your business unit?

“Not really. We are not enabled sufficiently. The service that IT provides for the business unit can improve. We need machines with bigger processing power. Working away from the office poses connection problems. Not everyone has fibre. If you are not in a good area you struggle with connection. Our current laptops are struggling to work with 10 spreadsheets and 10 Portable Document Format (PDF) document open at one stage.

Due to budget constraints, the development bank has always preferred to purchase lower-spec computers for users. This has always been a problem, with some laptops being replaced during a purchase cycle due to their inability to handle the massive computations required by the use of complex spreadsheets.

5.5.15 The structure of the IT division and its leadership

What is your assessment of the management of the IT division?

“IT management, like any other management team in the bank has a leadership challenge. There is a huge constraint on getting the right people and letting go those that which is not adding value. These issues affect IT more than most of the business units because the performers within the IT team will leave to find better offers in the market”.

The IT division needs a total overhaul which the development bank cannot afford at this stage. Even though the business strategy puts a demand on technology, innovation, digitisation and mobility, the development bank does not invest as much as it needs to in IT. This case unit had an opportunity to restructure themselves and the process did not lead to radical changes because the condition was to keep the headcount the same or less.

5.5.16 Communication between case units and the IT division

Communication tools can also be improved. The kinds of telephones that are used do have the ability to record messages, identify caller or list missed calls but these functions are not enabled. Systems are not used to their full capacity.

5.5.17 The IT division's understanding of case unit's strategic objectives

In your assessment, does the IT division understand your needs, problems and what you require for your day to day work?

“IT lacks people that will interact and live within the business. They have to understand business and do a lot of articulation from business language to IT language and vice versa even though they report into IT. They will also assist business to know and use what IT has implemented and made available and again be able to translate business pains points to IT”.

The IT division must bridge the divide between itself and the rest of the business. When systems are implemented, it appears as though the business unit's business requirements are ignored. There are numerous shortcomings in present systems. Business information systems and applications are not being utilised to their full potential. There is so much that systems are capable of that the IT division is withholding from business units. Certain systems fulfill comparable functions. SAP and debt collection systems both manage client accounts and have similar debt management features. The functionality is duplicated, and users must switch between the two systems.

5.6 SECTION 5: CASE UNIT E - CREDIT & RISK

This section provides data analysis and discussion of findings from Case Unit E: Credit & Risk business unit of the development bank. The data were from semi-structured interviews with line managers, senior specialists and specialists. Data analysis and discussions were conducted per theme and subthemes. A theme is tantamount to a study objective. This business unit forms part of the SBUs because it forms part of the core function and has a direct effect on the mandate of the organisation.

For anonymity and confidentiality, participants were coded. Three interviews were conducted with a senior manager, a manager and a specialist. The participants were coded as E-SM-1, E-MG-1 and E-SP-1 respectively.

5.6.1 Case unit description

Please describe what your business unit does?

“Our area is credit risk. It is the second line of defense in terms of assessing credit risk. The front line team comes with proposals and those proposals are assessed by us to determine whether the clients are worth the support from the bank and if there are risks that we can identify and how those risks can be mitigated to ensure that the bank is protected and make sure that the client can pay back. Our role is to make sure that we are gate keepers in terms of credit risk and responsible lending aligned to National Credit Regulation (NCR) and to ensure compliance to the regulations as required by the country”.

The case unit consist of the following functions credit, anti money laundering (AML), compliance and enterprise risk management (ERM). Credit Risk unit is the second line of risk analysis on all deals initiated by the front line case unit, Banking Operations Unit.

ERM is responsible for operational and strategic risks, IT governance and business continuity. Risks for the organisation and case units are highlighted through the assistance of ERM by various case units and rated accordingly. The compliance division’s responsibility is to ensure that the development bank is in compliance with all regulations that governs the it.

5.6.2 Case unit’s strategy & objectives

Does your business unit have a strategy and how well is that strategy shared with other business units?

“We do have a strategy. But we have not shared out strategy with other business units since I joined the organisation two years ago. We have tried to have front line business units sit with us when we review our strategy and SOPs and that has not happened in the past. To come back to misalignment, remember that front line is driving sales and credit risk is protecting the bank’s interest by mitigating the risk and ensuring that the customer is able

to repay. The sales people will try by all means to drive sales, this is what they should do and therefore from time to time will appear to be misaligned, and it is unavoidable”.

There is a huge misalignment between Credit Risk unit and BOU, which is the front line business unit. Their processes are not streamlined and synchronised as they should be. This could be the cause of conflict between the two business units, where the front line is pushing to bring in loan applications to grow the loan book and the credit risk is declining most loan applications because of poor applications.

The Risk & Credit unit receives applications from the BOU for credit risk assessment. The objective of this business unit is to make sure that applications are complete, accurate, viable and meet the credit policy regulations. It is common to have applications go back and forth between the two business units because of either incomplete, inaccurate or bridge of credit policy issues. The issue of long turnaround-time for loan origination is largely between these two case units.

5.6.3 Case unit process and function

Which systems or tools do you use mostly in your processing of loans?

“In the loan processing process, our business unit is responsible for the credit assessment. We have several tools such as the risk rating tool, pricing tool, financial spreading and cashflow tools to assesses loan applications for viability and adherence to the credit policy. These are all spreadsheet tools that we use to assess the proposals”.

Even for current customers, the business unit is unable to process loan applications fast. The loan origination process continues to be lengthy due to the manual nature of the tools and the fact that the data included within the tools cannot be reused to reassess existing customers. Existing client information must be able to be reused for future purposes. Because systems are rigid, the loan origination process is similarly rigid. There are numerous processes and touch points involved in the loan origination process, which results in the process taking an excessive amount of time. The development bank loses clients to competitors as a result of the unnecessary lengthy process.

Additionally, the business unit screens client's loan applications for money laundering, negative media coverage, and fraudulent activity that may be associated with their profile or firm. The business unit conducts workshops through which they develop business continuity strategies that are then implemented in the event of an emergency. A Business Continuity Plan (BCP) is established and implemented as part of the IT governance process in the case of an emergency. Also, the business unit monitors Information Technology Steering Committee's actions, activities and policies.

Enterprise risk management entails the documentation of bank-specific hazards. Although they are eventually captured in a risk and compliance management system, these are recorded manually through workshops held by the business unit. The compliance function identifies applicable regulations, acts, and statutes and continuously monitors for compliance.

5.6.4 Case unit challenges and weaknesses

What are the challenges that you face as a business unit?

“There is a concern with regard to understanding the basic requirements of lending and credit considerations from the front line staff which causes most proposals to be referred back to them to refine for resubmission. This causes unnecessary delays in the processing of proposals. The agricultural business is seasonal and therefore agricultural equipment is purchased for a particular season. If a farmer would like to be funded to buy a tractor to plant during a rainy season they will not need the tractor any longer once the raining season has come and gone, hence they will look for another institution that will respond and fund them quickly in order not to miss the rainy season”.

The front line staff uses manual tools to originate and develop deal proposals. This could be the cause for the poor quality of proposals submitted for vetting to the credit risk division. The credit risk unit itself also lacks agile and responsive systems which further exacerbates the long turnaround process causing customers move to other institutions.

Another participant stated that other challenges include.

“The lack of marketing support for front line business unit. The marketing is also not making the bank’s products visible enough to everyone with the country. People do not know about the bank and its products, it is only in the farming community that you will find that people know about us”.

The development bank is largely unknown in South Africa, and its branding is not apparent to the general public. There are little advertisements and marketing. The development bank's marketing plan does not appear to be as prominent as it could be.

How can technology help with the challenges that you are facing?

“Having spend 17 years in a comercial bank, I know that technology played a critical role. You had one view of the client and not different spreadsheets sitting in different places. If system could be connected so that the data captured in the front line can be visible and available to me in credit. I don’t need to capture information from one system into another system so that data integrity is not comprmised”.

Throughout the development bank, a lack of system integration and manual operations is an issue. Numerous systems are available for storing similar types of data. The manual nature of the loan origination process results in incorrect data being captured as a result of inevitable errors. Manually maintained records are likewise not secured because they are stored in an open file system that allows employees to delete files or replace them with new ones. As a result, earlier decisions and supporting papers may not exist in their entirety if the organisation wishes to revise some of them.

5.6.5 Case unit strengths and opportunities

What are the strengths and opportunities of the IT division?

“There is a strong governance culture in the bank. Where I come from, before joining the bank, we as credit managers would have individual mandates to approve loan applications. In the bank, the decision lies with the committee whereas the recommendations come from the credit managers. This strategy works very well to protect the bank. The committee is another set of eyes that bring assurance due diligence on applications”.

The development bank has done well by not issuing individual mandates to credit managers. The committee, not individuals, is responsible for making loan approval and rejection decisions. Thus, the development bank is safeguarded from a single credit manager's view of a submission. To avoid errors and oversight, assessments are conducted and assessed at a committee level. The advantage with committees is that they bring collective knowledge and collaboration to bear on issues that are interrelated, most notably compliance, risk, IT governance, and business continuity.

5.6.6 The challenges and weaknesses of the IT division

What are the challenges that you have with IT?

“The credit risk, strategic & operational risk and compliance processes are entirely manual. Microsoft Word and Excel are used for pricing, risk rating, cashflow assessments and drafting executive summary. Because the process is manual, it takes too long to complete and the results are subjective”.

An attempt to automate and streamline both the risk and complaint management business processes failed. Historically, risk and compliance systems were developed to monitor risks and various acts of compliance. The solutions were used to track strategic and operational risks, although the compliance module was abandoned after a few months of use. This is because the users of the complaint module left the development bank, and the knowledge of the complaint system was never transferred. Risk assessment and compliance data gathering are carried out using Microsoft Excel-based tools developed by the business unit.

5.6.7 The strengths and opportunities in the IT division

What are the strengths and opportunities of the IT division?

“The digital signature application that is used to sign and approve applications by the credit committees is extremely useful and efficient for approval of loan submissions remotely. It saves time and the workflow prompts us accordingly as and when there is a document to approve. The application could be enhanced by being linked with other systems so that documents flow automatically from other systems to the workflow”.

The digital signature application was introduced more than two years ago and is still not being used by everyone in the development bank, despite the fact that it has been proved to improve the efficiency of several procedures. There is a significant issue with the organisation's adoption of new systems. Along with the digital signature program, there is one that organises the scheduling of meetings that the unit does not use. Additionally, no one in this unit has embraced a CRM system. A change management function is crucial for raising awareness of and promoting system adoption throughout the development bank.

5.6.8 IT governance

How does the IT governance manifests in the development bank?

“The bank follows the King IV Report that states that the board is ultimately responsible for IT. The board can delegate the responsibility to other executives or operational committees. In this case of the bank, the operational management of IT is delegated to EXCO by the board. IT will develop its strategy and share it with EXCO and board for approval. The IT governance will determine the IT structure based on the need of the bank”.

What is the IT division's maturity level?

“The Maturity assessment model is based on the COBIT 5 framework. It is a framework for the governance and management of enterprise IT. The framework aims to achieve alignment to best practice through looking at the processes outlined in the COBIT 5 framework that illustrate the processes an organisation's IT should ideally have in place. These processes can guarantee better governance and control of IT resources. The maturity assessment has identified all 40 processes as outlined in the COBIT 5 framework. Only 12 processes have been tested and the maturity level on the tested process is between 3-4 on a rating scale of 0-5. This rating means that IT's processes are organised and are achieving their intended purpose”.

The IT governance structures are in place. IT governance examines what the IT division is attempting to accomplish, who is accountable for reaching those objectives, and if there

are sufficient processes and maturity in place to enable the IT division to accomplish those objectives.

5.6.9 How can the IT division improve?

What can be done to improve the IT division when it comes to better supporting the business strategy and business units?

“The CEO needs to put a budget aside for IT and system development. The main thing is to get business and manage the business we have. A proper system that can allow us to do this should be bought”.

The development bank must invest in IT. A sufficient budget is necessary to purchase and implement required business information systems and new technology. The IT division can improve by collaborating more closely with business units on enabling them and resolving their pain points. These should be discussed and prioritised by the IT Management Committee (IT Manco) and the Information Technology Steering Committee (IT Steerco). Taking note of the difficulties and offering continuous feedback to the affected business units might help boost the profile of IT.

5.6.10 IT strategy

Is the IT strategy making a contribution to the overall business strategy of the development bank?

“From my perspective, IT should be making a contribution to the business strategy by enabling competitiveness through IT systems. If we take too long to approve a client, we lose the ability to bring in new business. IT should play a pivotal role in achieving our business strategy with regards to growing out client base as an example. We still have a long way to go to get our IT to improve our business processes. The IT Steering committee is actually supposed to be looking at the alignment between business and IT. But that is not always taking place. From what I have experienced with the IT Steering Committee is that it has become very operational and does not focus on the strategic matters of the development bank”.

It is clear that technology, systems and processes are not assisting the development bank to effectively bring in new business to compete equally with other lenders in the same industry. This indicates a gap or misalignment in term of what the IT strategy should focus on.

The IT Steerco is responsible for ensuring that business and IT, as well as the IT division and each business unit, are aligned. However, it has been indicated that the committee is more operational than strategic in its focus. It was noted by E-MG-1 that the process to change the function of the IT Steerco to be more strategic is in progress. E-MG-1 also admitted that it will take time to get this process in place. The committee should also look at the skills gap and develop a plan to close the gaps to deliver on the business strategy.

5.6.11 The role of the IT division

What is the role of the IT division in your knowledge?

“IT is an enabler for business. It should further be a business partner for business. IT should be able to recommend to business ways to automate their processes and recommended systems that will make their processes faster, effective and efficient”.

While E-MG-1 acknowledges that this is occurring to a degree, there is still a great deal of ground for the IT division to cover to be an efficient business partner. The IT division must enable the organisation to process loan applications automatically, save and retrieve documents and decisions made, as well as maintain systematic electronic records for future use.

The IT division must manage the organisation's information and ensure that it is accessible where and when it is needed. Data must be validated at the point of collection, it must be protected, and distributed to those with the authority to use it. The IT division must provide business information systems and IT infrastructure that assist the business in achieving its goals and vision.

5.6.12 Business Information Systems and applications

Has there been any tool automations, business process enablement or system implementations in your business unit?

“IT has recently automated the Gift Register and Policy Register systems. The Gift Register allows us to record the gifts that have been received and a workflow sends the items on the register to the line manager for approval. The Policy Register was also a manual process. The process involved a collection of reports on spread sheets which would be updated into one huge consolidated spread sheet. The automation enables users to update the register themselves on the system”.

This process automation has increased the efficiency of these procedures. The business unit is able to repurpose time formerly spent manually consolidating reports to focus on their primary responsibilities and risk management functions. A Microsoft Sharepoint platform was used to create these applications, commonly known as Sharepoint Apps. The tools were developed in-house leveraging existing technology.

5.6.13 IT infrastructure

What is the state of the IT infrastructure in the development bank?

“I believe that our IT infrastructure, which includes the gadgets that we have, needs to be updated. We get messages frequently of the server experiencing problems. So I ask myself whether our servers are at risk to cause business interruptions. The mobile network connection via 3G is also problematic. There are arrears where there is no coverage and this needs to be looked at”.

The IT infrastructure is not stable. There are many interruptions that come up during remote meetings sessions. The communication platforms seems to be unstable. Remote connection for the work-from-home policy is affected by the local cell phone connectivity. This instability impacts on productivity especially when the employees are forced to work from home because of the Covid-19 restrictions imposed by the government.

5.6.14 Business processes enablement

What is the number one problem that hampers business process improvement?

“The challenge is that there are many different systems. Most of us do not know what those systems do. Many of them might do the same thing like keeping the record of the customer for example. In order for one to obtain information about a customer they will have to find

their way to bring the data sets together. This often results in information about a client being different depending on how it was collected. Information that is captured about the client should flow through the system and the origination process”.

Numerous business information systems and applications exist within the development bank that address business problems in part or in some cases not at all. Other systems have been built to support specific functions and units within the organisation but have not been expanded to the entire organisation. There is a need to rethink the development bank's current solution stack to repurpose and update some of these apps to meet current user needs. If business information systems and applications become obsolete, decisions must be made regarding their decommissioning and replacement with new ones that offer value. A proper relationship with business units must exist to educate them about these systems and their value proposition.

5.6.15 IT scope and architecture

What is your ideal IT architecture?

“IT architecture must first of all encourage systems to talk to one another so that they can share data. This will assist with data integrity. Data would remain consistent because there would multiple systems linked together to use the same data”.

The organisation spends funds procuring and implementing different business information systems and applications to meet different solutions for different business requirements from different business units. These solutions need to be interlinked with one another to communicate and share data. The IT division must consider investing in a single platform that is used by commercial banks that is able to provide a single 360 degree view of a customer through interfacing all diverse systems in the development bank.

5.6.16 Communication between case units and the IT division

Is there proper communication between your business unit and IT?

“IT should be part of some of our meetings where we can communicate our current and future plans. They should spend time in our department in order to understand our business process and identify areas of improvement and automation”.

Between the IT division and business units, there is a dearth of communication and collaboration. This results in a complete misalignment of which processes are critical for business units now and in the future. The IT division initiated an exercise to identify critical systems without consulting business units. This is an example of areas where collaboration and communication between business divisions and the IT division should have occurred to achieve alignment.

5.6.17 Prioritisation of IT projects

How does the IT division prioritise projects?

“When it comes to the prioritisation of the IT projects, there is a committee of the PMO called the Project Management Committee. This committee is responsible for setting priorities on all projects across the bank and not just for IT. Even when IT projects are being discussed at the IT Steerco, they still go through to the Project Management Committee for prioritisation and budget allocation”.

The IT projects are prioritised by the PMO Committee. This is an oversight committee for all strategic and operational projects throughout the development bank. The intention and aims of this committee is to make sure that all projects contribute to the business strategy. All projects report progress to this committee even though all projects also have their project steering committees.

So basically there are three committees that oversee projects, this are the IT Steerco, the PMO committee and the project Steering Committee. This could be an overkill for small projects as they have to go through so many committees.

5.7 SECTION 6: CASE UNIT F – PRESALES ADVISORY SERVICES

This section provides data analysis and discussion of findings from Case Unit F: Presales Advisory Services business unit of the development bank. The data were from semi-structured interviews with line managers, senior specialists and specialists. Data analysis

and discussions were conducted per theme and subthemes. A theme is tantamount to a study objective.

For anonymity and confidentiality, participants were coded. Two interviews were conducted with a senior manager and a specialist. The participants were coded as F-SM-1 and E-SP-1 respectively.

5.7.1 Case unit description

Please describe what your business unit does?

“Our business unit is new. It started about three and a half years ago. There are three units in it. The division consists of all the agricultural economics that look at loan applications and make recommendations for various sectors and complete situation reports for the credit committees. Our business unit also have a division that deals with green fields projects that do not have a lot of insights. The team collects data in behalf of the clients and assists them to develop a business case. We also focus on geo special mapping, environmental & social sustainability and enterprise budgets which guide the bank in pricing and norms for different commodities”.

The Presales Advisory Services has three sub divisions, namely, Agricultural Advisory (AA), Project Development and Facilitation (PDnF) and Agricultural Technical Support (ATS). They form part of the loan origination process in that they provide advisory services and technical reports based on loan applications submitted by the front line business unit.

5.7.2 Case unit strategy & objectives

How does your business unit support the development bank’s business strategy?

“There are about 435, 000 farms in the country. Each farm has a boundry. With the capabilities of the satellite we take a photo of the farms for monitoring the farm and to analyse the crops and soil conditions amongst other things. This in turn assists the bank and the farmers to apply for the most profitable projects by choosing to plant the right crops in the right area in the country based on soil condition and climate”.

“We provide environmental studies to guide where farming cannot happen according to environmental laws. Our social side looks at the working conditions of the labourers on

farms. Each farmer must have a contract, protective clothing and so on. We also look at chemical storage for safety”.

The data gathered by this business unit is used for additional risk management in the loan origination process. The unit is able to use tools to determine the yield on the farm which in turn informs production yield and repayment ability. They provide advice for farmers with regard to the kind of farming that can be best suited for the area they are farming on. It further provides insurance information based on farm and crop conditions which are able to be monitored using geographical information system’s satellite technology. This is how the unit supports the BOU and Credit & Risk units during the loan origination process. The intention of this unit in supporting the business strategy is to support the development farmers going who do not have enough knowledge about farming activities.

5.7.3 Case unit process and function

What is the big drive that the unit is striving for?

“Our big drive is to provide information to the farmers. Any farmer should be able to determine before hand whether their project will succeed or fail. If we provide tested and accurate information to all clients they can make the right decisions with regard to what they plan to grow. The business unit can make the enterprise budgets available to the public. The latest commodity prices will be useful to farmers. This service will assist potential and current farmers to calculate yields per commodity accurately”.

The enterprise budgets are a set of current and latest commodity prices per hector to assist the development bank to assess and determine repayments and viability of loan applications. The environmental and social sustainability process is to ensure that all loan applications meet the social and employee safety standards set by the South African government. The geo spacial function provides farm technical information.

5.7.4 Case unit challenges and weaknesses

What are the biggest challenges that you face as a business unit?

“Our biggest challenge is getting other units to adopt our services and embrace our strategy”.

The business unit's issues include senior management and executive adoption of new and evolving technology. Adoption is a bank-wide issue, which indicates that the data obtained and provided by the business unit is not being accepted and used properly throughout the organisation. In addition, the business unit struggles with human resource capacity, which is critical if the development mandate is to be pursued aggressively. Customers for development purposes require a higher level of support than established farmers.

The business unit has places where manual processes could be automated because they are currently carried out manually. Cashflow modeling is still carried out manually. Manual data entry is used to create enterprise budgets. The enterprise budget report is constantly delayed due to the manual nature of the process, but the development bank is dependent on the availability of data from other organisations.

5.7.5 Case unit strengths and opportunities

Describe the strengths and opportunities of your business unit?

“We have a diverse group of highly specialised individuals. We have also started three years ago and we have already been invited by the World Bank to come and showcase our progress and reports we produce for all our farmers”.

The unit was invited to Washington DC, in the United States, to showcase their use Geographic Information System (GIS) tools for monitoring farms. The development bank is leading in the geo spacial sector as compared to other organisations in the industry.

5.7.6 How the case unit supports the business strategy?

The objectives of the business unit is to expand the sector and to accommodate unique farming ventures that are not everyday application. The business unit's intention is to provide advisory support to the applicant through GIS capability that is able to assess soil structure types and whether conditions to determine crop suitability. With the understanding of whether conditions and soil type the farmer can apply for the best commodity suited to grow in the area. This will minimise the potential for the business to

fail. The enterprise budget uses norms that guide farmers on input cost prices for commodities leading to accurate calculation of production yield.

5.7.7 Organisational information needs and processes

What is the information that you need operationally and how do you receive it?

“The GIS system is accessed on subscription bases by the bank. The system is able to provide reports at a point in time. The reports have been automated. Where in the past it used to take two hours to draw reports, the ability to download reports has been automated and now reports are on demand. The enterprise budgets are acquired from credible sources approved by the bank per commodity such as agricultural cooperatives, government departments, private companies, etc. that are spread around the country. The acquisition is still manual through email from these partners. For environment and social data, the business unit obtains data through a subscription service”.

All the information is received manually and in most all cases unencrypted. Data is mostly e-mailed through to the development bank. The data is kept on the development bank's servers once received.

5.7.8 Skills in the IT division

The current management of the IT division has brought a change in enabling the business unit notwithstanding their human resource capacity constraints. The IT division has taken responsibility of all technical aspect of the development bank's function and have developed a roadmap that takes the business requirements into consideration.

5.7.9 IT resource allocation

What is your assessment of the IT division's resource allocation?

“Look, I work with enterprise budgets for output prices for example. If I look at the Excel worksheet for enterprise budgets in the Excel workbook that I use, I have more than 100 worksheets in one spreadsheet and for output prices is about 120 worksheets. The laptop assigned to me takes a few minutes to open the spreadsheet and then when I update formulas it stops completely sometimes. The laptops are ok for most people but for us that work with huge data these laptops are weak”.

The allocation of desktops and laptops are done from the IT division without analysis of what the employees use the machines for. The IT division normally purchases a single spec laptop or desktop based on price and then distributes to the users. This approach is wrong. Some users need more processing power than others especially those that use huge spreadsheets for computations. The current laptops have exceeded their 3 year life cycle according to the IT policy. They need to be changed for new ones. The development bank's bandwidth needs to be increased to allow working remotely away from the office.

5.7.10 IT challenges and weaknesses

What are the IT challenges that you know of?

“We are gathering a lot of data on our side. We receive this data as spreadsheets through email. I believe that there is gap in terms of understanding the data that we accumulate and how it can be used to assist the bank. If data can be studied through systems that manipulate data, I am sure we can draw a lot of information to assist the bank with meaningful information for the past, present and even what the future could bring with regards to analyzing trends. Understanding how to utilise data is important for us to take advantage of many different set of data in various systems and databases as well”.

The lack of systems leads to data storage problems. All the data that is being accumulated is not stored in a database so that it can be analysed for trends over a period of year because it is not in a structured database. The Microsoft Excel files are also filed in ordinary folders on a common server. The security of the data is questionable in how it is stored. With a proper system, data would be stored in structured databases over a period of time and can be used to analyse trends for providing the executive managers with insights from the data.

Once again the lack of proper system to draw insights on the data that the development bank is accumulating means that there is a lot of data in the development bank that could be informing the decisions that are taken.

5.7.11 IT strengths and opportunities

What are the strengths and opportunities of the IT division?

“There is huge opportunity for IT to create new credit scoring models to improve business decisions based on data modeling. Data should be mined and modelled to enable the bank to tailor-make products per customer. Data insight will cause a shift from standard products to more client suited products depending on the customer profile”.

The IT division must utilise technology to assist in the development of new products. The data has the capability of identifying current trends and product gaps. When these gaps are filled, a more comprehensive and relevant product catalog is established.

5.7.12 How can the IT division improve?

What can be done to improve the IT division when it comes to better supporting the business strategy and business units?

“The new technology environment should reshape the current outlook. The new IT is experiencing disruptive models that will reshape the entire competitive map. The IT division must be part of it or they will be left behind. There is a massive shift for companies in profit making opportunities. The financial sector is changing the way they approach customers through their digital channels”.

Technology is moving fast. Banks are changing how they run their business and they use digital platforms to give them an competitive advantage. The adoption of cloud computing and technologies will add to the IT division’s efficiency when it is adopted. At this point, the development bank has not taken a position on cloud services. This needs to be concluded as soon as possible. There are many benefits that the development bank can draw from it. The IT division staff must be exposed to these new and incoming technologies within the agricultural sector that other organisations are taking advantage of. The development bank needs to invest in new technology as it gets rid of manual processes and tools.

The IT division staff must be introduced to emerging agricultural technology that other firms are already utilising. As it transitions away from manual processes and tools, the development bank must invest in new technologies.

5.7.13 The role of the IT division

As far as you know, what should the role of the IT division be in the development bank?

“There is a huge acceleration in technology with the emerging 4th Industrial Revolution (4IR), broadband, 5G capability, digitisation and introduction of disruptive business models. There is a massive shift for organisations to adapt to new ways. The legacy systems and old financial modeling and assessment have been replaced with new ways of doing things. If the IT division does not adapt to the new way of doing things by taking advantage of technology, the bank will miss the opportunity to take advantage of what these technologies offer. Big data is the talking point in the technology sector and the bank needs to adopt it quickly. Digital identity and know your client (KYC) is playing a major role in commercial banks where vetting is digital and quick. Analytics & insights for decision making and Artificial Intelligence (AI) for precise risk analysis are extremely important in agriculture”.

The development bank's employees, especially in this unit, have specific expectations of the IT division. F-SM-1 and other participants expressed displeasure with the absence of anticipated IT investment and the absence of the implementation of new and emerging technologies. The corporation lags behind the majority of businesses in the same industry.

5.8 SECTION 7: CASE UNIT G - FINANCE

This section provides data analysis and discussion of findings from Case Unit G: Finance business unit of the development bank. The data were from semi-structured interviews with line managers, senior specialists and specialists. Data analysis and discussions were conducted per theme and subthemes. A theme is tantamount to a study objective.

For anonymity and confidentiality, participants were coded. Three interviews were conducted with a senior manager, a manager and a specialist. The participants were coded as G-SM-1, G-MG-1 and G-SP-1 respectively.

5.8.1 Case unit description

Please describe what your business unit does?

“We basically do the accounts which are the balance sheet, cashflow, allocation of deposits to the correct customer accounts, paying out to customer accounts, paying creditors and

managing buildings rented to tenants. Our business unit is also responsible for supply chain management. It assists the bank to procure goods and services. All services rendered by suppliers and contracts are managed by the procurement function. The travel function coordinates travel for employees of the bank”.

The business unit consist of the following functions, finance, administration & reporting, travel & events management, facilities and supply chain management.

5.8.2 Case unit strategy & objectives

Explain how your strategy was disseminated within the case unit?

“In terms of the strategy. I feel that it is not embedded enough at an enterprise level such that every staff member has appreciation of what the strategy is what their role is in it. Each employee needs to have an appreciation of what the strategy means for them. For our business unit, the challenge is that we have not had an opportunity to sit down and analyse what the business strategy means for the department and how it affects your day to day activities”.

The development bank develops its business strategy every five years. The development bank's main shareholder requires this. The strategy must be agreed upon by the board of directors and developed by EXCO. Senior management and certain line managers are engaged in formulating the business strategy. Business units devise strategies to support the business strategies. In some cases and in other business units this is where it ends. It does not get to be broken down further to the man on the ground.

5.8.3 Case unit process and function

Describe your business unit processes?

“The finance, administration and reporting division manages and reports on the financials. Our business unit utilises finance & cost controlling and banking modules of SAP for core functions like receivable, payable, general ledger, loans management and so on. The SAP Finance and Cost controlling (FI/CO) module consists of two modules, namely SAP Finance and SAP Controlling, each of which is used for the execution of particular financial processes. The SAP FI module focuses on financial management and

accounting, while the focus of SAP CO is on cost forecasting and recording. SAP Core Banking module is used to manage the loans and deposits. SAP records customer data, customer products, customer balance and repayments”.

The case unit also utilises mainly Microsoft Excel spreadsheets to create report from data dumps drawn from the SAP system. The business unit uses the data dump extracted from SAP tables and uses Microsoft Excel spreadsheets to manipulate the data to produce reports. The business unit has commercial bank's portals which they use to draw bank statements.

The organisation has bank accounts with commercial financial institutions for receiving payments from their customers. Accounts payable and receivables are recorded on SAP FI/CO. The costs that are generated by different provinces are sent to the finance unit and then they are manually processed and paid. The disbursements of finances into customer's commercial accounts are performed manually.

From the cash and bank section of finance, the identification and allocation of deposits into development bank's bank accounts is automated and the deposit process automatically allocates all the incoming customer payments. The development bank has an agreement with commercial banks for force customers to capture the development bank's account number as reference when they deposit funds for loan repayments. This process saves a lot of time and has eliminated misallocation of funds even though the physical downloading of the statement from the commercial bank's portal into SAP is still manual. This process is being considered for automation. The rest of unallocated payments are non customer payments are done manually.

5.8.4 Case unit challenges and weaknesses

What are the challenges you experience in your business unit?

“We have an issue with our user's lack of understanding of the systems available to us for use. The business is heavily reliant on IT even on finance related functions in the systems. This could be as a result of lack of training”.

The case unit requires automation of financial tools including the preparation and management of budgets. Whilst the SAP system focuses on the financial management and accounting, there is a lack of automated reports and interlinkages with other systems whose processes are connected to main functions in finance such as payment to customers. The biggest risk with the current manual processes are the data volumes required to compile reports on a monthly basis that can lead to errors in the reporting. Annual Financial reports are prepared on Microsoft Excel. This process has led to many errors that have added to the delayed release of the Annual Financial results in the past.

What are the weaknesses in of your team?

“My team lacks the experience of accounting knowledge to basically do the work required. If something should happen to me and my supervisors then my team is doomed because of lack of accounting knowledge”.

Illiteracy could be limiting the use of accounting systems well as. For accurate data capture, the financials of the development bank may well be impacted. For example, capturing collaterals. If collateral is not captured, the development banks' impairments increase and earnings decrease.

Month-end processes are lengthy and tedious This is because of the delayed data that is received manually from the development bank's partners that facilitate loans on its behalf. Case units within the development bank are not able to draw their own financial reports. The budgeting process is manual even if the development bank had purchased and implemented a tools that could automate this process.

Mis-allocations of funds into wrong accounts is another problem. A few transactions would need to be allocated to client accounts manually. The problem with the manual process is that the junior employees have not gained adequate finance skills. They struggle with allocating funds manually.

5.8.5 Case unit strengths and opportunities

What are the strengths and opportunities in your business unit?

“We have a well running cash and bank processes that was automation a few years ago and it is working well. We need to build on this success. We must identify other areas where we can improve and automate. The process to compile the Annual Financial Report could be automated. It takes far too long to do the compilation manually”.

“In terms of the whole financial systems, nothing these days is done manually. In the past you would have written invoices manually and recorded them on the ledger book. Now this process is done through the system on SAP. Where we have challenges is where we have to do reporting. The reports have to go to a business intelligence system and then transfer to Microsoft PowerPoint for formatting. A lot of time is lost trying to format reports. We do not have automatic reports that are pre-formatted”.

5.8.6 How the case unit supports the business strategy?

The case unit supports the development bank with the management accounts and financial reports, administrative work with regards to incoming payment, outgoing payment and provide reports to the business. The unit plays an important role on the compilation of the annual results which investors use to assess the financial position of the development bank.

5.8.7 Organisational information needs and processes

Give me an example of one area in finance and how they receive the data they work with?

“Well, let us take accounts receivables for example. From an account receivable point of view information is received through e-mails. The invoices are received from vendors through e-mail and then checked manually, processed and paid. Accounts receivable information comes through the bank statements which is received from the commercial bank’s portals”.

Even though the SAP FI module handles most of the finance processes, there are still manual processes that the team needs to perform.

How has the IT division contributed to the efficiency of the business unit?

“IT has positively contributed to our business unit with regard to some system automations that they have implemented. There is still a lot of work to do though. The development bank statement uploads and invoicing are identified for automation”.

5.8.8 Skills in the IT division

Some of the IT division employees are reliable, skilled and are quick to complete request. The reliable seems to be the ones that are overloaded with work. However, the IT division has other members that need to work hard to relieve the overworked.

5.8.9 IT resource allocation

What is your experience with the support that you receive from IT?

“With working from home because of the lockdown and Covid-19, I have never had an issue with logging in with my laptop and things like that. What assisted me is the fact that we have WIFI at home. For me the setup is working. What I would like is a faster laptop. Especially working with big spreadsheets and lots of formulas the laptop tends to slow down and tend not respond”.

This business unit uses huge Microsoft Excel spreadsheets that require a higher level of processing power compared to other business units. The laptops allocated to them have been problematic due to lack of adequate processing power. It is worse now that the laptops have also passed their 3 year recycling period, they are even slower. The development bank's infrasture is not as stable as it should be. There are network connetion issues. This unit is dependent on the network connection to for downloading statements from commercial banks. Payments are scheduled and the payment dates have financial implications. Payments are classified as a critical business process and cannot delay due to internet connection.

5.8.10 IT challenges and weaknesses

In your view, what do you think the IT challenges are?

“The current SAP system must be interlinked with other systems for additional functions such as automatic payments of funds into the customer accounts. At this present moment a user has to log into a different system in order to pay into the customer account. Moving

from one system to another has created payments problems in the past where it resulted in erroneous payments for customers”.

Another participant said.

“We experiences issues with data that is not captured and data that is incorrectly captured. The National Credit Regulator report for example is drawn on a quartely basis. This report has been automated but due to the information captured on the systems incorrectly the report cannot be drawn automatically and submitted as is without manually adding missing data. The information on the system cannot be trusted because of this reason. The common practice is to capture the bare minimum information to get the transaction going. Data clean up excercises has been performed with training to explain the implication of incorrect and incomplete data on the system”.

The business unit problems are based on the commonly identified issue of lack accountability. The organisation has not allocated the ownership of data to it owners, the users. The ownership of data is disputed with most managers and senior managers thinking that the IT division is the data owner. Another challenge faced by the organizaiotn is the attitude of the system users. Even in areas where automation and systemitisation of functions have been provided, the users do not use the system as intended, they capture gabbage in the system which in turn creates system and reporting problems. In other cases systems that have been implemented, such as the budget system are not being used.

5.8.11 How can the IT division improve?

Is the IT budget sufficient for the IT division to implement a modernised IT system?

“I don’t know. We gave them around R125 million the past financial year, for me it sounded more than enough”.

There is clearly a mismatch with regards to the business strategy’s expectation with the budget provision. The IT budget is miniscule as compared to the expectations of the business strategy. The IT budget according to G-SM-1 sufficient. If the IT division does not receive enough budget certain deliverables will not be achieved.

5.8.12 The role of the IT division

Is it the responsibility of the IT division to bring in application systems or business must select their chosen application systems that the IT division can assist in implementing?

“Business needs to come to IT and demand tools they require for their workforce so that they can be competitive. If you think about it, our application forms are paper based. If you go to our competition, their application form is sitting on an iPad. So if they go see a client, when they leave the client, the application is uploaded and then scored automatically for credit assessment. With us the client must write down on the form, the form must be typed, the form must go to credit and so on”.

The process to select business information systems and applications is not clear. The responsibility is split between business units and IT. A further complication is caused by the SCM process that is rigid and must be followed without fail. The SCM may use cost as a criteria which is not necessarily the best measurement to use when procuring software. The IT division is not part of the user community neither are they system owners. They are there to enable the organisation through technology and business solutions. In the development bank the perception is that the IT division are the owners of the business information systems and applications and data. Business units must take ownership of business information systems and applications and data.

5.8.13 The IT division's enablement of the case unit's business processes

Has the IT division contributed positively to the business unit?

“Hopefully yes. Like I said, IT has assisted with a lot of automation in my division and hopefully they will also assist with other automations in other areas as well including the invoices, statements and things like that”.

The IT division has been able to enable and automate most processes in this business unit because the Finance unit has been identified as one of the strategic business units. Their function is central to the support of the core function of the development bank which is lending.

5.8.14 IT processes

How have you found IT support processes?

“With the issues that I have been having, I have found that they are quick to assist and come up with a solutions because I am the type of person that would pick a phone and get someone to come through and assist my team. I have never had an issue with the IT team when I needed them”.

IT processes are adaptable to serve business units that make urgent demands outside of the typical IT incident management process. As part of the IT processes and procedures, emergency requests for quick changes and emergency fixes are accepted.

5.8.15 IT structure

Is the current IT division able to serve the development bank with the current number of people?

“Currently we are experiencing a shortage of personnel in the IT department. We have logged calls for IT to provide us with certain services and they still have not come back to us. I mean for example the CFO wanted a report from SAP that gives a movement on loans and a recon on each loans that records the opening balance and movements that tie to our general ledger. This was required a month ago. I still have not received feedback. You almost have one person doing everything with regards to loans on SAP”.

The automation of reports have been requested from IT. Due to human resource constraints, most of the requests have not been delivered to this day. The requests have in most cases been around the automation of massive reports being prepared on Microsoft Excel spreadsheets.

The current the IT division team is overwhelmed by the amount of work. The structure and the number of people are not adequate to support the current bank strategy. For example, the core function of the development bank is lending and there is only one resource responsible for SAP Core Banking. More skilled people need to be recruited.

Each SAP module has one person that is an expert in supporting it. The skills are available but the current position is that of one man systems. If one SAP resource is not available then there will not be any business support for the module they support.

5.8.16 Scope and architecture

Is the current portfolio of business information systems and applications able to cover most of your business unit?

“The systems are archaic. The current BI tools, for instance, has been overtaken by time. So there are systems now that are interactive with the data and the user. Most of the reports are built within these new reporting tools that filter the information you want based on the parameters and you get the report that is ready to paste. Our current BI tools requires us to get a programmer for most things”.

The development bank has multiple Business Intelligence (BI) tools in its software stack. One of the BI tools is SAP BI which is not as flexible to use as the latest tools in the market such as Power BI of Microsoft and QlikSense from Qlik. The development bank is possession of both licenses for Power BI and QlikSense. These tools are not used to their full capacity because of the tendency to revert back to manual processes due to lack of system adoption.

Communication tools must be improved. From telephone hand sets to video communication tools. The current communication tools are outdated. Telephone sets cannot record calls, do not have Caller ID, and cannot take messages.

5.8.17 Case unit's understanding of IT

There is a dearth of in-depth understanding of the current systems by the system users of the development bank. The users in this business unit do not have a good understanding of available systems. This points to a training gap and lack of system adoption.

The unit requires an IS administrator position. A person that understands technology and can coordinate between finance and IT. The IS administrator would bring an

understanding of the finance processes and other finance procedures and could better communicate these to IT.

5.9 SECTION 8: CASE UNIT H - TREASURY

This section provides data analysis and discussion of findings from Case Unit H: Treasury business unit of the development bank. The data were from semi-structured interviews with line managers, senior specialists and specialists. Data analysis and discussions were conducted per theme and subthemes. A theme is tantamount to a study objective. This business unit forms part of the SBUs because it forms part of the core function and has a direct effect on the mandate of the organisation.

For anonymity and confidentiality, participants were coded. Three interviews were conducted with a senior manager, a manager and a specialist. The participants were coded as H-SM-1, H-MG-1 and H-SP-1 respectively.

5.9.1 Case unit description

Please describe what your business unit does?

“The business unit, which is the treasury, is responsible to raise funding from investors, to invest any surplus cash and manage the liquidity of the bank. The funding raised from investors is interest bearing and therefore the bank is exposed to the interest rate risk. To ensure that the bank remains solvent in a short and long term, our business unit is also responsible for capital management. Surplus cash is invested with commercial banks on products offered such as call accounts available on demand and fixed deposits or funding portfolios offered by asset managers or banks”.

The business unit manages interest rate and solvency risks associated with long and short term capital raised from investors. The business unit manages the financial resources through capital management. The business unit strikes a balance between cash on hand and cash required to meet financial obligations and repay clients who require loans. While cash on hand does not earn interest, it does accrue interest for the funders from whom it was obtained. The business unit's duty is to ensure that the development bank does not pay interest on money that is idle in its accounts.

5.9.2 Case unit strategy & objectives

What is the most important function of the business unit?

“One of the most important function for our business unit is capital management. Capital management’s main purpose is to ensure the solvency risk is well managed. Solvency relates to the liquidity of the bank and ensures the bank is well capitalised in a short and long term. There are Basel regulations put in place to assist in managing the liquidity and solvency risks. There is a minimum capital adequacy ratio that is required by Basel regulation”.

The development bank is supervised and regulated by Basel regulations. The regulator provides liquidity and capital adequacy buffers. Basel III, also known as the Third Basel Accord or the Basel Standards, is a voluntary global regulatory system for bank capital adequacy, stress testing, and market liquidity risk. Its aim is to make bank capital requirements more stringent by rising bank liquidity and lowering bank leverage.

5.9.3 Case unit process and function

Explain your business processes with regard to the function of your unit?

“We have the following divisions in our business unit, the front office, back office and middle office. The front office stays in touch with investors to raise funds and keep track of commercial bank’s investment instruments for investing surplus cash. Back office supports the front office by administering financial instruments that are issued. They contribute by compiling the financials relating to treasury activities. The middle office manages the risks of all the activities performed by the front and middle office and ensures compliance with controls and policies. The middle office ensure that treasury operates within the legislation such as financial market act, anti money laundering and Johannesburg Stock Exchange (JSE) rules”.

The business unit ensures sustainability, making sure the development bank is well capitalised and the liquidity of the development bank long term. The solvency risks is managed to make sure that the development bank can meet its short and long term financial obligations as well as absorb any potential losses that could come to the business.

The business unit monitors the financial debt covenants agreed with the investors. Debt covenants are agreements that the development bank enters into with investors that ratios will be kept within certain thresholds Debt covenant ratios are for example liquidity ratios, non-performing loans ratios and so on.

The business unit uses Neutron, which is a JSE system for trading of bonds in the secondary market. The business unit also uses Reuters to source market information, to place money market orders and to monitor economic information. The Treasury Management System (TMS) is used for the treasury management accounting. The telephone recording system is used to record deals that the development bank enters into with investors as a form of risk mitigation and contracting.

5.9.4 Case unit challenges and weaknesses

What are issues and challenges you deal with in the business unit?

“We are affected by capacity challenges. There is just not enough people in this department. The personnel recruitment process takes too long and employees are expected to occupy more than one position. One such position is the replacement of the Senior manager – Treasury. The position stayed vacant for more than a year. The current Treasury Management System administrator within the business unit is only one. There is a dependancy on this resource. If they are not available no one else in the bank is available to assist with their duties”.

The capacity issue is a bank-wide problem. It was noted from the statement above that the recruitment process takes too long and in some instances might affect the operations in the business unit.

5.9.5 Case unit strengths and opportunities

The business unit has stringent risk management and compliance controls. The Auditor General (AG) has found that the controls were effective and satisfactory for the past several years.

5.9.6 How the case unit supports the business strategy?

How does your business unit support the business strategy?

“My business unit, is a core to the business of the bank. The function of the business unit is to raise funding from the liabilities point of view and also to invest any surplus funds or cash in order to manage the liquidity of the bank to meet its financial obligations”.

The strategy of the business unit to the business strategy is to borrow cost efficient funds that the development bank can on lend for agricultural ventures and to also increase cash on hand through investments. The business unit keeps the development bank within the thresholds as agreed with investors. These thresholds forms part of the covenants that the development bank agree to with investors. The terms of the agreement could include a threshold for non-performing loans covenant as an example. Investors have the right to withdraw their investment when these thresholds are breached to secure their investment. If investors withdraws their funds it will affect the development bank's liquidity.

5.9.7 Organisational information needs and processes

What is the information that you need operationally and how do you receive it?

“We receives the loan book data and financial performance ratios report from finance. The risk credit unit supplies us with risk and compliance guidelines. Cashflow projections reports we receive from the BOU unit. The Strategy and Communications unit provides us with strategic target of liquidity to be maintained. That is what we receive internally. The challenge is that the information comes late sometimes. For external information we look out for the economic performance and availability of funds in the market. Availability of funds is tracked through monitoring savings, investments, contributions to insurance policies that all contributes to the pool of funds which the bank borrows against. We also monitor interest and inflation rates so that we can be informed of the cost of borrowing”.

All information received internally is received manually through e-mails. External data sources include the internet and economic performance monitoring websites, articles on the demand and supply of money, and interest rate announcements that affect borrowing costs and the rand's strength.

5.9.8 IT resource allocation

Are there any additional technical tools you require to enhance your processes?

“We use a telephone recording systems in our area as part of of risk management. The recordings assists us with the recording of all transactions with investors. The recordings are used to eliminate market abuse or clarifications where there is disputes. We also use it for monitoring employee conduct and as a corrective measure. Now with the Covid-19 lockdown forcing employees to work from home, the telephone system does not have the ability to push calls to cell phone in case employees are not in the office”.

The lack of a recording system for deals entered into with investors is a huge risk to the development bank. The IT division needs to implement this immediately. Expanding the technology will require that the development bank invests in IT for these unforeseen costs, so that the IT division can install the latest tele-communications technology with bigger bandwidth.

5.9.9 IT challenges and weaknesses

What are the IT issues that you experience and wish the IT division can assist you with?

“The main issue that we encounter is the inadequate way of projecting the funding requirements from other business units. If projected funding requirements are understated it causes our business unit to raise additional funds under pressure or to be funded by the cash balance available. Sourcing funds under pressure results in high cost of funds. Using the cash balance leads to liquidity issues within the bank”.

To make money available for lending to consumers, this business units must forecast the amounts they will require in advance so that Treasury can raise the funds through the markets. Forecasts are received with discrepancies between projected and actual funding requirements. As a result, the development bank loses money since Treasury either raises more money than necessary or raises funds insufficient to lend to clients, necessitating the raising of emergency funds, which are more expensive. H-SM-1 states that interfacing the Treasury Management System with the SAP system will aid in resolving this issue.

The H-MG-1 indicated that the information is received late due to the fact that it is drawn manually. Information that is sent late or is unavailable affects the timely availability of money and the monitoring of financial debt covenants agreed upon with investors. The

business unit is responsible for notifying investors of any covenant breaches. A breach of the covenant could result in investors withdrawing their funds from the development bank.

5.9.10 The role of the IT division

What is your expectation of IT?

“For me IT is the support of the organisation in terms of the systems to enable operations. IT is there to support the business strategy, business units and also to identify any gaps that could be plugged by technology”

The IT division must assist this business unit to acquire information, store it and make it available when required by all users that are authorised to do so. The IT division must assist this business unit to have access to information of internal and external data. It must provide insights through internal and external data.

The IT division must be knowledgeable about the bankings system and solutions that available externally. The IT division must support the business unit with technology for it to achieve the objectives of the business strategy.

5.9.11 The IT division’s understanding of case unit’s strategic objectives

The IT division must have knowledge and understanding of the strategies and objectives of each business unit. The IT division must also reach out to the business units and gain understanding of their operational requirements. There is no partnership between the Treasury unit and IT.

5.9.12 IT infrastructure

So you said you use mostly economic performance data and market trends, do you get those from the internet and how is access and connection?

“Yes, in order to follow trends you need to constantly be on the internet. We depend on the availability of the connection to the network for external systems data over the the internet. The connection and availability is not as high as it should. The access to the internet and the network has limitations and blocked access due to the business trying to save costs”.

The development bank has experienced several outages caused by aging IT infrastructure and external issues related to the telecomms service provider. Though there is not much they can do with most issues that are external, the development bank can look at renewal of the IT infrastructure.

5.10 SECTION 9: CASE UNIT I – HUMAN CAPITAL

This section provides data analysis and discussion of findings from Case Unit I: Human Capital business unit of the development bank. The data were from semi-structured interviews with line managers, senior specialists and specialists. Data analysis and discussions were conducted per theme and subthemes. A theme is tantamount to a study objective.

For anonymity and confidentiality, participants were coded. Three interviews were conducted with a senior manager, a manager and a specialist. The participants were coded as I-SM-1, I-MG-1 and I-SP-1 respectively.

5.10.1 Case unit description

Please describe what your business unit does?

“The Human Capital Unit provides the policies for the people management component of the bank, we do training and development, we facilitate the whole recruitment process, we do onboarding of new employees, performance management policies, we manage remuneration benefits and an enabler and facilitator of people management”.

The business unit is divided into the following divisions: the executive manager's office, which provides strategic direction; talent management, learning and development, which focuses on developing employee talent; business partners, which provides employee support and administration; and payroll, which operates and administers payroll.

5.10.2 Case unit strategy & objectives

Please describe for me what your strategy entails?

“Our strategy focusses on the employee life cycle. The life cycle starts from the moment we attract talent, we nurture and develop the talent until they exit the bank. We contribute

to the bank by developing remuneration offerings for attracting the most suitable skills and by further developing and deepening the skills required for the current employees to achieve what is required to meet the objectives of the business strategy”.

The business unit is a support function to the organisation. They contribute to the business strategy by recruiting the right talent for all business unit and the executive. Their role has a direct impact on the business strategy because it is the people and their skills that will achieve the goals in the business strategy.

5.10.3 Case unit process and function

The case unit are enabler and facilitators of people management within the development bank. They facilitate training and development of employees, recruitment and onboarding of new employees, employee performance management and remuneration and benefits.

They utilise the SAP Human Capital Management (HCM) module's personnel administration sub-module to record employee data for reporting on new acquisitions, attrition, and head count at EXCO and the board of directors. SAP HCM also manages payroll. SAP records the organisational structure and integrates it with the leave benefits. Talent management is utilised for learning and development, with employee training being tracked.

5.10.4 Case unit challenges and weaknesses

What are the challenges you are faced with in the business unit?

“Let us start with the strategic component of finding skills. There is a challenge with finding competitive skills in the market for strategic positions because the skills are limited. Our competitors have more flexible approaches of retaining and investing in their employees than us because of the fact that we are a state own entity and have regulations against being flexible when doing recruitment. Commercial banks, for example, nature and invest in people that in key roles. They are able to identify and pay retention bonuses for such employees or even earmark them for promotion. We are regulated by the labour relations acts, employment equity act, and so on that emphasises equal opportunity, equitable treatment and fair opportunities for all. Talent management is seen as a

discriminating and an unfair process because it objectively identifies individuals for empowerment. Retention bonuses are not allowed. Performance bonuses are dependant on the organisational performance and profit made by the development bank. There is therefore a limit in terms of what can be used to retain key employees. Performance bonuses are approved by the board however final approval is provided by the Minister of Finance on whether they can be paid or not”.

There is moratorium on recruitment and this has caused the development bank's structure to be lean. The turnaround time and other processes of the development bank that take time are also an area that creates more stress for the employees. Employees do not feel valued by the organisation.

The business unit uses business partners to support the organisation with human related factors. The business partners deal with everything operational to strategic within the business units they support. They also interact with anyone from lowest level to senior levels of the organisation. The challenge they face is that their position is lower management level and therefore makes it difficult for them to deal with line managers and senior managers. Unfortunately employees seems to listen more to what is said by senior managers and not staff in lower levels of the organisation. It is when they have to handle strategic issues that they struggle.

5.10.5 Case unit strengths and opportunities

What is your plan with regard to automating your business processes?

“Let us take learning and development, as a start. The entire learning and development process can be automated on SAP. Where employees can apply for training on the system, book for training, capture course, capture costs, complete attendance register and indicate training completion. Performance management has been automated on SAP but further development is required to have the final ratings pull through to other areas of such as personnel administration and talent mangement to udpate the employee profile. Termination process is a manual process. This process can be automated where individuals can resign on the system. Workflow would then inform all people concerned informing them of the termination date. The system should be able to automatically inform other units

of the resignation so that other the termination process within those business units can be performed such as IT to retrieve working equipment and access cards to the building from an employee that has resigned”.

The business unit would like to interface all processes where possible, from the recruitment to the exit process. All manual forms for recruitment are to be made available electronically and then signed electronically with data from the forms feeding automatically into SAP.

Huge progress have been made with integrating modules of SAP and including the organisational structure in the system. The automation of the organisational structure has assisted the business unit with head count management and employment equity reports and the hire process. This automation has improved data integrity. The recruitment process is now completed through an external portal. This has improved the reporting and the process. This has also assisted in bringing down the number of audit findings in the case unit.

The strength of the team that it is made up of a small and dedicated team. There is camaraderie between peers in this business unit.

5.10.6 Organisational information needs and processes

What is the information that you need operationally and how do you receive it?

“We receive personnel information of applicants through job application and recruitment forms initially from recruitment agencies. We then capture some in SAP Personnel Administration module after the individuals have joined the bank. We use the MIE identification and verification system to verify applicant’s ID numbers, qualifications, work experience and criminal checks. Personal development plans (PDP) are also a source of information acquiring. Employees use PDPs to capture their qualifications”.

The information is received manually on documents or as reports and captured on SAP. There is not system integration between SAP and any other system that is used to collect data at this point.

5.10.7 Skills in the IT division

Does the IT division have the right skills?

“The IT division has people that have the ability and skills required to implement what the bank requires. Of course it is not all of them. There are individuals that could be stretched more who are not used to their full potential”.

The issue of inadequate human resources in the IT division is acknowledged by Human Capital Management. The IT division staff is overwhelmed with a lot of requests. The IT division team is doing the best they can with the budget constraints they have.

5.10.8 IT challenges and weaknesses

What are the challenges and weaknesses you have identified in IT?

“The applications we use in the business unit are adequate. The challenge we need to overcome is to use the applications to their full potential. That is what IT needs to help us with. The applications are under utilised. The integration component is a huge gap that needs to be attended to. The current systems that are Microsoft based can be made to integrate with one another and the current Sharepoint that is used as an intranet portal”.

The majority of the development bank's workers are anti-technology. They struggle with technology adoption, and because the organisation is obliged to operate from home due to Covid-19 government limitations, they are forced to use technology, which increases their stress levels. In other situations, solutions are implemented without providing adequate training to those involved. The majority of employees have not received extensive training on the software that is utilised throughout the organisation and are simply using the solution's basic functionalities. In regions where material is distributed to educate employees about how software works, it has been demonstrated that the majority of them are uninterested until they are required to utilise the software.

Are there any other challenges you have seen in IT?

“Our business unit uses a lot of paper in their processes, the management, storage and keeping track of this paper is becoming a problem. The automation and digitisation of

documents and record management will assist with the management of paper records and improvement of the process”.

The tool for records management system (RMS) and a digital signature were implemented exactly for this purpose. The intention, with the RMS, was to implement it in phases. The first phase was the front line units and all other units that are involved in the originations of loans. The digital signature application has been implemented and rolled out through out the development bank. However, not everybody is using it. Again this points to the issues of system adoption prevalent in the development bank.

5.10.9 IT strengths and opportunities

What are the strengths of the IT division?

“The reconfiguration of the payroll process that was undertaken recently and IT was available for support. IT provided incredible support and have contributed to the project immensely through working with external consultants. The IT help desk support with planning for terminations, new hires and providing new equipment has improved vastly. So there are pockets of excellence in IT”.

The I-MG-1 then quickly added that the introduction of newer technology, digitisation and further automation will assist in alleviating the substantial administration process which is paper intensive and assist to resolve the long recruitment process.

5.10.10 IT strategy

What do you think about the IT strategy?

“The IT strategy has never been shared with us as much as we have never shared out strategy with them”.

The IT division has not been involved or seen this business unit's strategy. This will make it difficult to support their critical processes. In the same vain, the business unit does not know the IT strategy and cannot be certain that the IT division will focus on enabling them to achieve their own strategy.

The strategies of the varied business units have not been shared with IT. Therefore it goes without saying that the IT division would not know the strategies and needs of most business units they support and enable. This does not mean that the IT division does not know where the problems areas however. The problems areas of the business units are known as they are discussed in meetings and through different kinds of committees where the Head of IT is in attendance. They are also recorded as incidents through the IT Help Desk services.

5.10.11 How can the IT division improve?

How can the IT division can improve?

“IT must employ a more proactive approach in understanding the business strategy of our unit. IT must engage with both the business strategy of the organisation and business unit’s strategies and provide us with the latest solutions that will assist us in achieving our goals”.

The IT division cannot align to business units' strategies because they do not know what those strategies require. To a large degree this would explain why business unit have not been enabled to work effectively. The business information systems and applications are not optimised to user's preferences and requirements. By optimising these business information systems and applications, and related modules they would address most of the problems encountered by the case units.

5.10.12 The role of the IT division

In your opinion, what is the role of the IT division?

“IT must source data, store it in a structured way for processing. The data must be transformed in a way that will be usable information readily available in different platforms and systems. IT must support the business with regard to infrastructure and technological innovation and solutions. IT should be able to make work easy for employees and provide the information they require as and when they require it”.

5.10.13 The contribution of the IT division to enabling the case unit

What have been contribution of the IT division to the business unit?

“IT has enabled most processes for us which has added value in how we work. The reporting has improved. The systems are easy to use. The support from IT help desk and staff is incredible. It is commendable how they are working together with our unit. The contribution of IT to the business unit’s success is very high. The systems available, even though they need to be integrated even further, have enabled the division to function efficiently in most cases”.

The SAP application has made significant strides in enabling the HCM unit. The HCM business processes are well-established. The majority of SAP processes are capable of accommodating the daily operations of this business unit without requiring extensive system change.

5.10.14 Business information systems and applications to enable the case unit

The SAP system is not flexible and it requires configuration for most changes that are not standard and common to HCM. The SAP modules are huge and in the development bank only one IT person is available the module.

5.10.15 IT infrastructure to enable the case unit

What are your thoughts about the IT infrastructure?

“Even through the internet connection has not been stable for a while and there are times where the connection is lost without notice, it was impressive how the move from working in the office was achieved seamlessly without major issues especially with limited budget and human resource from IT”.

Due to the lockdown imposed during the Covid-19 pandemic, the development bank’s employees were directed to work from home. Except for minor connectivity and meeting management application concerns, the working from home policy had been a success for this development bank to a considerable extent.

5.10.16 Case unit’s understanding of IT

How well does your business unit understand IT?

“We do not have knowledge and understanding of IT. We need IT to lead when it comes to technology and solutions especially where we don't know how the technology can help us”.

Fortunately for this business unit, they have a Human Capital Information Systems (HCIS) person in their unit. The position bridges the gap between the IT division and users. This person assists with business requirements, testing, creating report and project management activities where systems and technology are involved. The partnership between the IT division and this unit has improved vastly since this person has been employed. The two business units now work very closely together and in a well-coordinated fashion.

5.11 SECTION 10: CASE UNIT J - AUDIT

This section provides data analysis and discussion of findings from Case Unit J: Audit business unit of the development bank. The data were from semi-structured interviews with line managers, senior specialists and specialists. Data analysis and discussions were conducted per theme and subthemes. A theme is tantamount to a study objective.

For anonymity and confidentiality, participants were coded. Two interviews were conducted with a manager and a specialist. The participants were coded as J-MG-1 and J-SP-1 respectively.

5.11.1 Case unit description

This business unit provides the development bank with level 3 assurance. This means that they provide assurance in addition to the applied internal controls. The additional assurance is to ensure that the development bank's assets are safeguarded. The business unit follows up after procedures have completed to ensure that processes were being followed in accordance with the development bank's policies.

Over the years, the business unit has evolved its operations by being involved not only in the aftermath, but also in an advisory and consulting capacity, advising committees on risks they foresee.

5.4.1.1 Case unit strategy & objectives

The business unit's function is to provide assurance to the board of directors and EXCO on how the development bank manages risks in the organisation. The management of risk starts with identifying risks from the developed business strategy. The inherent risks identified in the strategy are factors that can affect the successful delivery of the strategy. The business unit assists the development bank to develop controls and mitigations against the identified risks that pose a threat to the successful achievement of the business strategy.

5.11.2 Case unit process and function

Describe the processes and function of your business unit?

“We assist the bank to identify all the inherent risks from the strategy to the business functions and process. We need to be able to develop controls that are adequate to manage those risks so that we can foresee what the eventual outcome of the strategy will be. Our function then is to make sure that management has correctly identified the risks and put in place the appropriate controls that will manage all their risks. From audit we then give recommendations on where they can make improvements if any”.

The business unit conducts internal audit projects and oversee external audits conducted by external organisations such as the Auditor-General South Africa (AGSA). AGSA audits national and regional government agencies, public corporations, municipalities, and local entities for regulatory compliance. The business unit creates annual audit plans which outline the audit for all the business units. Teams are allocated with tasks assigned. Audit projects are performed within a particular set time and reports are then created and submitted to management.

The business unit, much like all other business units, has defined business process, operating models and standard operating procedures. However, these are not necessarily aligned with the objectives outlined in the business strategy and its objectives.

5.11.3 Case unit challenges and weaknesses

Which challenges do you face in the business unit?

“If you were to ask anyone in our team what the strategy of the bank is, you would be lucky to find someone that can articulate it correctly for you. In short, the audit unit does not review the development of the strategy. We do not give insight into what could be missed in the development of the strategy. Even in the operationalisation of the strategy itself our approach has not been optimal because we have been raising issues that are not relevant. There has also not been instability in the business unit due to the change in executive management and critical positions staying vacant for a long time. This has caused the unit to be incoherent”,

The business unit is too operational and is focused on mundane issues rather than strategic factors. The audit reports that they produce have not been impactful to the organisation's business strategy pillars.

5.11.4 Case unit strengths and opportunities

The business unit's leadership is informed about the role and what is required. Unfortunately, there has been a lack of consistency and coherence, which has harmed the business unit's ability to execute on the business strategy.

Despite the difficulties associated with leadership change, the business unit was able to meet its yearly audit plans.

5.11.5 Case unit's contribution to the development bank's strategy

How does your business unit contribute to the development bank's strategy?

“The main function of audit is to provide assurance to the board and senior management on how management manages risk in the bank. Managing risk really is about understanding your mandate, develop a strategy and manage the risks inherent in that strategy. You identify things that can affect your strategy and you put controls in place. Based on the strategy you put up business functions and processes that will help you to achieve your strategy. And even within the business functions and process there are certain things that can go wrong because is a risk is that thing that can go wrong causing you not to achieve your goal”.

The role of this unit is critical to the achievement of the organisation's business strategy. They guard against factors that have the capacity to derail the strategy. The function is forward looking and deals with hypothetical risks they may affect the development bank's existence now and into the future.

5.11.6 Organisational information needs and processes

What is the information that you need operationally and how do you receive it?

“We request information from the business units through e-mail. The requested information is received back manually through email and memory sticks where data is too big to be sent through e-mail. We do not have controls yet to manage information when it changes hands. The process for request of information and the full tracking of who requests for information is not available especially when sensitive and confidential information is changing hands”.

The business unit requires internal information from all business units of their business processes. The business unit charter provides them with permission to have access to all information including highly confidential and sensitive information. They also look at frameworks, charters and governance documents available internally. All the data forms part of audits.

Most of the governance information is hosted on the internal Intranet portal and other information is acquired manually.

5.11.7 IT challenges and weaknesses

What are the challenges and weaknesses you have identified in IT?

“The manual process presents data challenges. The main issues that we are concerned with is the accuracy, completeness, validity and timely information. Due to the manual processes throughout the bank. Other business units also take time to compile and create reports and provide the information that we request. There is a general lack of understanding of critical information. This creates a gap with the interpretation of data into information that should support business decisions”.

Despite the numerous concerns made about IT difficulties, the Audit unit determined that systems are secure with only minimal enhancements required. Each year, the Audit unit conducts a security audit.

5.11.8 IT strengths and opportunities

What are the strengths of the IT division?

“We use an audit system called Team Mate for audit projects. It has different modules that covers all aspects of initiating and completing an audit project. We are not using it optimally and maybe that is where IT can look at into for opportunities. Maybe the problem is not just IT because we are not using it and still function outside the system and performing the function manually. The other business problems is the long turnaround time with our loan application. I think IT can assist with introducing tools and solutions that can enable the process to be effective and optimal”.

The IT division can look at data and reports. When data is used to draw insights for analysis the development bank could obtain guidance on the development of new products without much investment in terms of buying new systems. The insights provide the behaviour of customers which guides on the need of the customers.

The IT division must play a proactive role in advancing solutions to business. The IT division plays a reactive role where they wait for things to go wrong or wait for business to present a problem. They should be anticipating issues by speaking to business. They should be pushing solutions before business experiences problems.

5.11.9 How can the IT division improve?

How do you think the IT division can be improved?

“IT must be given prominence at EXCO and board level. IT is been placed under Finance and it reports directly to the CFO. This relegates IT to a secondary support function and therefore lacks the prominence it deserves. IT must be represented at EXCO by a Chief Information Officer (CIO) that will position it well within EXCO and the board to get the right budget and support”.

With the appointment of an IT executive manager as part of EXCO, the IT division will be best placed to continuously review the business strategy and identify opportunities where improvements can be made, where information can be collected and to provide information that will guide executive management on other opportunities. These opportunities can be highlighted at the highest levels at the development bank for visibility and funding.

5.11.10 IT strategy

Please reflect on the IT strategy and what you think of it?

“The IT strategy and structure has never been shared with us. We have never seen the IT strategy. In the same way, the audit strategy has never been shared with IT and other business units. Our strategy is also not shared with business. It is one thing I have been crying about since I joined, to say that we need to go to the different business units and tell them what it is that we are about. We have not been able to do that. We need to go to the business and explain our strategy at least annually”.

5.11.11 Role of the IT division

What are your expectations of the IT division?

“Technologies are solutions. IT solutions must collect data through accurate capture, complete data timely and processing it into meaningful information and present for operational and strategic use. Technology should enable the bank to access the new and emerging technologies for decision making within the business. Business processes that are automated to enable a business unit to function optimally must be considered”.

In addition, the IT division should automate all business process and interface systems throughout the development bank. The business unit depends on Microsoft Excel spreadsheets that are not audited for changes. The data is on spreadsheets and cannot be used for insights because it is unstructured. The development bank loses an opportunity to gain insights from the data on spreadsheets.

5.11.12 Business information systems and applications to enable the case unit

Which business information systems and applications do you use to enable business processes?

“We use Team Mate application to perform, record and report on the audit projects. Team Mate defines the best practice methodology and tracks how long audits projects take, how they perform and track how resources are allocated in an audit. Team Mate has been implemented adequately to allow us to function effectively and optimally. IDEA Data Analysis tool is used for random audit sampling selections”.

There business unit also has a tool called the Audit Command Language (ACL) that is used by one employees in the business unit for audits on IT related projects. The tools is not provided and support by the IT division. ACL is an analytics platform used for fraud detection and avoidance and risk control for data extraction and analysis. It samples large data sets to detect transaction anomalies or trends that may suggest monitoring vulnerabilities or fraud.

It is unclear what the policy is with regard to the employees bringing their own tools for use for the development bank's purpose. What the IT risk register clearly identifies is parallel IT structures within the development bank. This risk has been highlighted to the board of directors.

5.11.13 Case Units and the IT division partnership

Is there a process in place that encourages communication and collaboration between the IT division and your business case?

“IT must understand business unit's processes to proactively intervene and improve them. IT must not wait for us to go to them with a blueprint, they must be close enough to the business to know what can be improved in the business unit. I think IT can try to play a proactive role and try and see what can be improved to minimise manual interventions. I could be wrong, but as far as I know, IT waits for business to tell them what they want to do before they can come up with an IT intervention of sorts”.

The IT division and business units must have a close relationship where the IT division will be exposed first hand to the challenges facing business on daily basis. There is no partnership or a defined collaboration strategy between the IT division and other business units at the development bank.

5.12 SECTION 11: CASE UNIT K - EXCO

This section provides findings of Case Unit K: EXCO. The findings for this case unit were not acquired through interviews but were based on meetings, workshops, presentations, documents, publications and staff meetings held at the development bank. The findings were conducted per theme and subthemes. A theme is tantamount to a research objective of the study.

5.12.1 Case unit description

EXCO is made up of 9 executive managers and the CEO manning the 11 business units. Even though the IT division has been listed as an independent case unit in this study, it is not a stand-alone business unit, it is a division under the Finance business unit headed by the CFO.

5.12.2 Case unit process and function

The development bank was established to fill a void that commercial banks are unable to fill due to their primary objective of profit and inability to take risks on development transactions.

5.12.3 Organisational challenges and weaknesses

EXCO is faced with an organisation in challenges due to a number of reasons including heightened competition, high cost to income ratio, need for staff retraining to focus on client services and legacy strategic decisions taken.

A participant in the IT strategic workshop session stated that the greatest challenge with the bank indicated by the results of the customer survey is the slow turnaround-time and poor customer feedback during the loan applications process. This is also caused by several manual processes and multiple systems that are not interfaced.

5.12.4 Organisational skills

According to a survey completed with customers it indicated that the development bank has professional and friendly staff whilst they display technical understanding of the agricultural sector, this was disclosed in a meeting with a team of bankers.

5.12.5 Business strategy & objectives

During a briefing session with all the staff where a presentation was shared with the staff, the business strategy was said to cover the following aspects:

- Inclusive land ownership by economically marginalised individuals;
- Agricultural and industrial restructuring, land re-allocation or previously marginalised planning programs;
- Improving the efficiency, profitability, expenditure and creativity of rural and agricultural financial systems;
- Access to land for agricultural purposes;
- Programs: facilitating sector growth and improved land use; fostering and improving environmental sustainability; rural development and job creation;
- Development of commercial agriculture
- Food security

The development bank has provincial offices in all 9 provinces and satellite offices. Current infrastructure provides the required geographic footprint located where farmers are therefore can enable the development bank to:

- Improve customer relationship management
- Link client facing & supporting teams to regions/provincial network than be head office focused
- Build closer strategic partnerships with other organisations and department of governments such as Department of Agriculture, input and equipment suppliers, service providers to support and so on.
- Decentralise credit granting mandates i.e. to improve credit decision

5.12.6 How the case unit supports the business strategy?

The executive managers and the CEO builds the business strategy. The executive managers develop business units strategies that supports the organisation's business strategy. They manage the alignment and strategic direction of their business units.

5.12.7 Organisational information needs and processes

It was stated in the CEO's staff meeting to the entire organisation that EXCO needs analytics mainly around the loans, products, client information, interest paid and earned, performing & non-performing book and so on to make business decisions. They require up-to-date high level information on report dashboards.

5.12.8 Organisational culture

It was stated in the CEO's staff meeting to the entire organisation that EXCO intends to change the culture to one of personal responsibility where employees continue with personal development and growth.

5.12.9 IT resource allocation

During the IT strategic session, which was attended by the majority of executive managers, a participant claimed that "the CEO was unclear about the IT division's resource requirements." According to one source, without a roadmap outlining the IT division's clear goals and resources, it's difficult for the CEO to evaluate the level of the IT division support required.

5.12.10 IT challenges and weaknesses

The IT landscape document shows that most of the processes are extremely manual and need to be automated. Systems that are client facing need to be developed or acquired. There are too many independent systems and manual tools causing data capturing duplication. Technology must be enabled to provide the capability to do electronic banking, card transaction facilities and e-commerce platforms for subsistence farmers.

Internal controls must be digitised and credit models and collateral management calibrated. A banking app is required to create additional channels and to shorten the

process for loans applications. The IT division must scale up its platforms and systems to improve accessibility, presence and customer service.

Finance models are largely on Microsoft Excel. The organisation struggles to pull reports and figures that can support strategic decisions. In cases where those reports and figures are able to be drawn it involves a long process and eventually they are delivered late.

5.12.11 IT strategy

The strategic issues are that technology tools and platforms are internally focused, paper based and repetitive. The IT tools are misaligned to the business changing environment.

The IT strategy document was adopted a year prior, hinged on the premise that the development bank needed to move from manual to automated processes, enable omni-channel capabilities and expose digital capabilities to the client. The new IT landscape architecture was designed with that in mind. The digitisation and omni-channel strategy is dependent on automating the internal processes. Quite a few processes are automated internally which could affect the development bank's plan to expose capabilities externally to the client.

According to the CEO, an IT strategy must be a view into the future. The strategy must be a series of innovations that gives a completely new and techno focused future bank.

5.12.12 Case unit's expectation of IT

During the IT strategy workshop, a participant stated that the IT division is an enabler of business processes. Its role is to use technology to resolve business problems through building solutions that will make employees to work faster and efficiently.

5.12.13 Business information systems and applications

The development bank has implemented their first phase of Customer Relationship Management (CRM) system where they record the end-to-end customer journey for loan origination. This system is new and is in the process of being rolled out to the rest of the front line business units.

5.12.14 IT infrastructure

The IT strategy, as presented during the IT strategic workshop, noted that the IT infrastructure and architecture needs to be renewed to allow the development bank to deliver cutting edge technology that will be customer centric, enable decision analytics, mobile tools, big data, use of cloud computing, block chain, 360 customer view and real time processing of customer data, digitisation, omni-channel platforms, Internet of Things (IOT) and Application Programming Interface (API) services.

5.12.15 IT organisation

IT should enable technology to serve business units, not initiate and manage projects. This results in the IT division being overworked, jeopardising delivery on all fronts. IT should contribute expertise to the business's vision. The business units are key attributes of the IT-supported initiatives.

5.12.16 IT Capability input and output

A competitive budget is required to enable the IT division to achieve the objectives as outlined by the IT strategy.

5.12.17 IT structure

From the organisation's business strategy presentation document, it is clear that the achievement of the strategy is largely dependent on the technology. This can only be achieved through partnership with other organisations that have the relevant platforms to support what the development bank requires if the current IT division's structure cannot handle the amount of responsibility that supports the strategy.

5.12.18 External governance factors

In the IT strategic session, a participant stated that the shareholder, which is the government of South Africa, has expressed the expectation that the development bank should be sustainable, self-sufficient, focused on serving its clients, focused on development and well governed.

5.12.19 External technological factors

In the IT strategic session, it was said that the development bank's competitors and commercial banks have taken advantage of the emerging technology and are using it to gain advantage over this bank. The technology has enabled them to offer their services on different online platforms and therefore opening other channels at the expense of this development bank.

5.12.20 The IT division's track record of past performance

In the IT strategic session, it was noted that the IT division did not have a good track record for successful delivery of projects. Most of the projects are delivered over budgets and after the agreed timelines. The systems used in the development bank are not used to their full capacity.

5.12.21 How can the organisation improve?

In the IT strategic workshop with some members of the EXCO, it was noted from the executive managers that the entire credit and loan origination processes needed to be re-engineered because it had too many touch points. Compliance risk management, regulatory risk universe and monitoring of the entire credit risk needed to be enhanced and automated. Credit and financial models needed to be automated as well. The entire Talent Management, performance management and succession management processes is manual and paper based. The Annual Financial Statements (AFS) are compiled manually on Microsoft Excel. The manual finance report drafting is manual and therefore the financial monthly reports are reported late in the month. The loan application process is not managed actively based on operations management principles.

5.12.22 Case units and the IT division partnership

In the IT strategic session, it was mentioned that the business units must take responsibilities in defining their needs, outlining their requirements and working with the IT division to develop solutions that they will meet their necessities.

5.12.23 IT scope and IT infrastructure

In the IT strategic session, it was noted that the IT infrastructure and supporting software should be improved to handle the capacity required for a fit for purpose bank. An implementation of data analytics competence and central call center must be established.

The IT division must implement a full end-to-end automated and interfaced system which is paperless.

5.13 SECTION 12: CASE UNIT A-K STUDY FINDINGS AT ORGANISATIONAL LEVEL

This segment presents the findings of all case units, from A to K with regard to the organisational data analysis and discussion findings. The discussions and findings were consolidated under this section because they focus on the organisation and not individual business units, even though they were noted during the interviews conducted with users from different business units. The findings were analysed and discussed per theme and subthemes. A theme tantamount to a research objective of the study.

5.13.1 Business strategy and priorities

Which objectives should the development bank prioritise in the business strategy?

“I suppose they are short, medium and long term. For the short term, the bank must be able to survive financially, both income statement and balance sheet. The repayment of interest of some of our lenders and funders must be prioritised. If the bank cannot survive in the short term, then you do not need to even look at the medium and long term strategies”

The development bank's mandate is to strengthen the agricultural sector by providing financing and job creation, expanding the sector, ensuring food security, and facilitating access to land for historically disadvantaged South Africans.

The priority of the development bank is food security, social upliftment and development of the sector. The development bank's development mandate is a program of inclusion of the historically disadvantaged individuals into the agricultural sector. Development and inclusion means that more land must be transferred into the hands of black people of South Africa.

What is the mandate of the development bank?

“The bank lends money and earns interest on money loaned and services and fees charged. The mandate is to provide debt solutions and technical support and to develop the sector with innovative solutions for food security. Development farmers are the previously excluded people of South Africa, which are the black people. The development mandate of the bank is to advance inclusive economic participation of the historically disadvantaged individuals in the agricultural space through its business operations unit. The role of the bank is to provide solutions that other banks cannot provide for primary and secondary agricultural needs. This requires government sufficient support”.

What is bank's business model and how is the development bank performing against its model?

“But if we do not get our model to work, we are still going to make losses. And central to that is the government funding which is the government support. We do not only have to rely on capital markets but we can secure other forms of funding through government even if it is a combination of grant and debt. And we could bring it onto our balance sheet and we can reduce our cost of funding and we can on lend to our target audience at a decent rate. Secondly, once we've got stability in terms of our financial model, our government support, then it is critical, and that has happened, that we look at who is our target audience, and is our offerings suited for our target audience. Buying commercial money and selling it to development farmers is not solving the problem because you are expecting a development farmer to operate in a commercially structured transaction. And then your credit guidelines and a bunch of the rules that you apply are commercial rules yet you want to use it for development”.

The development bank's operating model of acquiring funds from commercial banks and loaning it to development farmers is not sustainable because the development client will be charged a commercial rate and will be assessed as a commercial client.

To this date, most of the reports required by the main shareholder, the government, is based on the reporting on transformation.

Is the business strategy shared enough?

“I don't think the overall strategy of the bank is visible. I don't think it is incorporated in a whole lot of things that we do. I feel that in everything that we do, we should be referring to portions of the business strategy.

Even though we have the PMO, I feel we do not have central place where initiatives are deliberated including everyone in the bank. It feels like projects are initiated in silos”.

There is generally a poor communication of the business strategy to the entire bank. It is also not communicated on a continuous basis. The business strategy is not visible and does not guide the projects initiatives adequately. Projects are initiated in silos without involving all other case units.

5.13.2 Business strategy vs case unit strategies

What is the problem with the business strategy?

“There is a poor communication of the business strategy. For me the issue is lack of communication around the strategy. Communication is one thing, understanding is another. There could be a problem with poor understanding of the strategy”.

The business unit strategies must all be drafted from the organisation’s business strategy. The process of developing the organisation’s business strategy maybe flawed because it is kept at a corporate level and not cascaded down to the business units. Business units should not develop strategies on their own. Business unit’s strategies must be developed to align with other units.

5.13.3 External Factors

Is the government is doing enough to support the development bank financially?

“We are supposed to aggressively support upcoming businesses and development clients. You know that there is more risk in development clients, upcoming businesses and startups. Our risk appetite must allow for that. If our risk appetite is governed by funding from commercial markets then we cannot afford to do development and provide financial support for start-ups. The government must fund these in totality through grants and very low interest rates.”

The development bank is completely owned by the South African government. The government capitalises the development bank and the residual funding of the asset book of the development bank is raised through financial markets, i.e. the capital and money market to fund the corporate, commercial and development book. The development bank’s balance sheet is funded by capital from the shareholder and liabilities from a pool

of investors from within the country and internationally. The government provides the development bank with guarantees to enable it to access funding from investors.

5.13.4 Bank's Leadership

Please describe the leadership of the development bank?

"Our EXCO has become operational. The management is performed through multiple committees that do the same thing".

The board of directors is accountable for the management of the development bank on behalf of the Minister of Finance of South Africa. The CEO and the CFO are executive members of the board of directors. Together with other executive managers they are responsible for the day to day running of the development bank. The challenge identified with this leadership is that it is more operational than strategic. The development bank has too many committees that have to perform oversight and recommendations on executive decisions. The culture of many committees indicates that executive managers are not likely to take decisions without referring the decision making to committees.

Other issues cited with the leadership include the development bank's inability to recruit for and, in most cases, replace important jobs quickly enough. The replacement of the CEO and executive managers always takes more than 24 months and this affects the stability of the development bank. Some critical positions stay for long periods of time without being filled. Executive communication is not done well, not done frequently and not effective leading to frustration and information gaps that fuel gossip and speculation.

5.13.5 Organisational culture

What is the culture of the organisation?

"Not everyone is as passionate to close deals as they should be. There is a lack of working together for a common goal. There are people that are willing to work together and get things done however, there is a huge silo mentality problem with the bank. Most people and business units are only focused on what concerns them and not interested in what other case units are doing".

The development bank is very reactive. They deal with with problems after they happen rather than be proactive and prevent these problems.

Another participant said of the culture,

“The culture of the bank is negative. We are not one. We work in silos. We do not collaborate. Every business unit is focused on itself and what it needs to do”.

There is a culture of cliques in the development bank. The employees that are in the right cliques are preferred and favored. The favors translates into high performance scores and promotion even when the individuals are poor performers. There is lack of excellence.

Is the organisation to open to accepting new ideas?

“There is an unspoken rule of ‘don’t tell me to do things differently when I have been doing them the same way for so many years’. Many employees have been with the bank for many years and are older. They do not want to change how they do their work”.

The organisation is resistant to change. The employees that have been with the development bank for a longer period would rather rely on methods that they have used in the past. They rarely accommodate new ideas and ways of doing new things. There is lack of high performance at the development bank. Most employees seems to be comfortable with the bare minimum even though the individuals are intelligent and capable themselves. There is a lackluster attitude to attending meetings or even arriving on time. There is generally no sense of urgency and lack of accountability in the development bank. The development bank is inward looking and therefore is not client centric.

The development bank operates in an ancient way. It is not dynamic at all. It is hierarchical and highly dependant on its policies. The culture is not of working smart but of following rules. The focus is not on output but on how much input goes into what employees do.

Does the organisation encourage innovation?

“The heavy reliance on policy stifles innovation within the bank. There is a strict adherence to policy without entertaining anything else creatively to bring in innovative solutions. The employees have a civil servant mentality rather than a corporate mentality. Policy is used to not be innovative instead of creatively”.

The development bank, being and SOE, is highly regulated. The regulations are part of controls introduced to reduce mismanagement of the entities which has plagued the state institutions in the past.

The positive culture that the development bank has is how warm they are. It makes it an enjoyable place to work for.

5.13.6 External governance factors

The development bank is owned by the state of South Africa. In the past, the state funded the development bank. In recent years, the development bank raises money from the capital markets. The investors on the markets require decent returns and therefore their rates are high as compared with the state that used to make funds available to the development bank at a very low interest rate.

5.13.7 External economic factors

What are the external challenges that affect the development bank?

“There are challenges that are beyond the control of the organisation such as lack of support from the main shareholder. The time it takes to appoint the CEO is beyond the organisation as they are appointed by the minister. These appointment takes many many months. The drought is another problem that we cannot do anything about, but it affects us”.

The development bank provides financing for agricultural related activities and assists applicants with access to market access. The challenges of the development bank is the high cost of funds. To encourage historically disadvantaged individuals to get into farming, the development bank should entice them with low interest rates. This is not possible because of the high cost that the development bank lends money from the capital markets.

The government does not provide sufficient financial support as they should to allow the development bank to take on more risky clients within their development book. Development clients like start up businesses are considered to be high risk. Government has provided capital injections in the past even though it has not been sufficient to cover the development bank's needs for development finance projects. The development

bank's processes are pro commercial farming as opposed to development. The processes do not provide the leniency required for development customers. Development customers do not have access to land and therefore they depend on leased land.

5.13.8 External climate factors

Since the development bank is focused on agriculture, its strategy is affected by the change in climate. The development bank's strategy must respond to extreme climate conditions that affect farmer's ability to repay the development bank.

5.13.9 Social alignment factors

There is no relationship between business units in the development bank. During the planning and development of strategies of business units, the IT division is not involved. There is no ongoing collaborative sessions between the IT division and business units for continuous alignment and understanding.

5.13.10 Current practice

What are other challenges that affect the development bank?

"As you know I have recently joined the bank. The position I am occupying was vacant for 8 months. I am told this it is probably the shortest recruitment time because most critical vacancies were vacant for a longer period".

The development bank takes very long to recruit for positions which causes instability in the organisation. Even critical positions of leadership in the organisation are affected by the tendency to keep positions vacant for a very long time. The development bank spends an extended period of time with acting CEOs. The CEOs are appointed by the development bank's board of directors and approved by the Minister of Finance. This takes long and affects the stability of the development bank. Before the current CEO, there were 3 CEOs that were acting in this position for a period of more than a year.

Do you have effective processes, procedures and policies in the development bank?

“The other challenge is that at the bank if you say ‘there are no processes and systems, they will say you are lying because there are processes and systems’. But what is critical is that you must have processes and systems that actually achieve the objectives set out. So the litmus test is whether the systems and processes are aligned to the objectives so that we can have an alignment”.

How can the issues with turnaround-time with regards to originating loans be resolved?

“The organisation must have a special focus on documenting their business process, maintain them and optimise them. A special unit is required to do this until all processes are optimised and aligned. Process bottlenecks and unnecessary requirements for documents must be done away with. Until then, this problem will not be resolved. At this present moment, each business unit is responsible for their own processes. There is no methodology for business processes management. The processes are not synchronised. As result, problem becomes an IT one. They have to develop solutions that will cater for processes that are not suitable”.

The long turnaround-time for loan origination has impact on loss of revenue. Not only is the development bank losing new business but it is at risk of losing clients to commercial banks. The strategy of commercial banks is to provide better service and better products for the development bank’s clients. In turn, customers are able to move their entire facilities to commercial banks at this bank’s loss.

5.13.11 Organisational competency and value

How can the organisation improve?

“The bank is not sufficiently nimble. When we say something is not sufficiently nimble we mean that is not open to change and innovation. When you attend meetings you are told that suggestions are against policy, there is not sense of exploitation and innovation. We should look at how we can be innovative even with the policy in place. The mode of thinking should be solution driven and not make policy an excuse. The environment must allow people to make mistakes. People must be able to challenge policy. The policy must be used to achieve what we would like to achieve and not as a hindrance”.

There is misalignment of the financial model and operational model with the development mandate. The development bank has to be clear who their target audience is so that they can focus their strategy on that group. The approach of development should not be at

farmer level but at a programme level where programmes are targeting a number of black farmers. The development bank can then through the programme assist those farmers with the assistance of agricultural cooperatives.

To eliminate the culture silo mentality, the organisation needs to be integrated through a change management approach. Change management must start at the top. EXCO must first buy into the approach of dealing with issues facing the development bank. Knowledge management must be implemented and enforced. The culture of knowledge repository must be enforced to share knowledge and break the silo mentality.

The development bank could leverage on other services provided by other government departments and agencies to accomplish most government programmes. There are technical services offered by other government agencies that the development bank can use instead of developing the competencies in house, but the overall echo system is not in place as it should. MOUs have been entered into in the past with these agencies but they have not resulted in any benefits. The development bank must develop a strong drive to recover on outstanding client payments and align their lending to the borrowing of funds from investors. Non performing loans must decrease. IT systems must assist the development bank to be proactive in managing these challenges and issues.

5.13.12 Summary of key challenges

The IT strategy documents has indicated the issues, opportunities and improvements outlined below.

5.13.13 IT strategy, architecture planning and governance

Architectural planning is not developed as a critical competence within the development bank as part of the IT strategy creation process. As a result, the current IT infrastructure and architecture environment is composed of technologies that were not deliberately sourced to support the IT business goal. Although governance institutions and committees such as the information technology steering committee exist, they remain in their infancy. There are no fundamental governance functions such as design authority or release management. As a result of the lack of a well defined, articulated, and

integrated role for the IT division and business units, system ownership and management responsibilities are unclear.

5.13.14 IT processes

Owing to the lack of systems and the use of standalone excel spreadsheets to execute everyday operating activities, there is a need for manual processing. There is a shortage of end-to-end systems and process alignment in areas where systems are in operation. There is replication of company-wide functionality where some departments execute specific functions on systems and others perform specific functions manually. Due to manual procedures and data processed in various systems and locations, there is no single version of truth for information, leaving the development bank unable to accurately report on its business imperatives. Poor data processing generates data inconsistency for enterprise operations and decreases the productivity of opportunities driven by analytics.

5.13.15 The IT division human resources and organisational structure

On one of the development bank's reports, it is stated that, "staff turnover continues to be an issue at the development bank, which is concerning and could have an effect on delivery. Acting arrangements have been put on place to fill the vacuum as much as possible. However, tension is felt most acutely in specialised functions and responsibilities".

Under the current IT structure, skills silos persist, restricting individual development and the ability to provide business support across specific areas. Relevant responsibilities are not assigned to the most effective locations, which makes leadership difficult and results in ineffectiveness.

5.13.16 IT processes, capabilities and services

The current IT processes and capabilities are not mature enough to successfully deliver on the organisation's business strategy. Users have mentioned application solutions that do not meet their requirements as an example of an insufficient program lifecycle method. There is a shortage of business analysts and ability to manage projects, which has an

effect on the efficiency of application solutions and the speed with which they are implemented. The development bank lacks a solution architect practice, resulting in inadequate control over the overall design.

5.13.17 Role of the IT division - Six broad categories

To effectively support the organisation's business strategy, the IT division will need to fulfil these key roles. However the capabilities to fully become business innovator if desired are developed over time.

5.13.17.1 Keep Technology Running

Provide effective IT services and solutions that create business value and helps manage business risks. Be responsive and proactive in meeting business needs.

- Ability to deliver IT services and information security at agreed service levels
- Managing daily IT operations in the most effective and efficient way
- Strengthening IT business-wide reputation by delivering on promises and agreements
- Identifying, communicating and resolving information security and IT risks effectively
- Communicating performance of IT services and operations clearly

5.13.17.2 Manage Technology Investment

Provide efficient IT services and deliver positive return on IT investments. Manage IT spend diligently.

- Excellent budget planning and allocation skills
- Ability to track, monitor, control and report costs incurred relating to the IT function and technology more broadly
- Solve business challenges and issues using cost-effective technology solutions and sourcing strategies
- Deliver IT services efficiently and technology projects on-budget

5.13.17.3 Information Broker

Provide valued insights and facilitate the flow and use of information to fulfil business information needs and support decision making.

- Anticipating business needs and providing relevant and sufficient information quickly and efficiently
- Maintaining sophisticated information and storage architectures to enable access to the right data at the right speed
- Communicating clearly the IT implications of proposals
- Ability to think and solve business problems creatively
- Information management and enterprise intelligence skills and knowledge

5.13.17.4 Business Partner

Actively partner with the business to generate ideas and solutions to enhance and improve business processes and operations.

- Continuously improving the delivery of IT services
- Enabling business function and processes optimisation, enhancements and improvements
- Proactively gathering internal and external business inputs and stakeholder needs
- Developing technology strategic plans to achieve organisational goals
- Deep knowledge of business services, processes and operations
- Excellent business acumen, financial and commercial skills

5.13.17.5 Change Enabler

Help the organisation prepare and execute business change successfully. Enable effective business transformations with IT solutions.

- Project and leadership skills to drive technology change to enable business transformations
- People and change management skills
- Setting and communicating the vision and strategy for technology
- Providing robust but constructive challenge to business stakeholders

- Communicating clearly the technology and risk implications of business changes

5.13.17.6 Business Innovator

Help shape the future of the organisation by collaborating with the business to develop new business models using innovative and sustainable IT solutions.

- Continuously delivering latest and most innovative technology solutions
- Anticipating future impact of latest trends on technology function and the business
- Developing new business models with the business
- Utilising latest technology as the enabler for innovative business models
- Creating business cases and influencing key stakeholders

A high level assessment of the 25 core IT capabilities required to fulfil the IT division's role was performed to determine current capability. To deliver on its strategic contribution, the IT division will need to develop new capabilities, improve and close the gaps in existing capability.

5.13.18 The proposed IT architecture

5.13.18.1 Application

- Automation of business processes informed by customer, partner and employee journeys. The functionality of existing business information systems and applications such as SAP are fully exploited before new ones are introduced.
- Service orientation architecture is embraced.
- Systems integration is facilitated using services gateway and API gateway. Manual handling and manipulation of data for data transfers and system interfaces have been eliminated.
- The application environment is standardised, consolidated, rationalised and governed by an Enterprise Architecture Governance forum.

5.13.18.2 Data

- Single source of truth for critical business information is enabled through use of master data management tools.

- Increased use of real-time system automated integration between business applications enables timely access to accurate and reliable data.
- An Enterprise Data Warehouse for organisation wide reporting and analytic needs.
- Centralised and access controlled documents and records management solution with well-defined file structures.
- A unified self-service analytics and reporting toolset with an easy-to-use user interface.
- Information and data standards, and processes assist in maintaining a controlled, well-governed information and data environment.

5.13.18.3 IT infrastructure:

- Cloud-based IT infrastructure services where risk is deemed low to enhanced IT infrastructure availability, capacity and flexibility, and improved disaster recovery and business continuity capabilities.

5.13.19 IT Control - IT governance model

Effective governance is a critical success factor for the IT division to be able to deliver on its strategy. Decision-making governance bodies have been formally established to provide oversight and direction in ensuring:

- Alignment of IT with the business and realisation of promised benefits
- Responsible use of IT resources
- Appropriate management of IT related risks

The development bank has established the following governance bodies that provide IT oversight and operate at different layers:

- Board of directors
- Executive Committee
- IT Steering Committee
- PMO Committee
- IT Management Committee
- Change Advisory Board (CAB)

5.13.20 IT strategic focus areas

Architecture

- Transform current architectural landscape from manual to automated
- Apply the EA domain model framework when assessing changes to the architecture landscape
- Business information systems and applications architectures are aligned to business architecture components
- Evaluate impact of End to End User Experience transformation

IT Governance

- Establish IT governance forums to guide technology use and investments
- Develop and implement IT processes aligned to the COBIT framework to support the execution of the IT strategy

IT Development Capability

- Establish missing IT capabilities such as enterprise architecture, project support, system development life cycle (SDLC) and data management
- Provide the necessary training to IT human resources in support of the identified IT capabilities

Business-IT Alignment

- Implement an IT business engagement model
- Through business analysis, understand and validate business requirements to deliver solutions that meet business needs
- IT to develop an appreciation and understanding of the business to collaborate with the IT division in proposing solutions

5.14 FINDINGS FROM ANALYSIS OF ORGANISATIONAL DOCUMENTS

5.14.1 The organisation's business strategy

The formulated business strategy is intended to serve as a stimulus for agricultural sector development and transition. This strategy is based on a series of strategic goals for sustainability, namely development, growth in the market, quality of jobs, food security and sustainable development, based on four strategic pillars. The strategic goals are set out and explained below.

5.15 SUMMARY OF FINDINGS PER THEME

5.15.1 Analysis of the business and IT strategies

The findings indicate that EXCO develops the organisation's business strategy and then communicates it to all workers. It is not workshoped and revisited further and frequently across the organisation to cement its importance in the organisation and to make sure that it is well understood across all levels of the development bank. The findings also reveal that the business strategy is not deciphered further down to business units level to crystallise its impact on specific business units. This leads to employees forgetting the business strategy. According to literature review, this raises a number of challenges that leads to an unknown, ambiguous or lack of buy-in of the business strategy.

The findings show that the IT strategy was developed in response to the need to enable the organisation's business strategy and the issues and challenges raised by the CEO, EXCO and various business units within the development bank. The IT strategy was especially crafted to focus on building systems that would be externally focused since most of the systems in the development bank were internally focused. Challenges such as architecture, people, processes and data were identified. The development bank's IT strategy does not focus on the bigger issues of positioning the organisation in the IT marketplace nor does it seek to identify and exploit opportunities for competitive advantage. The development bank's governance process has established committees that assess and prioritise projects.

5.15.2 Triangulation of models

Findings showed an absence of theories to explore and describe business-IT alignment in South African development banks. Through triangulation of four theoretical lenses the study sought to explore in-depth the phenomenon of business-IT alignment at development bank in South Africa.

5.15.3 Social factor's influence on alignment

Findings show a gross lack of communication in the development bank from the CEO and EXCO to the rest of the employees. There is lack of formal communication structures between business units. There are no platforms for communication in the development bank or forums where business units can collaborate and share information. Except for EXCO, there is no form of senior management or line management forum where ideas are shared and plans communicated. There is no relationship between business units and the IT division in terms of collaboration and planning.

Findings show that the moratorium placed on recruitment caused the development bank's structure to be lean. Due to the fact that numerous senior personnel across the development bank are accountable for more than one role due to acting arrangement in critical positions, teams are unable to function optimally. The IT infrastructure and staffing levels are insufficient to meet the development bank's existing strategy. Projects have been paused due to the present IT staff's workload.

The findings show that there is low levels of IT understanding from executive managers, EXCO and the board of directors. Strategic decisions, including the development of the business strategy, are made without a strong technical expertise and do not include IT. There is lack of confidence on the ability of the IT division to deliver based on the history of failed projects, missed deadlines, archaic technology still in use and systems that do not meet the user's requirements.

5.15.4 Improving alignment between business and IT

Findings show a lack of knowledge sharing practice in the entire organisation. There is lack of partnership and communication in the organisation which results in insufficient

consultation, sharing of information, joint strategy development sessions which would encompass the developemnt of the organisation's business strategy. There is lack of proper systems to measure IT value and ROI on projects completed.

Findings show that the senior and executive managers from different business units are not involved in making IT decisions, prioritising IT projects and effectively managing resources, especially the required budget for IT projects.

5.16 SUMMARY OF CHAPTER 5

This Chapter presented the analysis and discusion of findings. Findings from semi-structured interviews and content analysis were presented and discussed using themes and subthemes, which are equivalent to the study objectives. Theories were matched-up with each theme or objective to provide guidance and lens for analysis. Eleven case units and their results were examined. A case unit is tantamount to a business unit.

The next chapter interprets the findings of the report and ultimately presents the framework for the alignment of business and the IT division in development banks in South Africa

CHAPTER 6: INTERPRETATION OF FINDINGS AND THE FRAMEWORK

6.1 INTRODUCTION

The previous chapter presented data analysis and the discussion of findings. In this chapter, the findings from the preceding chapter are interpreted. The findings are interpreted against existing literature. Literature is used to contradict or affirm the findings on steps and procedures that a development bank may take or has taken relative to the business-IT alignment process. The interpretation of findings then informs the conceptualising of the business-IT framework for South African development banks.

The study utilised the Strategic Alignment Model, IT Capability Model, MIT90s framework, and the Strategic Alignment Maturity Model as theoretical lenses. These lenses were key to exploring and understanding the phenomenon of business-IT alignment.

6.2 INTERPRETATION OF STUDY FINDINGS

This section provides interpretation of study findings.

Interpretation of findings are presented per theme. A theme is synonymous with a study objective. The findings are drawn from the eleven case units. The findings that tend to be identical among the eleven case units are articulated and interpreted as one.

6.2.1 Interpretation of findings for the first theme

The first theme: *to analyse and understand how the business strategy and the IT strategy manifest in South African development banks.*

With this objective, the study sought to analyse and understand the alignment of the business and IT strategies in the context of South African development banks. This is accomplished through the use of the Strategic Alignment Model's alignment elements, which are the business strategy, IT strategy, organisational infrastructure and processes, and IT infrastructure and processes.

6.2.1.1 Business Strategy

The development bank's business strategy is well defined and articulates the business scope very clearly. The strategic pillars are outlined with objectives that have been set within the business strategy. The market strategy within the business strategy outlines the products, services, information and experiences offered to a segmented target market. The strategy is developed by the CEO together with EXCO and then shared with the board of directors and the Minister of Finance for acceptance and approval. After it has been approved it is shared with the employees of the development bank. The organisational governance is in place and functional.

The development bank follows a combination of defender and reactor business strategies. They defend their position by seeking to stabilise the business by protecting their status in the market (Parnell et al., 2015) and they are reactive in that they respond to circumstances of competition only because they are forced to (Anwar & Hasnu, 2016). Literature states that business strategies should respond to social, economic, political and technological changes which are external whilst looking at internal aspects of how they can grow their business (Malviya, 2017). Business strategies could follow the same line-of-business method of growth through market penetration, market development or product development. Literature aligns with findings because the development bank's strategy is clear on these in that it uses the legislation that governs it to focus on its internal and external aspects of its strategy.

The findings show that the business strategy is developed by EXCO and then communicated to all employees initially. It is not workshopped and revisited further and frequently across the business units to cement its importance in the organisation and to make sure that it is well understood across all levels of the development bank. The findings also reveal that the business strategy is not translated further down to business units level to manifest its impact on the specific business units. This leads to employees forgetting about the business strategy. According to literature, this raises a number of challenges that leads to an unknown, ambiguous or lack of buy-in of the business strategy. Literature recommends that management create platforms of continuous communication of the business strategy with the employees to keep the business strategy unambiguous

(Nandi Adimo, 2017). Literature further suggest that the business strategy and the technological solutions be revised on a frequent basis. In certain sectors, the technological context has the ability to evolve quicker than the historic three to five year strategic period. As a result, organisations need to continually monitor and revise their strategies to take advantage of the evolving technical landscape rather than respond to technological developments in their markets and industries (Berman & Hagan, 2006).

6.2.1.2 IT Strategy

The findings indicate that the IT strategy was formed in response to the requirement to support the organisation's business strategy and to the concerns and issues expressed about IT by the CEO, EXCO, and various case units within the development bank. The IT strategy was especially crafted to focus on building systems that would be externally focused since most of the systems in the development bank were internally focused. Challenges such as architecture, people, processes and data were identified. The findings and literature are aligned as they both agree that the focus of technologies must be on the client's interests instead of concentrating only on technology-enabled internal efficiencies (Berman & Hagan, 2006). Development banks must concentrate on creating solution to resolve the challenges that their clients are grappling with and find innovations and emerging market strategies that may have an impact on those specific issues.

Literature maintains that the IT strategy should be lifted from its conventional internal fixation to also tackle external questions as to how well the company is positioned in the fast-changing IT marketplace (Henderson & Venkatraman, 1999). Literature further argues that the IT strategy should be a framework that enables the organisation to use its technology to identify and exploit opportunities and competitive advantage over its competitors (Ben Romdhane Ladib & Lakhal, 2015). The findings show that the development bank's IT strategy does not focus on the bigger issues of positioning the organisation in the IT marketplace nor does it seek to identify and exploit opportunities for competitive advantage .

Findings show that the development bank's governance process has established committees that assess and prioritise projects. This is in line with literature as it will assist with the use of resources to support the objectives of the organisation's business strategy.

According to Teo and Ang (1999) business units must work together with IT in partnership to prioritise IT projects.

6.2.1.3 Organisational Infrastructure and Processes

According to the findings, the development bank has 9 executive managers accountable for eleven case units that are required for any development bank to function. The CEO, executive managers and senior managers form part of the development bank's senior management team. Line managers, junior manager, specialist are all in place. The development bank's infrastructure consists of 9 provincial offices and satellite offices across South Africa. There is no alignment between the organisational structure and business process in areas where systems are in operation.

Literature states that business processes and organisational structures must be aligned to enable business-IT alignment. Optimised business processes and optimal organisational structure must aligned to the goals of the organisation's business strategy (Prieto & de Carvalho, 2018; Reynolds & Yetton, 2015; Wadström, 2018). This is in contrast to what is happening at the development bank. The business processes are not optimised and the organisational structure consists of vacant positions and acting arrangements. Banks would rather maximise profit and are not keen to replace employees when they resign (Gbangou & Rusu, 2016). They further list the reluctance of banks to invest on resources through training as barrier to business-IT alignment. This bank is guilty of both issues of recruitment and investing in its own employees.

6.2.1.4 IT Infrastructure and Processes

The IT strategy must consist of a set of goals, plans and targets relating to the IT systems and capabilities, IT competencies and IT governance (Kanavittaya, 2016). A strategy is a plan of how an organisation will use its IT infrastructure to achieve its objectives (Academy, 2012). The findings show that the IT infrastructure has been neglected. The IT infrastructure is in a state of deterioration due to old age or long use. A dilapidated IT infrastructure cannot support an organisation's business strategy that seeks to take advantage of new and emerging technology to improve its products offering and compete successfully in the market.

6.2.1.5 IT Processes

The findings reveal that there is a heavy reliance and strict adherence to policy and procedures within the development bank. This in turn stifles innovation. Innovation initiatives have been established in the business but have not yielded any results. The IT division does not have its own innovation initiative and drive. Literature shows that the creation of the IT Strategy should support capability development, which, in turn will lead the way to a vision that supports innovation success. Success comes from converting IT strategy into action (Ritter & Gemünden, 2004).

The findings show that the current IT processes and capabilities are not mature enough to successfully deliver on the development bank's business strategy. The findings further show in the IT strategic focus area that the development and implementation of the IT processes aligned to the COBIT framework to support the execution of the IT strategy is planned. There is no alignment with this plan as yet. According to literature, the IT processes define current practice patterns and methods of maintaining expertise in an organisation. These are also part of evidence of IT activities that form part of IT procedures. IT processes contribute to the quality and effectiveness of internal management of organisational and production activities. Integration also involves IT processes and frameworks for knowledge-sharing in knowledge-intensive firms (Butler & Murphy, 2009).

6.2.1.6 IT Infrastructure

The findings of the IT Infrastructure have been discussed and interpreted above, see 6.2.1.4 above.

6.2.1.7 IT Organisation

The findings show that the current IT structure is not fit-for-purpose. Projects have been halted because the current IT human resources is overwhelmed with other projects. Key positions remain vacant because the organisation has placed a moratorium on recruitment. There are excellent performers and non-performers within the division as a result the team is under pressure to deliver and overwhelmed by projects underway.

This finding is in line with the findings of Gbangou and Rusu (2016). They have found that banks are hesitant to invest in human capital by hiring additional staff because their return on investment is unclear. Employees face a heavy workload on a daily basis. Certain employees perform tasks that should be delegated to multiple individuals. Lack of time for new training results in an unfit-for-purpose IT structure, which acts as a barrier to business-IT alignment.

6.2.2 Interpretation of the second theme

The second theme: *to explore and describe business-IT alignment in South African development banks through triangulation of four theoretical lenses.*

With this objective, the study sought to use and triangulate four theories of business-IT alignment to explore and describe the alignment of the business and IT strategies in the context of South African development banks. The four theories are Strategic Alignment Model, IT Capability Model, MIT90s and Strategic Alignment Maturity Model.

The triangulation of theories will assist the development bank:

- with how to formulate a business strategy, IT strategy and how to align the two
- how to measure and continuously monitor business-IT alignment

6.2.3 Interpretation of the third theme

The third theme: *to describe how social factors, culture and communication, influence business-IT alignment in South African development banks.*

With this objective, the study sought to analyse the social alignment of business and IT. This is done using the MIT90s framework's components of alignment, which are culture, external factors, antecedents and current practices.

6.2.3.1 Culture Dimensions

Findings show a gross lack of communication and knowledge sharing in the development bank from the CEO and EXCO to the rest of the employees. There is further lack of formal communication structures between business units.

Literature has identified shared domain knowledge, success of IT as critical enablers of business-IT alignment sophistication (Charoensuk et al., 2014), without these two there is no way an organisation can achieve successful alignment (Alaceva and Rusu (2015). Communicating effectively strongly encourages shared domain knowledge. Therefore, if there is shared domain knowledge between IT and business through effective communication, the level of alignment in the organisation will be improved. (Suwatana & Winai, 2014)

Findings show that the moratorium placed on recruitment caused the development bank's structure to become lean. Even before the moratorium, the development bank took too long to replace people to critical positions. Most of these critical positions were filled with other senior managers and executive managers in acting capacity. There are many people in acting arrangements. Many senior employees across the development bank are in acting arrangement for critical roles, as a result the teams are affected and cannot performing optimally.

Literature argues that resources availability is the key factor in the business-IT alignment. Availability of the right employees in the right positions is the most important factor that influences the implementation of both the business strategy and the IT strategy (Obeidat *et al.* (2017). Organisations are bound to accomplish their goals when suitable structures are employed to oversee the deployment of other resources effectively (Coltman *et al.*, 2015).

6.2.3.2 External Factors

Finding have indicated that the development bank's competitors, which are commercial banks and other cooperatives in the agricultural space, have taken advantage of the new and emerging technology to gain advantage over the competition. Technology has enabled them to offer their services on different online platforms and therefore opening other channels at the expense of this development bank.

Literature states clearly that for organisations to exploit competitive advantage over its competitors, they must develop an IT strategy that is capable to do so. The strategy must enable the development bank to use its internal IT infrastructure to identify and exploit

new opportunities (Ben Romdhane Ladib & Lakhal, 2015). Organisations could gain competitive advantage by adopting and implementing Business-IT alignment properly leading to growth and stability in the business (Li & Tan, 2013). The IT capabilities that are an inherent capacity should allow an organisation to explore the use of technology and services to gain business advantage over time through IT (Feeny & Willcocks, 1998).

6.2.3.3 Antecedents

The findings show that there is low levels of IT understanding from executive managers, EXCO and the board of directors. This could be due to the fact that there is no representative of technology at that level such as a CIO. The strategic decisions including the creation of the business strategy does not have a strong representative of technical specialist and does not include IT inputs. The findings show also that there is lack of confidence on the ability of IT to deliver based on the history of failed projects, missed deadlines, archaic technology still used in the development bank and systems that do not meet the user's requirements.

Shared domain knowledge and historical IT success are key facilitators of business-IT alignment success (Charoensuk et al., 2014).

6.2.3.4 Current Practices

The findings indicate that there are no platforms for communication in the development bank or forums where business units can share information. Except for EXCO, there is not form of senior management or line management forums that shares ideas and communicates plans and achievements. There is no connection for business units and IT to collaborate and plan.

According to literature, the practice of business units management and executives and IT management and executive participating in each other's strategic planning sessions will yield many benefits for business-IT alignment (Alaceva and Rusu (2015). Communication and connection between IT and business planning is important (Jia *et al.*, 2018).

6.2.4 Interpretation of the fourth theme: Study Recommendations

The fourth theme: *to determine how business-IT alignment can be improved in the context of South African development banks.*

Subsequent to interpreting the study findings, above, this section determines how the alignment can be improved by providing informed recommendations for business-IT alignment in South African development banks.

6.2.4.1 Study recommendations

The factors and elements recommended for the improved business-IT alignment described and discussed in this section as follows:

a) Corporate Governance

Corporate governance, policies and procedures can be a hindrance to business-IT alignment. Especially if the governance process is onerous. It is recommended that management create effective corporate governance controls that will allow for the organisation to maximise IT flexibility to respond to market changes. Management should create effective controls that govern the allocation of IT resources and to ensure that the IT strategy supports both the organisation's business and SBU capabilities. Senior and executive managers from different business units should contribute and be involved in making IT decisions, prioritising IT projects and effectively managing resources for IT projects. Through corporate governance, there should be a clear allocation of risks and rewards between business units and IT.

b) Internal and external factors

Internal and external factors can affect the alignment of business and IT in South African development banks and therefore care must be taken to adopt and implement the alignment of the business and IT strategies properly to lead to growth, gain competitive advantage and stabilise the business. The development bank's competitors have taken advantage of the new and emerging technology and are using it to gain advantage. The development bank must use and take advantage of the alignment of business and IT to deal with the challenges that will emerge internally and externally.

c) Enterprise Architecture

EA is an organised and coordinated collection of plans for the combined illustration of business and IT landscape in the past and the current and the future state of the organisation. EA is seen as a wide-ranging tool to develop and maintain the alignment of the business and IT strategies. It can be used to facilitate and maintain business-IT alignment. The development bank must adopt one of the EA frameworks. This study suggests that a missing IT capabilities such as enterprise architecture be adopted. The study suggests the TOGAF framework because it has been successfully used to link the strategic goals and value proposition of organisations to processes and technology in the past.

d) Business Strategy

The business strategy defines the behavior of the organisation in the market which is guided by its plans, policies and procedures. The Business strategy must be developed to respond to the social, economic, political and technological changes. It should further stipulate the product-market offerings, product quality, pricing, value-added services, and distribution channels which have a bearing on the competitive advantage over the competition. Strategic alliances and joint ventures directly impacts structural mechanisms for organising business operations.

The development of the business strategy must involve all employees to increase trust in the top management as well as increase buy-in. It is strongly recommended that a CIO is recruited to form part of the executive management and be involved in the formulation of the organisation's business strategy. Businesses are striving to be customer centric whilst they also become more agile. With the fast-paced technological changes, the customer is more tech survey than any other time. Therefore access to customers and their demands are changing fast.

e) Strategic Alignment

Strategy deficit occurs when the organisation's business strategy fails to provide a vision for the IT strategy. To remedy this, the organisation must build IT capability. Strategic alignment refers to enabling the organisation to compete with other organisations

externally using its internal IT infrastructure. The choices that define the IT strategy required to execute the organisation's business strategy will depend on the IT capacity.

f) IT Strategy

The IT strategy refers to the plan of how development banks can use all technical tools, systems, hardware, software, local and wide area network, and the entire bank's IT infrastructure to achieve the objectives of the organisation's business strategy. The IT strategy constructs refers to the IT scope and architecture, IT management, IT capability, IT mandate and budget required to execute the business strategy of a South African development bank

An effective IT strategy should identify new business opportunities by allowing the organisation to take advantage of consumer data by finding strategic ways to improve customer loyalty. It should support capability and capacity development, which in turn leads the way to a vision that supports innovative success. Success comes from converting IT strategy into action. The IT strategy should be lifted from its conventional internal fixation to tackle external questions as to how well the company is positioned in the fast-changing IT marketplace. The IT strategy should be a framework that enables the organisation to use its technology to identify and exploit opportunities and have competitive advantage over its competitors.

g) SBUs Strategies

The difficulty for organisations is to achieve synergy between their business strategy and the strategies of their SBUs. Complexity comes when the IT strategy has to align to both levels of strategies. The objective of the SBU strategies is to guide the operational IT strategy to enable and support business operations activities for identified business units.

Functional alignment refers to the alignment of business unit's processes, IT infrastructure, structures and goals with the IT strategy. The IT strategy must respond to two levels of alignment, strategic alignment and functional alignment. The organisation must develop competencies at both corporate level and within SBU where IT capabilities can be deployed to support business capabilities.

h) Operational IT Strategy

The Operational IT strategy refers to the plan of how the development banks can use its capability, IT infrastructure, structure, processes and skills to enable the functions at business unit level of the development bank. Strategic business-IT alignment dominated operational business-IT alignment however it is encouraged to take both strategies into consideration. The Operational IT strategy will spell out when and how IT will gain access to business units and gain understanding of the strategies. It is in the business units strategies that their processes, goals, objectives, structures needs and requirements will be outlined.

i) Business Social Initiatives

The system users from business units do not understand IT because of lack of time and interest to learn IT. This dearth of knowledge causes problems that result in unclear specifications, lack of confidence and trust in IT. It is recommended that formal and informal structures be put in place to break the resistance by sharing knowledge between business units and IT. A culture of trust, collaboration, partnership, and interaction between business units and IT must be encouraged.

j) IT Social Initiatives

IT management must position IT as a strategic partner to assist the development bank with achieving the objectives of the business strategy. Technology must be demystified. It is recommended that IT employ or train business analysts who will speak the same language as the business. The business analysts must be focused on certain business units so that they can understand the technical issues, aims, objectives of the particular unit. Regular meetings, cross-functional events, formal coordination of department and other structural and formal interaction between business and IT must be established.

Additionally, it is recommended that IT organise and host IT and technology events where employees will be informed about the IT services on offer. This will assist in demystifying technology and make users aware of what the IT capabilities are.

k) Social Alignment

Social alignment is the culture that guides the relationship between business and IT that is demonstrated when they interact through communication, sharing knowledge, planning and partnering. The recommendation is for development banks to strengthen their social alignment by committing the business executives to promote collaboration between business units and IT to achieve business-IT alignment. This study further recommends that business executives be aware that transformational leadership drives the required innovation and empowerment. It is also strongly noted that business-IT alignment cannot happen only through IT leadership, it requires organisational mechanisms to empower IT and business personnel to take responsibility for business-IT communication, developing shared domain knowledge and business planning that involves IT. Knowledge sharing practice must be entrenched between IT and business to establish a good level of understanding between parties. The practice must aim to establish the following:

- Partnership with agreements on priorities
- Mutual understanding of roles and responsibilities between IT and business
- Sufficient consultation and sharing of information

l) Organisational Culture

Organisational culture tends to drive strategic alignment, functional alignment and social alignment. Organisational culture refers to interactions, communication, practices and cooperation amongst business units, executive management and IT. It is recommended that the organisation implement a drive to change negative organisational culture.

6.3 CONCEPTUALISING THE FRAMEWORK FOR BUSINESS-IT ALIGNMENT IN DEVELOPMENT BANKS

Subsequent to the preceding theoretical and practical recommendations, this section now conceptualises a framework for business-IT alignment for South African development banks. The framework is conceptualised and discussed in bits and pieces (themes and subthemes making up the framework) and then finally put together as follows:



Figure 8: Corporate Governance Element

6.3.1 Corporate Governance

In state-owned companies, performance improves with better corporate governance (Safitri & Nani, 2021). Good governance helps a company to run efficiently and promotes innovation (Jia et al., 2019). Corporate governance also enhances decision making for business and IT managers. Good corporate governance prioritises IT projects and the effective use of resources (Alsharif et al., 2018).

6.3.1.1 Business Management

Management's commitment to IT is a critical factor for alignment. Management should be responsible for driving (Yaw Obeng & Mkhize, 2019). This study emphasises the critical nature of maintaining a strong working relationship between business and IT executives. Additionally, the study noted that agility enabled IT to enhance its capabilities in supporting a changing strategy that enables business executives to make quick and timely decisions.

6.3.1.2 IT Management

The lack of leadership in IT management is a huge barrier to business-IT alignment (Alaceva & Rusu, 2015). IT management is responsible for the IT strategy, its meticulousness and competitiveness, the IT direction, projects, operation and IT resources. The IT management's leadership qualities, such as the ability to resolve issues and inspire IT human resources to achieve goals is important in driving IT success (Charoensuk et al., 2014).

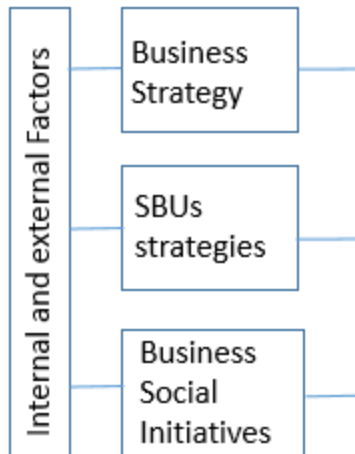


Figure 9: The Internal and External Factors Element

6.3.2 Internal and External Factors

Government restrictions; technological developments; and consumer needs all have an impact on the business strategy and social initiatives (Kekwaletswe & Mathebula, 2014). External factors include policies, stakeholder needs, government programs and mandates that development bank's receive from the government or province of government which owns them (Carrasco *et al.*, 2017). All these have effect on the business strategy, SBU strategies and social initiatives.

6.3.2.1 Business Strategy

Businesses adopt strategies in response to socioeconomic, political, and technical developments. (Kanavittaya, 2016). The business strategy is an attempt to become more customer-centric while simultaneously increasing organisation's agility. With the rapid advancement of technology, the client is more tech savvy than at any other point in time. As a result, access to customers and their expectations are rapidly shifting (Malviya, 2017).

6.3.2.2 SBU's Strategies

SBU's are support units that are strategically formulated to achieve the targets in the business strategy. SBU's must also develop their own strategies in support of the business strategy. Their strategies must be supported and aligned to the IT Strategy.

6.3.2.3 Business Social Initiatives

The alignment of business and information technology is made easier by the sharing of information and the creation of new knowledge. To improve the strategic alignment between business and information technology, two of the most important capabilities are knowledge management and coordination (Tejada-Malaspina & Jan, 2019). Business must take lead in coordinating knowledge sharing.

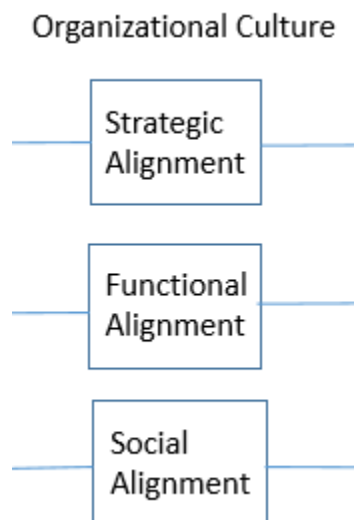


Figure 10: Organisational Culture Element

6.3.3 Organisational Culture

Organisational culture incorporates the people in the organisation and the organisational structures they are incorporated in. Organisational culture further refers to the individuals and their roles, which are their positions, duties, abilities, expertise, and characteristics. Organisation's structure refers to interactions, communication, practices and cooperation amongst workers (Liao & Teo, 2019). The organisational structure of any organisation is a critical part of the culture of the that particular organisation (Rockart & Morton, 1984).

Shared domain knowledge, success of IT are critical enablers of business-IT alignment sophistication (Charoensuk et al., 2014). Without these, there is no way an organisation can achieve strategic, functional and social alignment (Alaceva and Rusu (2015). The organisation must be in a position to influence a positive organisational culture that supports business-IT alignment.

6.3.3.1 Strategic Alignment

Strategic alignment refers to the degree to which the business strategy and plans, at a corporate level, and the IT strategy and plans, complement each other. Strategic alignment influences organizational performance (Chan & Reich, 2007).

6.3.3.2 Functional Alignment

The functional alignment is the alignment of the business unit's processes, infrastructure, structures and goals with the IT strategy. The functional strategy's objective is to develop IT capabilities that will enable and support business capabilities (Reynolds & Yetton, 2015). Strategic alignment influences organizational performance (Chan & Reich, 2007).

6.3.3.3 Social Alignment

The social alignment is the degree to which business and IT executives within an organizational understand and are committed to the mission, objectives, and plans of business and IT (Kaidalova, 2015).

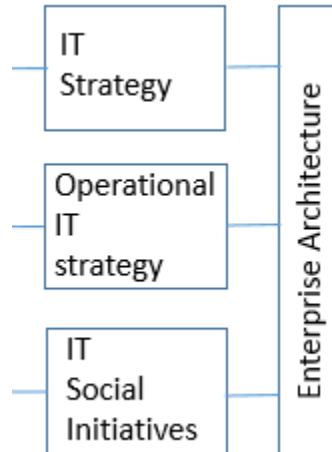


Figure 11: Enterprise Architecture Element

6.3.4 Enterprise Architecture

EA is an organised and coordinated collection of plans for the combined illustration of business and IT landscape in the past and the current and the future state of the organisation. EA is seen as a wide-ranging tool used to facilitate and maintain business-IT alignment (Zhang *et al.*, 2018). EA determines the alignment between the business

strategy and IT strategy, with the organization's business strategy development serving as a starting point for determining the IT strategy (Budiman *et al.*, 2018).

6.3.4.1 IT Strategy

IT strategy consists of objectives, strategies, targets pertaining to IT systems and capabilities, IT competences and IT governance (Kanavittaya, 2016). The IT strategy is a blueprint for how a company will employ software, hardware, and networks to accomplish its goals supported by the EA processes (Academy, 2012). An IT strategy allows a business to identify and capitalise on possibilities using its technology. (Ben Romdhane Ladib & Lakhal, 2015).

6.3.4.2 Operational IT Strategies

The IT operational strategy determines the role, tasks, and processes of operational activities. The operational strategy depends on the business strategy, which is based on the company's mission and shows how it will use its resources and functions (marketing, finance, and operations) to gain a competitive advantage (Suciu *et al.*, 2021).

Operational strategy increases production and reduces costs. It provides competitive advantages such as rapid responses to new product development, product quality and defect rate retention, work safety and customer-focused production. Using technology, data, and other resources, an operational strategy automates business and production operations (Lee, 2021).

IT must develop a strategy that will also enable SBUs at an operational level. These are plans that are focused on supporting and enabling strategies developed by each strategic business unit.

6.3.4.3 IT Social Initiatives

A robust relationship must exist between the CEO, CIO and EXCO. IT executives must participate in the formulation of the organization's business strategy. The formation of business and information technology alignment is driven in large part by human relationships and interpersonal communication skills (Tejada-Malaspina & Jan, 2019).

After conceptualising and discussing the various elements of the framework, above, the framework is now presented here. The framework shows the three levels of alignment, strategic alignment, functional alignment, and social alignment.

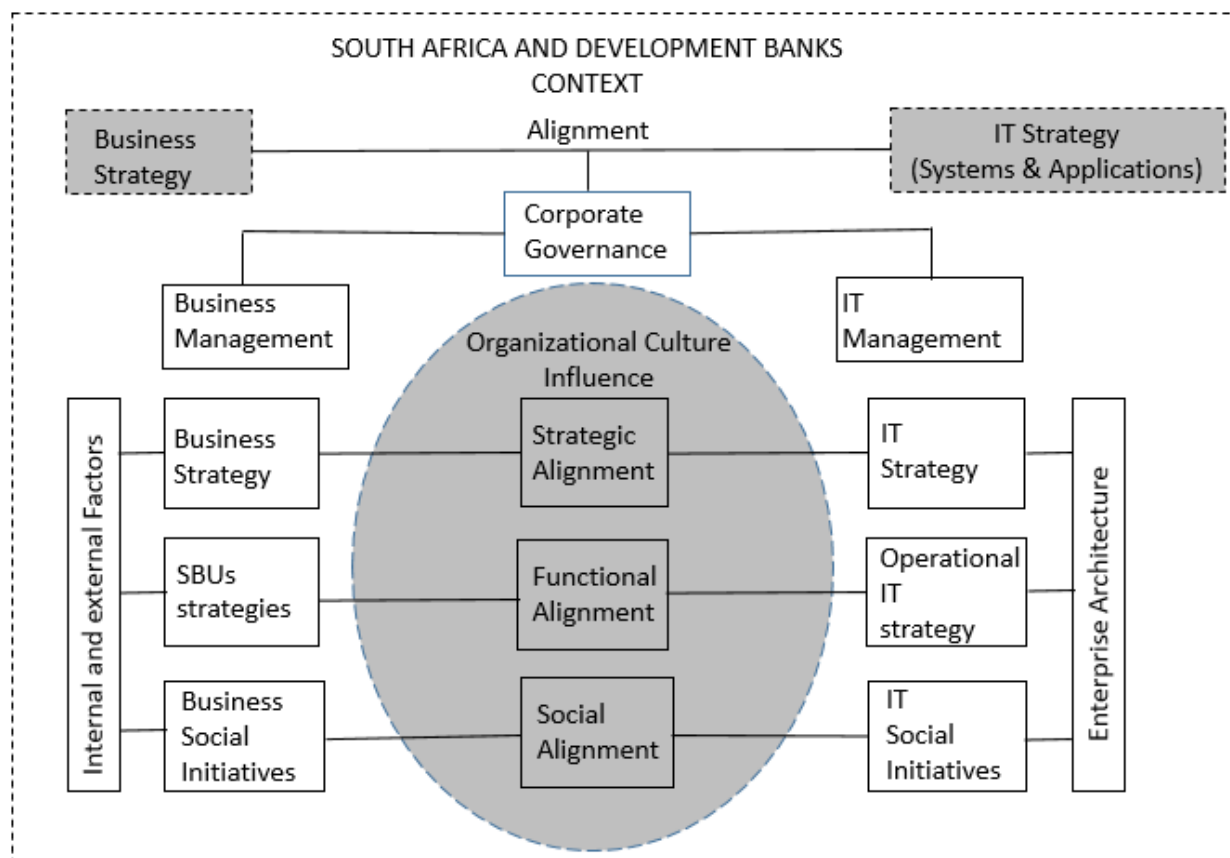


Figure 12: A framework for business-IT alignment for South African development banks

This subsection discusses the above framework by defining and characterizing the elements that makes up the framework.

Table 20: Recommended elements for the alignment of business and IT strategies

Business Strategy • IT Investment • Executive Management • Organisational Scope and Architecture • Organisational Competency	Strategic Alignment	IT Strategy • IT Mandate • IT Governance • IT Management • IT Scope and Architecture • IT Capability • IT Budget Control

SBU Strategies • SBU Capability • SBU Infrastructure • SBU Structure • SBU Operations • SBU Skills • SBU Processes	Functional Alignment	Operational IT Strategy • IT Capability • IT Infrastructure • IT Structure • IT Operations • IT Skills • IT Processes
Business Social Initiatives • Knowledge sharing practice • Formal organisational communication networks • Business partnership forums • Development of organisational skills • Inclusive strategic and functional alignment planning • Relationship between CIO and executive team	Social Alignment	IT Social Initiatives • Position IT as strategic partner • IT Value and ROI • IT Implementation Success • Common language between business and IT • Formal and informal integration • Development of skills in the IT division

The goal of the study was to conceptualise a framework that is context-sensitive to both the South African and the development banks' contexts. The framework, informed by the research problem and argument, accepts that context is key as it influences and plays a big role in how development banks do business and subsequently how business-IT alignment should be improved. South Africa is a unique country with unique political, social, economic, and educational backgrounds. The South African government uses development banks to play a pivotal role to redress the injustices of the past, such as where profit-driven financial banks cannot fund or finance a development effort. Government assistance policies are then implemented through development banks. The present business-IT alignment framework makes provision for this uniqueness aspect by incorporating both the internal bank and external (government and other funders) factors. These factors cannot be ignored and forms part of the business strategy which should be enabled by the IT strategy.

The framework also appreciates that South African culture is different from that of other countries. For example, South Africa has 11 official languages. Thus, communication and

shared knowledge ought to be sensitive to South African context. The framework provides alignment at a social level through social initiatives both from business and IT.

A summary of the study objectives, themes, findings and recommendations against theoretical lenses used are presented in table 20 below.

Table 21: A summary of the study objectives, themes, findings and recommendations

Objectives	Themes	Theoretical Lens	Core Elements	Findings	Recommendations based on the <i>Strategic Alignment Maturity Model</i>
To analyze the business strategy and the IT strategy	Business and IT strategies	Strategic Alignment Model	Strategic Alignment •Business Strategy •IT Strategy	The business strategy is not continuously and well communicated to all levels in the organisation	Continuous communication of the business strategy to all levels within the organisation
To explore the level of alignment between business and IT	Alignment between business and IT	IT Capability Model	Functional Alignment •SBUs Strategies •Operational IT Strategy	The business strategies (including SBUs) and the IT strategy are misaligned	The alignment of business strategies and IT strategy should be should be actively monitored & reviewed continuously
To describe how social factors, which are culture and communication, influence alignment of business and IT strategies	Culture and communication	MIT90 framework	Social Alignment •Business Social Initiatives •IT Social Initiatives	Gross lack of communication and knowledge sharing in the bank	Shared domain knowledge between IT and business through effective communication will be improve levels of alignment

6.4 SUMMARY OF CHAPTER 6

This chapter provided the interpretations of findings from chapter 5. The interpretations were done and provided per theme and subthemes. A theme is equivalent to a study objective. Theories were used as lenses and literature was used to qualify the interpretation of the findings. Theoretical and practical recommendations were then

provided. The recommendations informed the conceptualizing of the framework for business-IT alignment in development banks in South Africa.

The next chapter reflects on the research journey by evaluating, articulating the contributions, and concludes the thesis.

CHAPTER 7: EVALUATION OF THE RESEARCH, THESIS CONTRIBUTIONS, AND CONCLUSION

7.1 INTRODUCTION

The previous chapter provided interpretations of findings, the study recommendations and presented the framework. The interpretations were done per theme and subthemes. Theories were used as lenses and literature was used to qualify the interpretation of findings. This final chapter ponders on the research journey by evaluating the study. It provides study contributions, limitations and conclusion.

The next section assesses the study on the basis of the defined goals and objectives. The research problem that inspired the research is looked at first then the goal and objectives of the research are addressed to determine the degree to which they have been accomplished.

7.2 THE RESEARCH PROBLEM

The research problem was that, South African development banks, despite investing in information technology, are not realising the return on investment. It is inferred that this problem is due to business-information technology misalignment within the development banks. The misalignment means then that information technology does not effectively enable business processes. However, the existing frameworks inadequately address the "what", "how", and "when" to achieving business-IT alignment, in the context of South African development banks. Since development banks and South Africa are unique, there is a need for a context sensitive framework that would help address the identified alignment issues. To address the research problem, the present study sought to conceptualise a framework for business-IT alignment for South African development banks.

As the empirical evaluation of literature has demonstrated, and for the most parts, the current business-IT alignment models have been conceptualised with the developed countries in mind. This means that they will not actually be fully appropriate to the South

African context, and this therefore minimises the likelihood of a good alignment. At this point, the contextually relevant theoretical and practical knowledge gaps defined is what this study intended to bring across. The contribution of this study is in addressing this research problem and the identified knowledge gaps within a structure that is sensitive to the context of the South African development bank.

7.2.1 Research Goal

The goal of the research was to conceptualise a business-IT alignment framework sensitive to the South African development bank context. This study goal was attained, and the business-IT alignment framework for development banks in South Africa is presented in the previous chapter.

7.2.2 Research Objectives

The objectives of the study were attained as follows:

- To analyse and understand how the business strategy and the IT strategy manifest in South African development banks
 - The study analysed the formulation of the business strategy and IT strategy and the firm's articulation of the business administrative structure and processes that support and shape the ability of the firm to achieve its objectives.
- To explore and describe business-IT alignment in South African development banks through triangulation of four theoretical lenses
 - The study explored and described business-IT alignment in the South African development banks context using all four triangulated theories, which are MIT90s Framework, Strategic Alignment Model, Strategic Alignment Maturity Model and the IT Capability Model. These models were used as lenses for data collection, data analysis and interpretation.
- To describe how social factors, culture and communication, influence business-IT alignment in South African development banks
 - The study analysed how culture and communication affect the alignment of business and IT in South African development bank by interrogating

external factors such as the economy and technology, lack of sharing of information and knowledge and lack communication and collaboration.

- To determine how business-IT alignment can be improved in the context of South African development banks
 - This study conceptualised a framework for the development and maintenance of the alignment of the business and IT. It also presented recommendations on how the alignment between business and IT can be achieved in South African development banks.

7.2.3 Primary Research Question

In relation to the research goal, the primary research question was: *“How should South African development banks achieve business-information technology alignment?”*

Using the Strategic Alignment, IT Capability, MIT90s and the Strategic Alignment Maturity models as theoretical lenses, this dynamic question was addressed. And the context for how business-IT alignment is supposed to manifest in South African development banks is introduced and addressed in the previous chapters.

7.3 THE CONTRIBUTION OF THE STUDY

This section provides a fourfold contribution, namely theoretical, practical, methodological, and contextual contributions of the study.

7.3.1 Theoretical contribution

Triangulation of theoretical frameworks is on its own a contribution to the body of knowledge. The theoretical contribution of this study is, thus, in the triangulation of the four theories, namely MIT90s Framework, Strategic Alignment Model, Strategic Alignment Maturity Model and the IT Capability Model. The triangulation of these theories together have not been used previously to explore and describe business-IT alignment, especially in the context of South African development banks. These theories were used as lenses in data collection, data analysis and interpretation of findings to conceptualize the present framework.

The study has shown the “what” and “how” the alignment of business and IT manifests in the context of South African development banks. The study and literature were used to inform the theoretical knowledge base for the alignment of business and IT, notably in the context of South African development banks.

The theoretical gap was closed by using four theories, namely, MIT90s Framework, Strategic Alignment Model, Strategic Alignment Maturity Model and the IT Capability Model to analyse business-IT alignment in South African development banks. Triangulating these theories provided rich findings and interpretations that helped to contribute a theory for the business-IT alignment in the context of South African development banks. That is, a new theoretical framework is now added to the business-IT alignment literature, and the South African development bank context.

7.3.2 Practical contribution

The practical contribution of this study is in the framework that shows what should be considered, elements and concepts, when developing business and information technology strategies, as well as how business and information technology could be aligned in South African development banks. The framework shows the functional and strategic aspects that need to be recognised and accepted if a development bank wishes to practically achieve business-IT alignment. The practical importance lies in the manner in which business and IT strategies have to be developed, the vital position that technology plays in the other business strategies and their development, and the development of platforms to evaluate the ongoing alignment of strategies on a continuous basis. The practical knowledge gap defined in chapter 1 has now been addressed, through the conceptualized framework. .

7.3.3 Methodological contribution

In reviewing previous business-IT alignment studies, it is evident that most follow the positivistic paradigm and often adopt a survey research strategy. Following this research methodology then means that the “how” part of the phenomenon is inadequately addressed. The present study followed the interpretive paradigm and a case study research strategy. Following this methodology allowed for the “how” and “when” parts to

be profoundly understood and described. Case study method allowed for a thoughtful and thorough understanding of the alignment phenomenon as it happens in real life and context. Case Study strategy is subjective and comprehensive in its approach. The “know-what” and the “know-how” of business-IT alignment has been provided. The present study has established the interpretivist philosophical position and the case study strategy as a suitable and an alternate means to understanding the alignment of business and IT, notably in South African development banks.

7.3.4 Contextual contribution

Business-IT alignment is sensitive to the context in which it happens. Therefore, South Africa and the development banks present unique context for business-IT alignment. The context of South Africa and development banks’ politics, business and banking, economic and social backgrounds are distinct from the rest of the world. The thesis acknowledges that what happens and how it happens in other countries like Europe, North America and the Middle East does not necessarily work in the same manner as in a developing country like South Africa. Development banks and South Africa are unique. Therefore where and how alignment of business and IT happens should be responsive to this uniqueness. The contextual knowledge gap defined in chapter 1 has now been addressed by studying a specific development bank that operates in South Africa rather than elsewhere.

7.4 LIMITATIONS OF THE PRESENT STUDY

Part of the study was conducted at a point when South Africa was under Covid-19 lockdown restrictions. The movement of people were restricted and face-to-face meetings were not encouraged. None of the interviews were conducted face-to-face with the participants in the same room. The interviews were conducted through a Microsoft Skype for Business communication platform, and this means that some gestures and behavioral cues that could have enriched the data was missed.

The study was conducted in an organisation that was undergoing major changes from the business strategy and IT strategy point of view. Therefore, the previous and the current business-IT alignment processes could not be fully contradicted, evaluated or established entirely and profoundly.

The other limitation is that this was a case study of a development bank. Even though there are several other development banks in South Africa, this was a single case study as opposed to a comparative or multiple case study. Although the study findings may not be generalised, they may be applicable to similar banks with the same South African context.

The present study was cross-sectional where data was collected at a specific time as opposed to a longitudinal study where data is collected over time, thus maybe yielding a further richer data, contradictions over time, and deeper understanding.

Ideally, the study would have benefited from interviewing executive managers, but because they were not available, the study had to rely on senior managers who report to them. This then means there are no views from the top executive management of the organisation. Notwithstanding this, these senior managers are part of decision making and strategy formulation, and therefore their opinions and views reflect that of the organisation.

The other limitation was that there was limited access to sensitive business and information technology data. Having full access may have enriched the study findings and the subsequent interpretation of findings.

Future research recommendations

Future studies may:

- Consider studying individual elements of the conceptualised framework and examine their impact and effect on the business-IT alignment in a development bank
- Analyse development bank's financial and business records (including IT investment and prioritization decision making processes) in depth and performance to get a true picture towards the impacts in business-IT alignment or misalignment, in a development banks.
- Use a different research paradigm, approach, strategy, and design to study the same phenomenon at the same South African development banks.

- Consider doing a longitudinal study on the same phenomenon at the same South African development banks.
- Employ multiple case or comparative studies on the same phenomenon at same South African development banks.

7.5 CONCLUSION

The research problem was that, South African development banks, despite investing in information technology, are not realising the desired return on investment. It was inferred that this problem is due to business-information technology misalignment within the development banks. The misalignment means then that information technology does not effectively enable business processes. However, the existing frameworks inadequately address the "what", "how", and "when" to achieving business-IT alignment, in the context of South African development banks. Since development banks and South Africa are unique, there was a need for a context sensitive framework that would help address the identified knowledge gaps and alignment issues. To address the research problem, this thesis has conceptualised a framework for business-IT alignment for South African development banks. The theoretical, practical, methodological, and contextual contributions of this thesis offers a new insight to business-IT alignment, sensitive to the context of South Africa and the South African development banks. In other words, the present study highlighted and addressed theoretical and practical issues and challenges, as identified earlier. Thus, the thesis is adding and contributing new knowledge to the business-IT alignment literature, in the context of South African development banks.

The peer-reviewed publications emanating from the study, shown below, are an additional indication of the relevance of this thesis and how the present study is contributing to the body of knowledge.

PEER-REVIEWED PUBLICATIONS FROM THE STUDY

Mongale, A., Kekwaletswe, R.M. & Mogoale, P.D. 2021. Business-IT Alignment through Triangulation of Models. *International Journal of Computer & Organization Trends* (IJCOT), Volume - 11(4):15-23.

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