A Digital Transformation Framework for South African Financial Service Providers

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DECLARATION

I, ***Michael Makgale Modiba***, 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.

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ABSTRACT

South African Financial Service Providers (FSPs) are characterised by turbulences and uncertainties that continuously affect business operations. Many writers summarize the current era of business as “adapt” or “die” era for many businesses, notably financial service providers. The way FSP operate has changed dramatically; there is now a new economy on the rise known as digital economy which requires Financial Service Providers to re-look at how they operate as a business. Financial Service Providers have to leverage on new technologies in order to remain relevant in the current times of banking.

The majority of South African Financial Service Providers are investing in digital transformation. However, digital transformation phenomenon is not well understood, especially in the context of South African Financial Service Providers. The extant literature is limited to digital strategies and digital business models, providing a limited overview of a detailed and complete digital transformation for FSP ecosystem. Moreover, such literature, to date, has not linked digital transformation to business processes within Financial Service Providers. Hence, this thesis argues that digital transformation challenges and issues observed in South African Financial Service Providers could be alleviated by a sound digital transformation framework that is sensitive to the local context.

The goal of this study was to conceptualize a framework that shows how South African Financial Service Providers could do digital transformation. The study used IT capability model, Resource dependency theory and the Technological, organizational and environmental theory as lenses to deeply understand what and how South African Financial Service Providers experience the digital transformation. The interpretive paradigm was followed in the study, with an inductive research approach and a case study research strategy employed for the study. Semi-structured interviews, observation and document reviews were data collection methods used. Hybrid thematic analysis and content analysis were the methods used to analyse the data collected.

Study findings suggest that digital transformation is either enabled or inhibited by existing IT capabilities and resource dependencies. The thesis argues and concludes that IT capabilities and resource dependencies ought to manifest cognizant of the Financial services provider’s technological, organizational and environmental contexts. The framework conceptualised unpacks the theoretical, practical, and contextual contributions of this thesis.

Keywords: Digital transformation, Business, Financial service provider, IT capability, Resource dependency, Technological Organization Environmental Framework, South Africa

PEER-REVIEWED PUBLICATIONS FROM THE THESIS

Michael Makgale Modiba, Ray M Kekwaletswe. (Volume. 5 Issue. 5, May - 2020), “Technological, Organizational and Environmental Framework for Digital Transformation in South African Financial Service Providers". *International Journal of Innovative Science and Research Technology (IJISRT).www.ijisrt.com. ISSN - 2456-2165, PP :- 180-196.*

Michael Makgale Modiba, Prof Ray M Kekwaletswe, Moroka Dominic Komati. (2020). IT Capability Framework for Digital Transformation in South African Financial Service Providers. *International Journal of Engineering Trends and Technology, 10(2), 24-39.*

Michael Makgale Modiba, Prof Ray M Kekwaletswe. (2020). Resource Dependency Framework for Digital Transformation in South African Financial Service Providers. *International Journal of Computer Trends and Technology, 68(4),107-125.*

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DEDICATION

This study is dedicated to my Parents, ***Mabule Patrick Modiba and Adelaide Elphina Modiba***, your support means the world to me!!!

My appreciation also goes to my siblings:

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Idibala

Makhudu

Salome

Rhitta

Lastly my nephew and niece : **Patrick and Marry.**

Ke mmina kgomo!!!

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ABBREVIATIONS

ACI	Application Centric Infrastructure	**ACM**	Association for Computing Machinery
AE	Account Executives	**AI**	Artificial Intelligence
APEC	Asia Pacific Economic Cooperation	**BBBEE**	Broad Based Black Economic Empowerment
CEO	Chief Executive Officer	**CFO**	Chief Financial Officer
CIO	Chief Information Officer	**COO**	Chief Operating Officer
CMDB	Central Management Database	**CSI**	Client Satisfaction Index
CTO	Chief Technology Officer	**DOI**	Diffusion of Innovations Theory
DTI	Department of Trade and Industry	**DTI**	Digital Transformation Initiative
DX	Digital Transformation	**ERM**	Enterprise Risk Management
FSP	Financial Service Provider	**GDP**	Gross Domestic Product
IBM	International Business Machines	**ICBC**	Industrial & Commercial Bank of China
ICT	Information and Communication Technologies	**IGSC**	Infrastructure Global Standard Council
IMF	International Monetary Fund	**IOT**	Internet of Things
ITSM	**I**nformation Technology Service Management	**IT**	Information Technology
ISMS	Information security management system	**IP**	Intellectual Property
KPI	Key Performance Indicators	**MIT**	Massachusetts Institute of Technology
NPS	Net Promoter Score	**OEM**	Original Equipment Manufacture
OLA	Operational Level Agreement	**PASA**	Payment Association of South Africa
PCI	Payment Card Industry	**PoC**	Proof of Concept
POPI	Protection of Personal Information Act	**RBV**	Resource Based View
RFI	Request for Information	**RFP**	Request for Proposal
RFQ	Request for Quote	**SAFe**	Scaled Agile Framework

SARB South African Reserve Bank

SI System Integrators

SLA Service Level Agreement

SVOS Storage Virtualization Operating System

TOE Technology Organization and Environmental Framework

4IR Fourth Industrial Revolution

1 CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.0 INTRODUCTION

This thesis is about the what and the how of digital transformation, notably in the context of South African financial service providers. In this era, digital transformation is considered imperative if Financial Service Providers are to be responsive to customer and stakeholder needs, through digital business. The thesis addresses a pertinent information systems and business administration key issues, especially since digital transformation is in its infancy stage. For example, there is still no outright theoretical and practical framework sensitive to South African Financial Service Provider contexts.

The thesis bridges the knowledge gaps against the limited research into digital transformation of Financial Service Provider in the context of South Africa. The study used IT capability model, Resource dependency theory and the Technological, organizational and environmental framework as lenses to deeply understand what and how South African Financial Service Providers experience the digital transformation. Subsequently, this thesis conceptualizes a digital transformation framework for Financial Service Provider in South Africa.

This introductory chapter is structured as follows: firstly, background to the field of study is discussed by reviewing literature in terms of key concepts making up the research topic and the area of study. This is then followed by the background to the research problem, inclusive of study location, context, challenges, issues and knowledge gaps. Subsequently the problem statement, research argument, primary and secondary research questions, goal, and objectives of the study are given. Lastly, the thesis contributions are briefly given.

1.1 BACKGROUND TO THE FIELD OF THE STUDY

This section gives the background to the field studied by reviewing literature and defining key concepts making up the research topic and the research area.

Ones and zeros are eating up new and existing businesses through digitisation. Various enterprises around the world, including financial service providers, are striving

for digital transformation - turning digitisation into activities, processes and transactions. Digitisation concept has been popular for both corporate, governments as well as academic press (Holland and Naude, 2004). Digitalisation has become a lifestyle which impacts on business and individuals; this has changed the way individuals' shop, bank, study, travel and other aspects of individual's life. The digital disruption is due to the creation of new emerging technologies like social platforms, mobile internet, machine learning, to name just a few (Fitzgerald, Kruschwitz et al., 2014).

1.1.1 WHAT IS DIGITAL TRANSFORMATION?

Digital transformation involves, but not limited to, conversion of business operations, products, processes. Organizational structures need to be developed by companies in order to manage their complex transformations (Matt, Hess et al., 2015). Additionally, individuals are impacted by digital transformation due to fast and radical change of digital technologies, which impacts on their lives as well as markets (Ebert and Duarte, 2016). The speed at which technologies are developed puts various enterprises as well as government agencies under pressure to go digital before it is too late, as they seek to survive and maintain their competitive advantage (Westerman, Calmejane et al., 2011).

Table 1. Definitions of the term "digital transformation"

Source	Definition
European Commission (2019)	"Digital transformation is characterized by a fusion of advanced technologies and the integration of physical and digital systems, the predominance of innovative business models and new processes, and the creation of smart products and services."
OECD (2018)	"Digital transformation refers to the economic and societal effects of digitization and digitalization. Digitization is the conversion of analogue data and processes into a machine-readable format. Digitalization is the use of digital technologies and data as well as their interconnection which results in new or changes to existing activities."
	[Digital transformation is a] "process through which companies converge multiple new digital technologies, enhanced with ubiquitous connectivity, with the intention of reaching superior performance and sustained competitive advantage, by

Ismail, Khater, and Zaki (2017)	transforming multiple business dimensions, including the ***business model***, the ***customer experience*** (comprising digitally enabled products and services) and ***operation***s (comprising processes and decision-making), and simultaneously impacting ***people*** (including skills talent and culture) and ***networks*** (including the entire value system).”
Schwertner (2017)	“the application of technology to build new business models, processes, software and systems that result in more profitable revenue, greater competitive advantage, and higher efficiency.”
Deloitte (2018)	“Digital transformation is the use of technology to radically improve the performance or reach of an organization. In a digitally transformed business, digital technologies enable improved processes, engaged talent, and new business models.”
Bloomberg (2018)	“Digital transformation requires the organization to deal better with change overall, essentially making change a core competency as the enterprise becomes customer-driven end-to-end. Such agility will facilitate ongoing digitalization initiatives but should not be confused with them.”

1.1.2. WHAT IS ICT AND WHAT IS IT?

ICT Stands for "Information and Communication Technologies." ICT relates to techniques which provide telecommunications access to data. This is comparable to IT but focuses mainly on communications techniques such as the Internet, wireless networks, mobile telephones and other media (Christensson 2015). IT stands for "information technology". It relates to any computer technology such as networking, equipment, software, the Internet, or individuals involved in this technology (Christensson 2015).

1.3 GLOBAL ENTERPRISES AFFECTED BY DIGITAL TRANSFORMATION

There is a plethora of evidence that businesses that are digitally transformed such as Amazon, Facebook and Google have grown to be power houses in the business world today. Companies that have been in the game are threatened by their traditional value proposition (Sebastian, Ross et al., 2017). Most fresh example is that some large companies that are not in step with the new digital trend, namely the film rentals companies are now struggling to survive because they have not put in place modern digital business strategies. (Hess, Matt et al., 2016). Carcary et al.,

(2016) argue that effective digital progression will require companies to make a shift towards redefining their strategies and to develop a wide array of skills critical to business success.

1.4 CONCEPTS MAKING UP THE THESIS TOPIC

1.4.1 What does digital technology and digital transformation mean?

The connotation of the term digital technology refers to converting analog data into digital data to fulfil client's requirements more effectively, efficiently and in a timely manner. Subsequently, transformation means to change into something. Pooley (2016) defines digital transformation as the process used for system-level restructuring of economies, institutions and society. In short, Lankshear and Knobel (2008) state that digital transformation "is the novel use of digital technology to address traditional issues". Example, today's banking can be done from the comfort of your home using a mobile device as opposed to going to queue at a traditional bank to complete paper work to acquire products such as loans.

Moreover, this can be interpreted as exploitation of traditional methods into more automated processes which foster efficiency to the business. Digital transformation requires more than one technology to take place, it combines different technologies namely information technology security, big data, 3D printing, cloud technologies, sensors and many more. This approach creates more opportunities and offers enterprises lead way to be radical, innovative with introduction of new services and operating strategies (Matzier, Bailom et al., 2016).

1.4.2 Financial Services Sector

South African Investor's Handbook (2014/15) outlines business industry sectors in the country. The following is a description of the financial services industry.

The South African banking industry is primarily governed by The Banks Act 94 of 1990, which seeks; "To provide for the regulation and supervision of the business of public companies taking deposits from the public; and to provide for matters connected therewith."

Banking systems play a pivotal role in modern economies around the world, and this is the same for South Africa (SA). The SA banking industry is made up of 17 registered banks, 15 local branches of foreign banks, 3 mutual banks, 2 cooperative banks and 36 representative offices. The industry controls R4 877 billion (ZAR) in

total assets. Of which, the five dominant banks accounts for the 90.7% (which has seen an increase from 2015 to 2016) of the total assets in the industry, international banks 5.8% and 3.5% is spread across the remaining players. In 2016 the South African Reserve Banks (SARB) issued three new entrants authorisation to trade, namely, Tyme Capital (Pty) Limited, Discovery Limited and Postbank Limited (SARB, 2016).

The financial services industry in South Africa boasts dozens of national and foreign organizations offering a complete variety of services including commercial, retail and merchant banking, mortgage loans, insurance and investment. South Africa's banking system, comprising a Reserve Bank, some big financially powerful banks or investing organizations, and a number of smaller banks, is well developed and efficiently controlled (SARB, 2016). Competition is in investment and commercial banking. The banking sector of the country compares favorably with that of the industrialized countries. Throughout the previous decade, South Africa’s financial service industry has been operated by numerous international banks and investment organizations.

Financial services are those economic services offered by the financial services are listed as follows:

- Credit unions
- Banks
- Credit-card firms
- Insurance companies
- Accounting companies
- Consumer lending companies
- Securities brokerages
- Investment funds
- Corporate managers
- Government funded enterprises

Additionally, the financial services sector includes a wide variety of financial management companies such as insurance companies, and real estate firms.

1.5 BACKGROUND TO THE RESEARCH PROBLEM

This section provides the background to the research problem by discussing the context and study location. The observed challenges and issues within the financial service providers are given; the knowledge gaps are then provided as the bases and motivation for the study.

Times have changed; financial service providers are at risk of survival since most of them do not play in the digital space due to various factors. Fatoki (2014) discusses variables contributing to either the shortcomings of Financial Service Providers in South Africa. The variables include absence of business experience, absence of functionality, inadequate training and Financial Service Providers self-development, terrible attitude towards customers as well as operations chain and high cost of production. South African Financial Service Providers invariably start their trade with the hope that they survive beyond a five-year collapse window while locally and internationally competitive. Fatoki (2018) outlines that the contribution of large businesses in South Africa is noticeable, although failure rate of these enterprises is very high. Around seventy-five percent of Financial Service Providers in South Africa have failed in the five years of being in business (*ibid*., 2018).

This thesis argues that most of the inhibiting factors can be minimized by considering opportunities which come with digital transformation. In every stage of growth, development is regarded as a key issue in all kinds of organizations and is of particular importance. Development, or lack of, often leads to particular challenges for Financial Service Providers throughout the world (IIIeset al., 2012). “Once you understand how the development and innovation processes can be influenced positively, the next step is to create a best practice model” (Eveleens 2010).

1.6 STUDY LOCATION AND CONTEXT

The context of the study is digital transformation within Financial Service Providers (FSPs). The study location for the study is Johannesburg, Gauteng province, in South Africa. Johannesburg is considered the heart of the South African economy. The Gauteng province host over 10 million residents and many aspiring entrepreneurs who are part of the larger financial service industry ecosystem.

1.7 CHALLENGES AND ISSUES

According to the banking Association South Africa Financial Service Providers in South Africa face several issues and challenges such as:

- Crime and corruption.
- Lack of technology and low production capacity (include access to electricity).
- A lack of management skills and in adequate skilled labour.
- Finance and obtaining credit.
- Access to markets and developing relationships with customers.
- Recognition by large companies and government bureaucracy.
- Knowledge and support for the role that they play in economic development.
- Regulatory compliance. You need to tie this and discuss why/how digital transformation may alleviate these

Based on the above challenges, digital transformation may alleviate some of these issues such as finance and obtaining credit, access to markets and developing relationships with customers, recognition by large companies and government bureaucracy, regulatory compliance, crime and corruption and many other challenges. Digital transformation is the incorporation of emerging technologies into all business fields, radically transforming how business works and delivering consumer value. Moreover, digital transformation is also a cultural transition that requires organizations to constantly question the status quo, experiment, and failure comfort.

1.8 KNOWLEDGE GAPS AND MOTIVATION FOR THIS STUDY

There is a digital transformation knowledge gap in terms of the South African context; that is, there is no known framework that may work as a theoretical and a practical guideline for Financial Service Providers. A lot of literature focuses on the failures of Financial Service Providers and challenges that Financial Service Providers encounter throughout their journey of being an entrepreneur. The thesis closes the gap that exists through bringing in new knowledge around how financial service providers can do digital transformation. The thesis brings new knowledge in the context of Financial Service Providers in South Africa.

1.8.1 Theoretical Gaps

As indicated in Table 3 -7 (related works section in the next chapter); digital transformation is the core of the reviewed literature, in different contexts. Previous studies have focused on various aspects of digital transformation using theoretical models such as IDC's digital transformation (DX) maturity model, Learning Continuum Model, Service Portfolio Model, Operating Model, IT Services Management Model and ITIL Framework, IT Services Management Model and ITIL Framework, amongst others. However, what these previous studies didn't address are things such as capabilities, resources and technology aspects required for digital transformation to take place. This thesis, therefore, argues that digital transformation may well be understood through the lenses of IT capability model, Resource dependency theory and Technology organizational and environmental framework.

1.8.2 Methodological Gaps

Previous studies, as reviewed and shown in table 3 – 7, mostly followed quantitative research approaches. This means that they were mostly testing theories to see if digital transformation is indeed doable for various organizations or if it is an acceptable practice in general rather than providing more in-depth knowledge on how to do digital transformation. The present study applied a qualitative case study approach as this helps dive deep into how digital transformation can happen for financial service providers in South Africa. instead of simply sending a list of closed-ended questions based on YES or NO answers. This qualitative research approach allows us to close the methodological gaps that exist by providing more in-depth descriptive knowledge of how financial service providers may do digital transformation, in the South African context.

1.8.3 Practical Gaps

The problem addressed in this thesis is that there are still considerable digital transformation challenges in South Africa. Previous literature reviewed in table 3-7 gives a clear indication that the practice mostly outlined is not necessarily practical to South African Financial Service Providers' context due to various reasons. The models applied are possibly the hindrance to Financial Service Providers in South Africa – the best practical approach to close the practical knowledge gaps would be to take stock of what South Africa Financial Service Providers have using IT capability model to understand current status quo of elements such as skills, literacy, resource dependence, technological and environmental contexts of the financial service providers. These are the practical factors which the reviewed literature does

not address. Not addressing these factors could have been due to the fact that these previous studies focused more on developed countries' context, where they are far ahead, technological skills, resources wise, etc. These practical challenges are argued to be the obstacles to effective digital transformation for financial services providers in South Africa, and therefore needed to be studied.

1.8.4 Contextual Gaps

This thesis acknowledges that South Africa is unique and globally categorized as a developing country. To this point, what works in other countries, notably i.e. developed countries, does not necessarily work as expected in South Africa. For example, a number of South African communities live in rural areas, with limited technological accessibility. Notwithstanding access to FSP services is enhanced via digital technology. There have been many developments in establishing digital transformation over past two decades in the "Western World". Within developing countries particularity South Africa, this has been even more of a challenge as these countries have had compounding issues in establishing digital transformation as a result of steady economic growth, technology, infrastructure, language, cultural diversity and political backdrops, these additional complexities have stifled digital transformation in broader and more complex manner. Therefore, these unique challenges that South African FSP's have require tailor made solutions due to context not one size fit all kind of approach.

1.9 MOTIVATION FOR A NEW FRAMEWORK

Systematic literature review has highlighted that, in this digital era, digital transformation is one rigorous way to sustain financial service providers. Individuals live in a more digital world and a plethora of customers are technology savvy thus embracing and expecting digital innovations from service providers. The existing digital business or digital transformation frameworks, discussed farther in the next chapter, include: Digitisation Piano; Digital Business Transformation Framework; Digital Orchestra Framework; Digital Innovation Strategy Framework; Digital Transformation Framework, Digital Reinvention Framework.

The preceding frameworks are deemed inadequate as they do not address contexts unique to financial service providers operating in South Africa. As discussed in this section, context plays a key role in achieving digital transformation. Therefore, it is imperative that a framework sensitive to South African context is given.

1.10. PROBLEM STATEMENT

The information systems business administration problem is that, although digital transformation is imperative if the South African Financial Service Providers are to have an edge and stay competitive, there is lack of the “know what” and the “know how” to digital transformation. Digital transformation is in its infancy stage, especially within South African Financial Service Providers. Therefore, there is lack of an appropriate theoretical and practical description of how digital transformation should happen, sensitive to and cognizant of the South African FSP context. As the systematic review of literature has shown, for the most part, the existing frameworks for digital transformation were conceptualized with the western world context in mind. This then means that they may not necessarily be fully applicable to the South African FSPs context, which minimizes the chances of transformation success. To this point, the contextualized theoretical and practical knowledge gaps are what this thesis sought to address. The contribution of this thesis in addressing this key issue is in the framework that is sensitive to the South African FSPs context.

1.11 RESEARCH ARGUMENT

The research argument driving this thesis is that, although there are several existing frameworks for digital business and transformation, none of them addresses the theoretical and practical context of a financial service provider doing business in South Africa, or any other developing country. This thesis argues that being sensitive to context is key to digital transformation being achieved. And that a profound understanding of the digital transformation phenomenon is appropriately achieved if studied through the lenses of Resource dependency theory, TOE framework and the IT capability model.

1.12 PURPOSE OF RESEARCH

The purpose of the research was to explore and describe digital transformation in the context of South African Financial Service Providers.

1.13 RESEARCH GOAL AND OBJECTIVES

1.13.1 Goal

The goal of the research was to conceptualize a digital transformation framework sensitive to the context of South African Financial Service Providers.

1.13.2 Study Objectives

a) To analyze business strategies and how financial service providers conduct their business.

b) To analyze financial service provider's IT capability and subsequent resource dependency.

c) To analyze how technology, organizational, and environmental contexts may influence digital transformation.

d) To determine how digital transformation should manifest for South Africa Financial Service Providers.

1.14 PRIMARY RESEARCH QUESTION

How can digital transformation manifest sensitive to the context of South African Financial Service Providers?

1.14.1 SECONDARY RESEARCH QUESTIONS

a) How do financial service providers in South African strategize and conduct their business?

b) What are the IT capabilities and resource dependencies for South African financial service providers? How do these influence digital transformation?

c) How do technology, organizational, environmental contexts influence digital transformation?

d) In what ways should a digital transformation manifest for South African financial service providers?

1.15 CONTRIBUTIONS OF THE THESIS

After describing the digital transformation research problem and the challenges and issues facing South African Financial Service Providers, the original contribution of this thesis is through the framework for FSPs in South Africa. This framework brings new insights to the already limited body of knowledge with regards to Financial Service Providers in South Africa. It does so in four ways namely: theoretically, practically and methodologically and contextual. These contributions are unpacked and discussed in chapter six of this thesis.

1.16 STUDY DELINEATION

This thesis sees digital transformation as a social activity system comprising of people, business processes and the enabling technologies. To this point, the study did not analyse digital transformation specific technologies nor the specific business processes. Rather, the study focused on unravelling digital transformation from the financial service providers' environmental, organizational and technological contexts.

1.17 SUMMARY OF CHAPTER 1

This chapter introduced the area of study and explained digital transformation and modern business concepts. Along with the problem statement, the context to the research problem research goal, research goals and questions. Included in this chapter were the knowledge gaps, as well as a description of limitations and a layout of the chapters to follow. In the next chapter, Chapter 2, the relevant literature review and theories are presented, with specific focus on digital transformation and digital business.

1.18 THESIS LAYOUT

The rest of the thesis is outlined as follows:

- **Chapter 2:** Survey of Scholarship and Theoretical Frameworks.
- **Chapter 3:** Research Methodology.
- **Chapter 4:** Data Analysis and Discussion of Findings.
- **Chapter 5:** Interpretation of Findings and the Framework.
- **Chapter 6:** Evaluation of the Research, Thesis Contribution and Conclusion.

2 CHAPTER TWO: SURVEY OF SCHOLARSHIP AND THEORETICAL FRAMEWORKS

2.0 INTRODUCTION

The previous chapter introduced the study and gave the background to the research problem and the context. This chapter surveys the scholarship by reviewing the existing literature that gives foundation to the study, literature appraisal is provided that unveils the scope of the research previously done regarding digital transformations, review of digital transformations frameworks implemented by a range of organizations, globally – to advance their objectives and strategies.

The variety of digital transformation approaches followed by researchers and organizations – as indicated in the literature – are also scrutinized. Some limitations were observed in the literature that supports arguments for necessitating the present research. Emphasis is mostly placed on aspects of digital transformation. IT Capability Model, Resource Dependency Theory and The Technological, Organizational and Environmental framework are discussed as lenses underpinning the study.

The systematic literature review and searches were conducted through scholarly databases and other e-documents. Databases included Emerald Database, Association for Computing Machinery (ACM) and Google Scholar among others. Additionally, textbooks, conference proceedings and documents by various governmental and non-governmental institutions, academics and researchers were also consulted. The literature exploration was limited to literature in English and restricted to publications between 1990 and 2020.

Key words used to search for literature included digital transformation, digital and digitization, transformation processes, digital transformation journey, Financial service providers, Sectors, Business Strategies, and IT processes. Throughout the literature search, it was noticed that a plethora of literature exists within the digital transformation arena– particularly in the medical field and banking sector. However, care was taken throughout the literature review phase that this over-representation did not deter or shift the focus from the present study’s objectives.

2.1 DIGITISATION, DIGITALISATION AND DIGITAL TRANSFORMATION

Before we delve into the subject of digital transformation, it is necessary to first clarify the difference between digitisation and digitalisation. These two terms are often wrongfully used interchangeably but their difference is crucial to the understanding of Industry 4.0 (McMorrow 2018) and of course digital transformation.

2.1.1 DIGITISATION

Osman (2018) defines digitisation as the process of taking analogue information and encoding it so that it can be stored and transmitted via a computer.

2.1.2 DIGITALISATION

According to Rachinger (2019), digitization is the process of converting analogue into digital data sets which forms a framework for digitalization. Gartner (2020) defines digitalization as, “the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business”. Also, Ryynanen and Hyyrylainen (2018) asserted that digitalisation is the steadily increasing utilisation of digital technologies in the everyday lives of the people. In light of this, digitisation refers to the conversion of items whilst digitalisation is related to how things are delivered and processed (Osman 2018).

2.1.3 DIGITAL TRANSFORMATION

Consequently, digital transformation is the use of new digital technologies such as big data analytics, machine learning, social and so on, in order to enable major business improvements like enhancing customer experience, streamlining operations or creating new business models (Fitzgerald, Kruschwitz et al., 2014). In light of this, digital transformation goes beyond digitalisation and results in value and revenues being created from digital assets (McDonald and Roswell- Jones 2012).

Reis, Amorim et al., (2018) in their study show that digital transformation definitions can be categorised into three separate groups; namely, technological (relates to new digital technologies such as social media, mobile, analytics or embedded devices), organisational (relates to changes of organisational processes or creation of new business models) and social (phenomenon that influences all aspects of human life). In this regard, Reis, Amorim et al., (2018) defined digital transformation as “the use

of new digital technologies that enables major business improvements and influences all aspects of customers' life". The success of the digital transformation within an organisation depends on the process and operations management changes (Dremel, Wulf et al., 2017); it is not a one-day-event but a journey that takes collaboration of different business units and resources.

The next section will look into a review and discussion of existing digital transformation frameworks that are relevant to this study.

2.2 REVIEW OF DIGITAL TRANSFORMATION FRAMEWORKS

This section reviews the various existing digital business and digital transformation frameworks.

2.2.1 Digitisation Piano Digital Business Transformation Framework

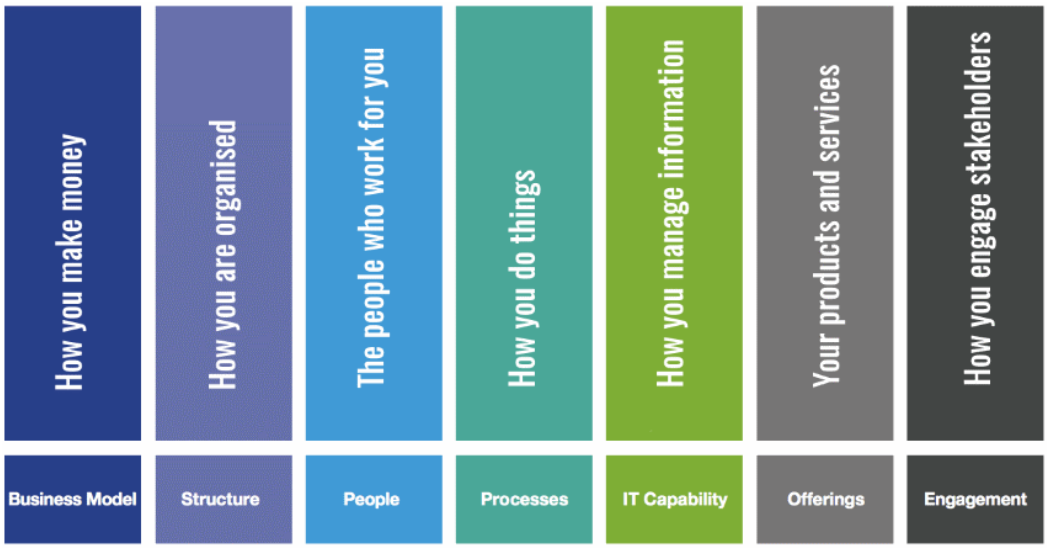

Figure 1: Digitisation Piano Digital Business Transformation Framework (Bradleyet al., 2015)

The Digital Business Transformation framework (Bradley et al., 2015) aims to explain how successful digital transformation eventually leads to organizational change which in turn leads to improved performance for a company through a link between digital technology and contemporary business models. The theoretical principle of this conceptual framework is that incorporating digital technologies in an attempt to effectively change will lead to significant organizational transformation covering the following areas within the structure of the organization:

- business model, IT capacity, offering (products and services supplied by the company)
- IT model commitment models (how the company interacts with external stakeholders).
- Internal structure (how the company operates).
- People (the human resources asset of the Company).
- Processes (what the Company does) ***(Bradleyet al., 2015)***

In the so-called "Digital Piano" framework each of the seven keys represents the above areas. The framework was used to evaluate Burberry's efforts to transform digital business over a ten-year period (2005 – 2015). Burberry was one of the first luxury brand retailers to pursue digital as a core strategy by meaningfully integrating social media use into its marketing and products. In 2009, Burberry was the first of the major fashion houses to launch its own social networking site, the art of the trench, which was a site which provided a public space for Burberry trench coat enthusiasts to post images of themselves wearing the garment. Theoretically, this framework adopts an integrated firm approach to digital business transformation by a company which adopts digital technologies. It also concentrates exclusively on the product without components that determine the impact and influence of external factors which are not always regulated by the business. The essence of organizational change via digitalisation is to achieve sustainable growth for the company and not only firm transformation or digital disruption to the principal segment of the enterprise market. Lastly, the ' Digital Orchestra ' system was created to replace the Digital Piano with an updated version.

2.2.2 Digital Orchestra Framework

Figure 2: Digital Orchestra Framework (GCDBM, 2015-2017)

As a substitute for the Digital Piano Concept, the digital orchestra concept was proposed. This is the new structure replacing the original Digital Piano proposal to assess the integration of a digital business within the group. The framework has been published in the report by IMD and Cisco Corporation's Global Centre for Digital Business Transformation (GCDBM). The foundation of the framework is that the leadership of a company must decide what kind of value it wants to create and evaluate the strategic options to achieve it. Through digital transformation, the structure includes ten areas which an organization should consider (Wade et al., 2017).

The areas include services, networks (go-to market); clients, partners, workers (engagement); IT systems (operations); and frameworks, rewards (organization). The framework covers the organizational structure and priorities in a significant way that provides a valuable tool for the management of the reinvention of the organization through digitalisation. The four classes of operating models covering the ten things work in a way that makes it mandatory that they unite together seamlessly on the digital business transformation path of any company that wants to follow the system as its guide.

2.2.3 Digital Innovation Strategy Framework

Table 2: Digital Innovation Strategy Framework Nylén, D. and J. J. B. H. Holmström (2015).

Dimension	Area	Scope	Element
Product	User experience	Digital products and services must offer high levels of usability, possess carefully designed aesthetic properties, and evoke engagement.	Usability Aesthetics Engagement
	Value proposition	Digital innovation involves an articulated value proposition; i.e., a customer segmentation including strategic pricing and positioning of the product portfolio, dynamic bundling of product units, and carefully negotiated commissions to channel owners.	Segmentation Bundling Commissions
Environment	Digital evolution scanning	In order to identify opportunities for innovation, firms need to scan their digital environment. This involves gathering information on new digital devices, channels, and associated user behaviors.	Devices* Channels** Behaviors
Organization	Skills	In order to reap the benefits of digital innovation, firms need to acquire new skills both internally and externally while establishing new digital roles. In doing so, firms should promote continuous learning of the unique properties of digital technologies in order to secure dynamic innovation teams.	Learning Roles Teams
	Improvisation	The malleability and low cost of digital technologies affords a higher degree of improvisation. As a consequence, managers need to ensure that they provide organizational members with an improvisational space where structure and flexibility is balanced in such a way that the constraints maximize creativity, dedicated time is given, and improvisational efforts are coordinated to deal with overlaps and waste.	Space Time Coordination

* Hardware such as memory, processors, chips, PCs, smartphones, tablets, etc.
** Web services and platforms such as social media and app stores

Nylen and Holmstrom (2015) proposed a Digital Innovation Strategy Framework for diagnosing and improving digital products and service innovation, However the framework has its main weakness in that it focuses solely on numerical products and services. Traditional companies that can digitalize certain aspects of their operations and customer participation are limited to the context of the platform by offering products and services that cannot be completely digitalized or delivered digitally.

Nonetheless, the framework offers a useful tool which helps organizations to diagnose digital products and services in their path to improved digital products and services. Three broad categories are included: ' Products ' – cover user experience and value proposition; ' Environment ' – covering scanning for digital evolution; and finally, ' Organisation, ' which covers skills and improvisation.

2.2.4 Digital Transformation Framework

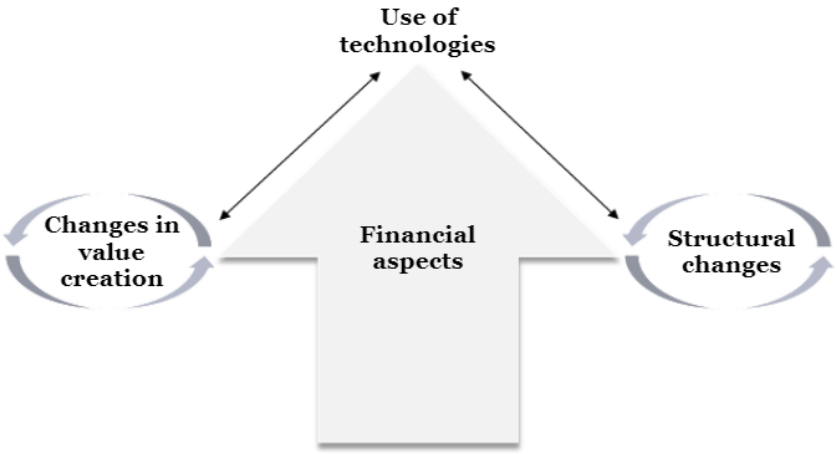

Figure 3: Digital Transformation Framework (Matt et al., (2015).

The Digital Transformation Framework is another framework that aims at understanding digital transformation processes in an organization, the framework is developed by Matt et al., (2015). The framework has been premised on the idea that the organization's digital transformation would serve as a central concept incorporating all of the organizational planning, priority and digitalisation implementation.

According to Matt et al., (2015), "digital transformation strategies should include four key areas: technology use, changes in value creation, structured modifications and financial considerations". At the very heart of this paradigm is the financial aspect, which is the primary driver and motivator, a novel method for providing a framework

for understanding the complexities of a business enterprise's digital transformation, in that the focus of a company is on sustainable growth and benefit over the long term.

The framework provides a fundamental academic basis for understanding digitization, through the description of four important building blocks for digital transformation. Matt, Hess et al., 2015 suggest future research to define and concretize common elements that can be connected to four dimensions that form the foundation of the framework. It should be noted that, while this structure has been formulated and developed within the universities, it must still be checked or validated as a robust framework that can be applied to digitisation understanding. Therefore, the conceptual stage of development remains.

2.2.5 Digital Reinvention Framework

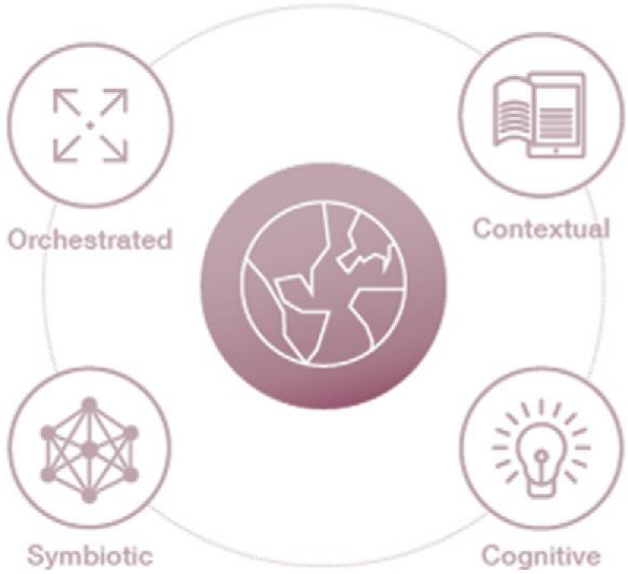

Figure 4: Digital Reinvention Framework (Berman, S. J., et al., 2016).

The concept suggested by Berman et al., (2016) is based on the argument that "organizations must pursue a new approach, build up new skills and develop new ways of working for a productive digital reinvention**".** Traditional companies must follow a fundamental bottom-up reinvention of strategy, service and technology for an effective digital reinvention (Berman et al., 2016). They should, therefore, keep overall focus on experience and not productivity.

The framework offers a way to achieve a digitally transformed organization, through an "experience-first" approach based on digital drivers (digital innovations such as

cloud technology, cognitive technology and research, internet, blockchains, Internet of Things, and more) (Berman et al., 2016). The framework is built on a foundation of three core organizational priorities: the creation of a new focus, the development of new skills and new working methods. The primary drawback of the theory is that there is purely theoretical evidence to prove the argument without any empirical evidence.

The next section reviews and discusses related works, notably with respect to the digital transformation frameworks that are relevant to the present study.

2.3 DIGITAL TRANSFORMATION AUTONOMY

The below sub-sections discuss various key topics relating to the study, the topics helped shape the research. The purpose of such topics is to gain an understanding of the existing research and debates relevant to digital transformation area of study, and to present knowledge.

2.3.1 Significance of digital transformation for organisation

Digital transformation allows firms to expand, gain competitive advantage and venture into new markets by adapting to changes in market conditions which are critical to the survival of businesses (Lucas Jr and Goh, 2009). According to Karimi and Walter (2005), firms with dynamic digital transformation capabilities are well-positioned to outperform those firms without. These digital transformations can be driven by a number of factors which include but are not limited to societal, consumerist and managerial changes in globally interconnected and symbiotic economy (Kenneyet al., 2015). Digital transformation is emphasised further with the ever-increasing popularity of Big Data and machine learning, as an important strategic tool that can be leveraged to automate and improve business processes (Huang et al., 2017). In this regard, many firms are pouring monies into activities that are related to digital transformation processes in a bid to stay relevant in this fast-growing digital era (Ross et al., 2016).

Organisations face a number of challenges in their efforts to implement digital transformation. These challenges emanate from the following factors: digital technology is continuously changing and developing (Nambisan, Lyytinen et al., 2017), digital transformation needs a wholistic and integrated approach that affects multiple business units (Kohli and Johnson 2011), scarcity of knowledge on digital

technology within the management and digital transformation needs a combination and synergy of different skills and capabilities (Holotiuk and Beimborn 2017).

2.3.2 Role of leadership on digital transformation

The digital business transformation is expected to bring changes to the organisation by transforming the customer experience, operational processes and business models (Westerman et al., 2014). This digitisation process of an organisation will nearly affect all aspects of the business as the digital transformation will create new roles which require new skills and competencies along with new forms of leadership (Kohnke, 2017). In light of this, leaders must be in a position to direct the business toward profitable activities and in order to do so the leaders must understand the implications of the digital transformation. The leadership role has evolved over the years and it is no longer only an individualistic characteristic but according to Larjovuori et al. (2018), “Leadership is viewed as a dyadic, shared, relational, strategic, global and complex social dynamic”. In one way or the other, modern leadership theories emphasise the importance of social interaction and relational leadership practices (Larjovuori et al., 2018).

2.3.3 The digital transformation journeys

The digital business transformation is not just a walk in the park but a journey that requires a strategic and wholistic approach. All relevant stakeholders also need to be involved, to make the transformation as smooth as possible. Wade (2015) asserted that there are seven categories that must be changed for the digital transformation journey to be successful. These seven categories are the business model, organisational structure, people, processes, IT skills, products & services offered and engagement model.

2.3.4 Impediment for going digital

Khanchel (2019) asserts that organisations going through the process of digital transformation face four challenges which are the extent of digitization, the constant evolution of the digital world, the new aspect and strong demand for collaboration and coordination. Firstly, the extent of digitization challenge emanates from the fact that the digital function covers the whole organisation and the complexity of managing and regulating involves all the department of the organisation. Secondly, the constant evolution of the digital world means the technologies are evolving at

much faster rates and therefore, the need for continuous learning and updating the technologies is essential. Thirdly, the new aspect refers to new functions within the organisation that are created as a result of innovative efforts and managers are usually not sure how to locate them and hence, a lot of collaboration is required to know what is needed and how to do it well. Lastly, strong demand for collaboration and coordination is essential for digital transformation which strains the traditional hierarchical coordination and collaboration practices (*Ibid*., 2019). This calls for new methods of communication and collaboration which are able to handle the digital function of the organisation which consists of many elements that must be connected and synchronised to avoid falling into digital anarchy.

2.3.5 Digital disruption

Kane (2019) states that, “Digital disruption refers to the way digital technologies are upending entire industries, changing the rules of the game. Digital transformation is about how companies are adapting to the new reality created by digital disruption.” This digital transformation does not only reinvent the organisation’s vision and strategy, organisational structure, processes, capabilities and cultures but also markets and entire industries (Gurbaxani and Dunkle, 2019).

Digital transformation of an organisation rides on the people; without people there is no digital transformation and therefore, for the digital transformation to be successful it depends on the people who are part of the transformation (Kane, 2019).

For digital transformation to be a success, the organisation must actively increase agility, encourage experiments and continual learning, recognise and reward collaboration, accept an appropriate level of risk of failure and increasingly organising around cross-functional teams (Kane, 2019).

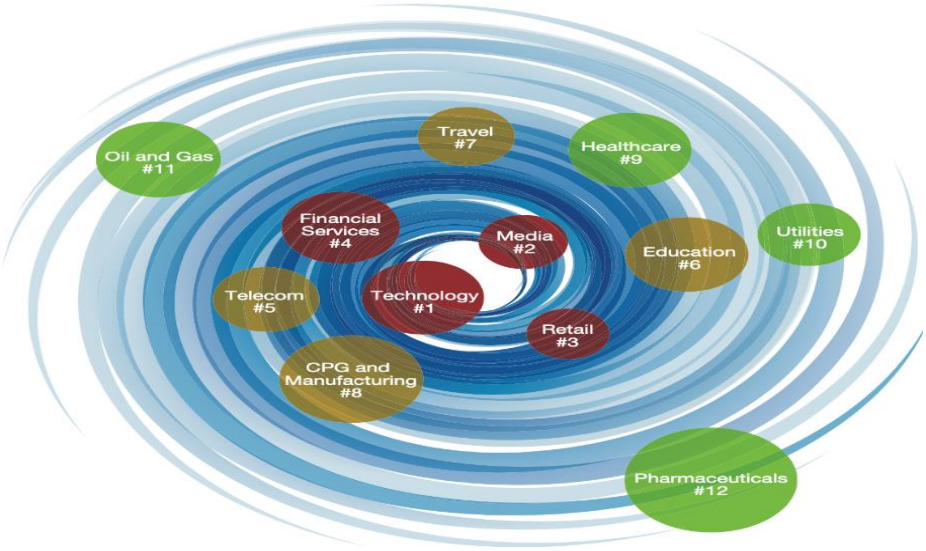

Figure 5: The impact of digital disruptions across industries (Wade, 2015)

Figure 5 shows the digital vortex of the impact of digital disruptions across industries; the industries at the centre are highly affected by digital disruptions whilst those on the outside are least affected.

2.3.6 Digitization: drivers, objects and impacts

The fourth industrial revolution is underway. Parker and Thomson (2016) suggest that 13 indicators that an industrial revolution could be around the corner were found in the World Economic Forum's Global Agenda Council on the Future of Technology and Society. They are as follows;

- Implantable and wearable technologies
- Our digital presence
- Vision as a new interface
- Ubiquitous computing
- A supercomputer in your pocket
- Storage for and for everything
- The internet of and for things
- Smart cities and smarter homes
- Big data for big insights
- Robots, decision-making and the world of work
- The rise of digital currencies
- Sharing economics
- 3D printing

Regardless of whether these megatrends represent a fourth (or even part of a third) industrial revolution as well as when this revolution takes place, one thing is clear: 'digitization or to digitize,' described as the process of moving from analog to digital (Gartner n.d.a), is not merely a phenomenon. It is already affecting businesses, the economy, and individuals significantly. In fact, 'the implications of a world that is increasingly digitized now reach every corner of our lives' (Friedrich et al. 2011).

2.3.7 Drivers of Digitization

The drivers of digital technology include digital breakthroughs such as behavioral shifts, behaviors and expectations; comparatively low entry barriers; and the availability of huge amounts of venture capital {Toner et al., 2015; Friedrich et al. 2011). These four driving forces work together and support each other powerfully.

Digitization is driven and enabled primarily by disruptive digital technology such as social media, mobile computing, analytics / big data, cloud computing (SMAC), Internet of Thing (IoT), cyber physical systems (CPS) and cyber security (SAP 2015; Kowalkiewicz et al. 2016). Digital system is the primary source of digital technology breakthroughs.

The broad scope of digital technologies is becoming increasingly common (Dreischmeier et al. 2015; Ernst & Young 2011). Moore's Law and Metcalf's Law are the underlying causes of this growing dissemination: computing hardware becomes ever more efficient, lightweight, and thus embedded and pervasive. At the same time, network effects lead to a higher value through the relation of systems, processes and users (Gimpel and Roglinger 2015). The exponential rather than linear progression of digital technologies offers a first answer to the question as to why the present digitization wave varies from those that have been witnessed before.

Today for all kinds of reasons, people use technology expect to have access to everything all the time from any computer anywhere in the world. When we turn to an embedded device— often a smartphone — Google has established 4' simple phases for action on anything we already have or want. These four types of micro-moments are full of intention, meaning and urgency;

- I want to know
- I want to go

- I want to do
- I want to buy (Adams et al. 2015).

People's desire to interact changes their personal lives, and their readiness to communicate anything changes long-standing privacy attitudes (Friedrich et al. 2011). The activities of consumers, such as finding information and advice through digital devices and social networks before making a purchase, mean that customers are' on constantly', and that businesses are able to interact with each other at any time.

Changes in behavior, attitudes and perceptions of customers often force companies to reconsider how to recruit, handle and retain their workers. Members of the younger generations –referred to as Generation Y or Generation C – tend not only to live their digital lives at work but also to pursue transparency, authenticity, personal engagement and, above all, contemporary business and political models (Ernst & Young 2011; Friedrich et al. 2011). What they want is "innovative change; they pursue to invent it by themselves where they cannot find it" (Ernst & Young 2011).

A third digitalizing drivers, the principle of "reinventing it by you," is the relatively low barrier to entry that enables anyone with an online connection and a great idea to become an enterpriser with even limited resources (Manyika et al. 2015; Hirt and Willmott 2014). As a consequence, creative entrants appear from unlikely locations and rapidly surpass well-established incumbents by leveraging digital channels for research, development, marketing, selling and delivery and enhancing the quality, pace and price at which they offer value.

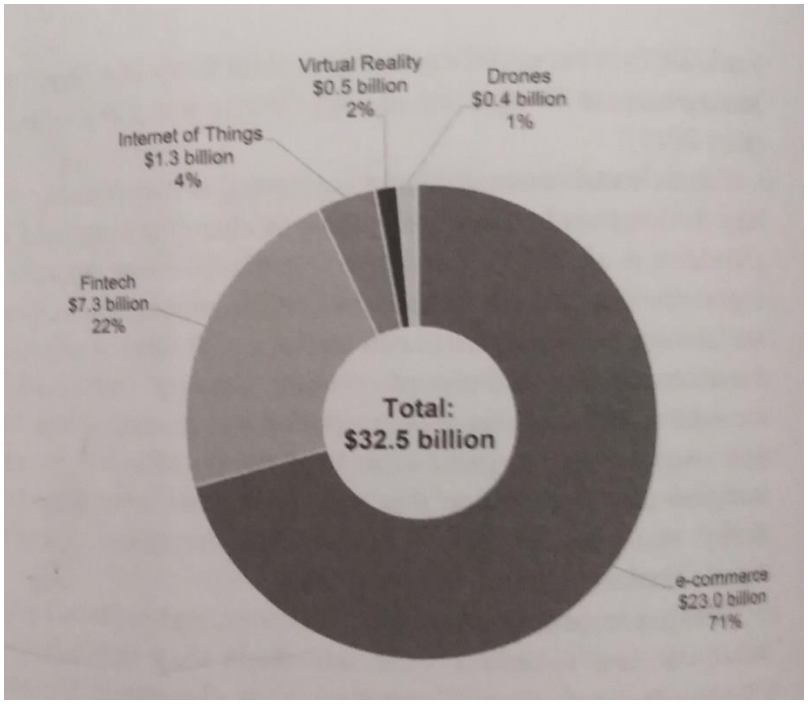

Figure 6: Venture capital in the digital economy 2015 (Raconteur n.d.)

2.3.8 Objects of Digitization

Processes and work are the subjects of digitization; products and services and business models (Osterwalder and Pigneur 2010). In this context, digitizing also means linking people and stuff like properties and material.

For decades, digitization was the focus of processes and research. In the past, data management and processing in the IT department was primarily a subject of digitization but now it affects all departments. It has changed from administrative and boost activities to key business processes (Gimpel and Roglinger 2015). Today's enterprises go far beyond just automating existing processes. They also redesign entire business processes in order to meet the heightened customer expectations, questioning everything relevant to an existing process and replacing it using cutting edge digital technology (Markovitch and Willmott 2014).

Digitization is not only conventional, interactive or digital; the digitalization of products and services is continuous from a primarily physical perspective (Berman and Bell 2011). Late in the 1990s, in a few sectors such as music, entertainment and telecommunications, the digitization engines moved all industries towards the digital end of the physical–digital continuum. Due to the advent of smaller, smarter and cheaper sensors (i.e., transmitters and radio frequency identification (RFID) tags), almost every physical product, work piece, asset, package, pallet, container,

transport vehicle, clothing, accessory and even human body can now be fitted with electronic tags, enabling a company to track, for example, where a physical object is as it moves.

In addition to so-called smart products, the convergence of physical products with digital technology enables businesses to develop smart services that are focused on or enabled by digital technologies, including new solutions that expand existing service offerings, digital services that enhance physical products, and hybrid product service packages (Gimpel and Roglinger 2015).

SAP's Asset Intelligence Network (AIN) a cloud-based centralized repository allowing OEM operators and service providers to utilize information to be uploaded, captured, monitored and traced, promotes shared asset management and enables members to benefit from IoT. Operators have access to current repair techniques, manuals and more from producers who upload their products ' digital twins. According to International Digital Center (IDC), 75% of Globally 2000 will have developed robust information-based economic models and digital twins in its products / services, supply networks, distribution channels and operations by 2018 (Anderson et al. 2015).

Business models are the third topic of digitization. The examples given above demonstrate that the distinctions between product and service digitization and business model digitization are blurred. This is due to the fact that a package of goods and services that generate value for a specific consumer segment define the value proposition as a cornerstone of a business model (Osterwalder and Pigneur 2010).

The platform market, where "other people outside of the company generate value-many of whom allow the company to develop fully new digital models" (Daugherty et al. 2015), is another traditional hotbed for new digital business models. For example, by subscribing to application programming interfaces (APIs), the secret sauce of the digital economy, companies can quickly add new business functionality to their current application.

In all kinds of companies, platform ecosystems are of strategic importance: asset heavy enterprises such as GE and Philips, asset light enterprises such as Google or Uber, and mixed such as Apple and Amazon with active platform ecosystems and asset-driven enterprises (Daugherty et al. 2015).

These brief explanations of digitization objects demonstrate that digital technologies have significantly expanded the possibilities for businesses across all markets and industries to re-imagine their key levers, from processes and function to whole business models through products and services.

The digitization now changes 'the how' as well as 'the what', and there is no limit: it will digitize all that could be digitized (Negroponte 1995), and it will connect all that can be connected (Morgan 2014). The continued growth in digitization's width and depth is the second reason as to why the current digital wave varies from the previous one.

2.3.9 Impacts of Digitization

The effect of digitization involves large and varied economic and social effects, unprecedented opportunities as well as posing significant business challenges.

Digitization has significant impacts on the entire economy and society in a wide variety of ways including growth, business patterns, industry landscapes, the value chains structure, investments, productivity, consumption, jobs, skills, job conditions and competition rules and the conduct of business (Hirt and Willmott 2014; Schwab 2016a).

The digital economy's growth is projected to account for 25% of the global economy by 2020, from 15% in 2005 (Daugherty et al. 2016), according to Accenture's digital economic value index. The lowering of entry barriers by digitization, in addition to allowing rivals to emerge from unexpected places and paving the way for rapidly evolving new business models, also contributes to the disaggregation of value chains, long-established boundaries between tumbling sectors and the creation of entirely new industries (Hirt and Willmott 2014).

Even though various geographies, industries, and companies undergo digitization at different speeds, digitization has an impact on geography, industry and businesses (Opitz et al. 2015; Berman and Bell 2011; Friedrich et al. 2011; Daugherty et al. 2016). Each business is undergoing a digital transformation, thus causing some crisis, some as part of its core strategy and some as part of a more regulated transition phase (Bonnet and Nandan 2011).

Today's digital powers give all companies tremendous opportunities and threats, or both. As a result, digital capabilities decide progressively whether a company

generates or loses value (Hirt and Willmott 2014). Few businesses need to be sold on the digitization benefits (Desmet et al. 2015), as each business understands its transformative power (Daugherty et al. 2016). Taking advantage of this and other opportunities will benefit the key performance factors such as expense, revenue, profit, capital gain, customer and employee satisfaction, and market assessment.

At the other hand, digitization presents big challenges for companies. Many of these issues can be subordinated to the overall question of how to effectively adapt to digitization or how to prevent disruption in terms of the largest threat to digitization.

All variables can be impacted by digitization and the entire business climate can be modified. Companies must therefore address all the ramifications of a digital transition, re-imagine all facets of their business and build cohesive end-to-end solutions and adapt accordingly (Ernst & Young 2011). Organizations who neglect digitization would definitely lose their value and even fail. In particular, this risk concerns well-established companies that are not specifically organized around or operating in the digital economy, but whose future is heavily dependent on positive digital innovation and transformation (Gimpel and Roglinger 2015).

The omnipresent threat of cyber-attacks is another obstacle for companies in the digital economy (Raconteur 2016b). In this way, digitization is a self-perpetuating cycle and the impacts of digitization on the economy as a whole, enormous opportunities, and significant challenges for companies are tremendous.

The answers to the question why the current digitization wave is different from previous changes relate to its historical scale, speed, and reach (Schwab 2016a). Inevitability, irreversibility, implementation complexity, and ubiquity characterize the 4th Industrial revolution.

2.3.10 Digitalization: digital innovation and transformation

"The use of digital technologies to change a market trend and to give income and new opportunities for generating value can be described as a process of transition towards a digital business" (Gartner n.d.b). A digital business can be described as "new business designs through the merging of digital and physical worlds" (Lopez 2014) or as a company where value generation is focused on digital technology.

In this sense, digitalization is also referred to as 'digital transformation,' the language we compete with falls short of the mark because it only indirectly represents the main

part of innovation; innovation and transformation are both important to create value in the digital economy.

Given the characteristics and impacts of digitization, digitalization is no longer a choice but a necessity (Dreischmeier et al. 2015); digitalize or drown is the mantra for all companies across all sectors and regions.

2.3.11 Elements of digital transformation

The urgent need for the digital transformation of businesses and organisations in all industries is apparent but that does not necessarily mean that the transformation journey will be easy, nor will the path be obvious. However, by examining the various elements of the digital transformation journey we may be able to shade light and perhaps this will help to make the transformation journey less hard than it should. It is important to note that the digital transformation of an organisation takes place through various dimensions that support and influence the digital transformation process.

Tekic and Koroteev (2019) used the cake receipt to describe the relationship between the digital transformation, the digital technology and the business model in an effort to explain some of the elements of digital transformation. They stated that the digital transformation is the cake whilst the digital technology and business model are the tastiest ingredient and master recipe respectively. This implies that the digital transformation journey cannot be successful with the digital technology alone but also needs an appropriate business model to drive the digital transformation process. These are not the only elements of the digital transformation, other authors also cited the following elements amongst many: use of technologies, changes in value creation, structural changes, financial aspects, process, people, strategy, culture, open conversation and co-creating digital transformation (Westerman et al., 2014; Kane et al., 2017; Hess et al., 2016).

The identified elements of digital transformation analysed in the present study are briefly discussed next:

2.3.11.1 Organizational structure

Organisational structure is a system that formally allocates job tasks indicating how they are divided, grouped and coordinated within the organisation (Robbins et al., 2017). However, there are two types of organisational structures; namely,

mechanistic and organic organisational structure (Shields et al., 2016). The mechanistic organisational structure is formalised with high specialisation and administrative intensity whilst the organic organisational structure less formalised in nature. It is important to note that firms should endeavour to keep their organisational structure flexible enough to allow adaptation to changes that may be warranted by the constantly evolving market conditions. This is because a fixed organisational structure can take time to transform and adapt to the changes which may be needed to sustain business operations (Nene and Pillay, 2019). Khaleghi et al. (2013) asserts that the successfulness of the organisation is also dependent on the organisational structure.

According to Shields et al. (2016), the organisational structure can be divided into four major elements which are job design, internal differentiation, decision making and communication systems and coordination and control system. These will be briefly discussed in the following subsections.

2.3.11.2 Digital technologies

The fourth industrial revolution, also known as industry 4.0, has brought technologies such as artificial intelligence (AI), machine learning, big data analytics, cloud computing, the internet of things (IoT) and social media; these are believed to be the enablers of the digital business (Tekic and Koroteev, 2019). According to Iansiti and Lakhani (2014), the purpose of the digitial technologies is not to do away with the traditonal or existing components with the organisation but it rather enhances and improves their function by the digitalising them.

2.3.11.3 People

People are the vehicles that drive organisational goals and therefore, it is paramount to have leadership and employees that are effective and efficient for optimised organisational outputs (Nene and Pillay, 2019). Kane (2019) states that, “The fact is that it is your people who will fuel or thwart your digital transformation”. The value that people bring to an organisation is mostly intangible and many organisations due to the lack of metrics such as seen in financial matters that measure the value of people organisation tend to focus less on them (Mayo, 2016).

Moreover, the lack of understanding of the value of people as assets that can be invested into for greater productivity and profitability is a stumbling block for

organisational growth. Mayo (2012) is of the opinion that people should be seen as “value creating assets with an inherent value in themselves that can be enhanced with time. The breadth and depth of that value influences the outcomes we practice”; this is human capital management.

According to Manuti and De Palma (2014) “human capital is not just a brick in the construction of a successful organization; rather, it is the organization’s foundation and to be solid it should be tied to the other parts of the organizational building”. It is important to note that the benefits of human capital management can be manifested as customer satisfaction, innovation and service delivery which are invisible to the less keen eye due to their intangible nature. Furthermore, realising and understanding the value and competences of people as assets is imperative in achieving successful human capital management (Armstrong and Taylor, 2014).

The value of the people can be quantified as both the present and future value (Mayo, 2012); this is connected to the goals and objectives of the organisation. According to Gabčanová (2011), employees are the most important asset in an organisation and their satisfaction and engagement can lead to improved quality of products/services, competitiveness in the market and consequently, the sustainability and profitability of the business. Moreover, investing in people as assets for achieving the organisational strategic goals can be attained through talent acquisition, talent retention and talent development (Mayo, 2016).

2.3.11.4 Talent retention

According to Allen et al. (2010) there is a general misconception that talent leaves an organisation due to low compensation and incentives that do not encourage them to stay. However, in actuality the real reason why most employees leave a firm is due to the lack of integration with other work colleagues and also lack of perception of training and development in the future. Wubbe (2015) also adds that cross-training and changing roles of employees should favour talent retention. In light of this, Bartram (2012) encourages that organisations should focus on talent development and training before exploring other means of promoting talent retention. Additionally, the management should make talent retention a top priority of the organisation by creating a transparent workplace culture with open communication and frequent meetings with employees so as to maintain their connection and also be able to

identify things that are affecting the working conditions of their employees (Wubbe, 2015).

In order to perform successful business operations an organisation must have the right set of skills at strategic job roles; this is because by having top talent at those strategic job roles an organisation is able to leverage the top talent to its fullest potential and therefore, be able to maximise the benefits of the operations (Al Ariss et al., 2014).

2.3.11.5 Strategy

There is no general consensus on a globally acceptable definition of strategy due to its multidisciplinary nature (Heath, 2013). In this regard, many authors from different research disciplines define strategy differently depending on their situation and industry context. Nevertheless, for the purpose of this study the researcher shall follow this definition: Chandler (1990) states that, “Strategy can be defined as the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for the carrying out of these goals”.

Dodgson et al. (2008) assert that strategy originated from the military and was viewed as the utilisation of resources in a manner that thumbs the enemy. The walks of Sun Tzu a Chinese general who wrote The Art of War, written about 2500 years ago (Sun and Tucker-Jones, 2019) is evidence of such amongst many. However, Richard D. Irwin introduced strategy in the business context in 1971 and Michael E. Porter in 1980 further developed the theory on strategy in his book Competitive Strategies (Collis and Montgomery, 1995). Porter emphasised on the external perspective of strategy by focusing on market structure and the strategic positioning of a firm within the market but later on in the mid-1990s the resource based view of strategy emerged which emphasised the internal perspective which focused on internal skills and capability of the firm (Collis and Montgomery, 1995). Currently, the modern-day view of strategy takes a unified approach that seeks to combine the internal and external perspective strategy i.e. a combination of the traditional approach with the resource-based view.

Furthermore, there is an emerging modern type of strategy called open strategy which promises faster and more efficient decision making process, increased customer, employee and partner engagement in the strategy formulation and better

access to dispersed and creative strategic ideas (Tavakoli et al., 2017). Traditional strategy was mainly based on secrecy and surreptitious manoeuvres against the competition, but open strategy is unique in its transparency, inclusiveness and its central use of social information technology that allow many people to participate. However, since this open strategy theory is still relatively new; it is not yet clear whether ideation, decision making, strategy communication or all of them are “open” (Tavakoli et al., 2017).

2.3.11.6 Organisational culture

Organisational culture is the way in which things are done within the organisation and is shaped and governed by the system assumptions, values and beliefs that in one way or the other influences how the people in the organisation dress, act and perform their daily actives.

2.3.11.7 Risk

Going digital and the digital transformation process must consider the risks associated with the change. Security risks associated with the safety and security of business data can influence whether the digital transformation process will be a success. Moreover, issues associated with the balancing of benefits of the digital transformation against the risk associated with the transformation are always under constant evaluation. According to Bedell-Pearce, (2018), hacking, theft, fire and flood are some of the known potential threats to the safety and integrity of the business data and adequately protecting the data can be cost prohibitive to low income generating organisations.

2.3.11.8 Digital learning

Digital learning is learning through the use of several types of technological devices in an unplanned and implicit process with unpredictable results (Sousa and Rocha, 2019).

2.3.11.9 Business model

Tekic and Koroteev (2019) state that, “A business model is a systematic and holistic description of three key activities: how an organisation creates, delivers and captures value”. It also defines how the firm should be organised and how it should leverage its business partners for creating, marketing and delivering value for the

sustainability of business operations (Osterwalder, 2005). Furthermore, when a business is in its infancy stage it normally starts with a business model that constructed from hypotheses and consequently it will not be optimised. However, as the business gain moments and experiences the market dynamics it is gradually adjusted to meet business and customer needs until an optimised version is attained (Blank, 2020). Dodgson et al. (2013) are of the opinion that the creating a new business model or reconfiguring an existing one are equally daunting endeavour each with unique challenges.

2.3.12 Related Works

The below table summarizes the related works reviewed, within the digital transformations space.

Table 3: Related work to the study

Author(s)	Topic(s)	Context(s)	Theorie(s) and Methodology(s)	Implication(s) and finding(s)
Reis, Amorim et al., (2018)	"Digital Transformation: A Literature Review and Guidelines for Future Research."	The authors provide meaningful input and insight into the latest technology of digital transformation. The study applied a widespread check of 206 academic papers.	A qualitative analysis of content of the articles selected and quantitative characterization of a selected publication distribution. The DIC maturity model (DX) for IDC is the underlying theory of this study.	The results show that 45% of journals in 2016 and 55% of conference papers were high-value conference proceedings. The US (21 %), Germany (19 percent) & China (5 per cent) have also helped in publications.

Table 4: Related work to the study

Author(s)	Topic(s)	Context(s)	Theorie(s) and Methodology(s)	Implication(s) and finding(s)
Berman (2012)	"Digital Transformation: Opportunities to Create New Business Models."	The research paper maintains that businesses always seek opportunities, particularly in the digital age in which we live. The article claims that companies focus on additional activities, namely: redefining and transforming customer value propositions through digital technology.	The research paper utilizes a business case study as a research strategy to understand what these companies need to do to produce the proposals of new customers to transform operating models. In the era of digitalization, every company needs a new capability portfolio, because this makes it possible for businesses to flexibly meet rapidly changing requirements of customers. The underlying theory for this study is the operating model.	The findings emphasize that the commitment of clients to every value is critical, and also the writer explains the results by adding that this distinguishes a client-centred operating style as opposed to styles that are direct to clients. Finally, the results argue that client interaction and involvement lead frequently to open cooperation that accelerates innovation through the use of online communities.

Table 5: Related work to the study

Author(s)	Topic(s)	Context(s)	Theorie(s) and Methodology(s)	Implication(s) and finding(s)
Sebastian, Ross et al., (2017)	"How Big Old Companies Navigate Digital Transformation."	Technology represents gaps which can be filled and turned into benefits for companies according to the scholars, if not all of which were built up during the pre-digital economy. The study from 25 companies undertaking digital transformation trips was outlined in the article.	This qualitative research was used to study 25 companies, one company from the IT agency and at least one company from a company role. In addition, video and/or telephone interviews were semi-structured.IT Services Management Model and ITIL Framework are under pinning theory for this study.	Study found that one of the two digital strategies is indeed a manager who tends to recognize and recognize benefits of emerging technology: "customer engagement and digitized solutions". Sample of this study indicated that 25, 8 out of 25 companies pursued a strategy for client involvement and 13 pursued a digital solution strategy. As a result, the four other companies experimented with digital technology applications.

Table 6: Related work to the study

Author(s)	Topic(s)	Context(s)	Theorie(s) and Methodology(s)	Implication(s) and finding(s)
Henriette, Feki et al., (2015)	"Bimodal IT: Business-IT Alignment In The Age Of Digital Transformation."	Organizations face the challenge of digitalization or digital transformation. Many companies are panicking and responding to this new trend and feel that a new digital IT unit needs to be set up. Some companies tend, however, rather than establishing new digital IT units, to transfer responsibility for IT systems to business units.	This study was a qualitative one undertaken by authors in two phases: unstructured research of the literature and structured literature in twelve quality information systems. The research was really a scholarly review of structured and non-structured research. Multifaceted IT operating model is the under-pinning theory for this study.	Research findings describe: 106 direct and indirect references; inextricably linked to the analyst company Gartner is the concept of "bimodal IT." Consulting firms ' publications such as "McKinsey (18 references) and Boston Consulting Group (4 references) follow with far fewer references."

Table 7: Related work to the study

Author(s)	Topic(s)	Context(s)	Theorie(s) and Methodology(s)	Implication(s) and finding(s)
Schuchmann and Seufert (2015)	"Corporate Learning in Times of Digital Transformation: A Conceptual Framework and Service Portfolio for the Learning Function in Banking Organizations."	The study carried out focused on organizational as an analytical unit where banks are samples for this research. The study looked into digital trends, challenges within banking industry; research shows that banks require a new technology and business models to engage customers effectively in the digital rather than traditional way.	To approach the investigation question: "How can the learning function promote the improvement of learning and innovation in a digital world within the banking organization?" A qualitative method of case study has been chosen. The principal reason for this is that it allows the current status quo in banking to be examined thoroughly. Learning continuum model & service portfolio model are underlying theory of this study.	The results indicated: the highest effect was evaluated simultaneously with lowest feasibility for personnel development as a management task. Secondly, in terms of feasibility, in the positive, respectively feasible area, the areas of action were assessed. Scholars also said the results show that the second most difficult area in terms of implementation is the development of learning / innovation-based management systems.

2.3.12.1 Discussing the preceding related works table 3 - 7 and identifying knowledge gaps

There are many scientific studies done on digital transformation. Table 3 - 7 focused on underlining those studies which are rather related to the present study. From the table, there is evidence of inadequacy of studies addressing digital transformation in the context of South Africa or Financial service providers in South Africa. The inadequacy of literature was identified as knowledge gaps discussed in the introductory chapter under the subheadings:

- Theoretical gap
- Methodological gap
- Practical gap
- Context gap

The next section looks into the technology adoption and use theories that are relevant to achieving the objectives of the present study.

2.4 THEORETICAL FRAMEWORKS UNDERPINNING THE PRESENT STUDY

This section discusses three theoretical frameworks that underpinned the present study. Theoretical frameworks shape research as they provide guidance and lens to a study. Borgatti (1999), outlines that basic elements of a theoretical framework are thus fundamental to any deductive or inductive study. After the discussion of the theoretical frameworks, a conceptual research framework informed by the theories is given to help address the research problem stated.

2.4.1 IT Capability Model

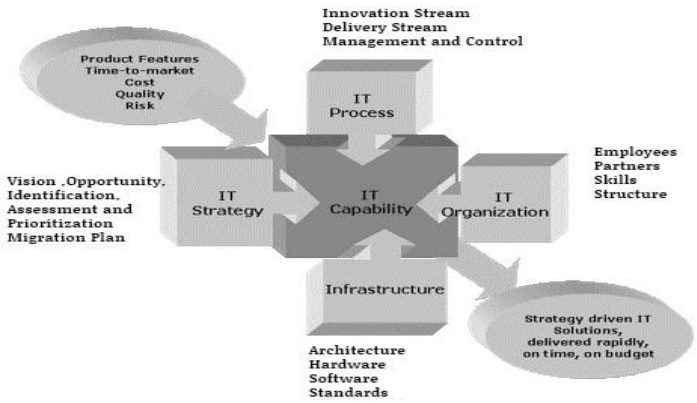

Figure 7: Capabilities Framework for Information Technology (Karimi, Somers et al., 2007)

The capabilities framework for information technology (IT) makes reference to companies' potential to recognise IT needs (Karimiet al., 2007). The framework also provides information technology for improved business processes to offer additional IT-based systems with economically efficient lengthy-term operations and maintenance.

The framework emphasises the need for enterprises to leverage on different information technology resources with the aim of achieving intangible benefits (Henderson et al., 2013). Kaplan and Norton (2000) stresses that this framework basically projects enterprises ability by its information technology assets but also how market valuation could be created for the enterprise. The framework for the capacity of information technology consists of the following variables:

- "IT strategy".
- "Processes and metrics of information technology".
- "IT": Competences, Structure and Knowledge Organisation.
- Assets: hardware, software, apps, networking and databases as well as tools.

2.4.2 Resource Dependency Theory

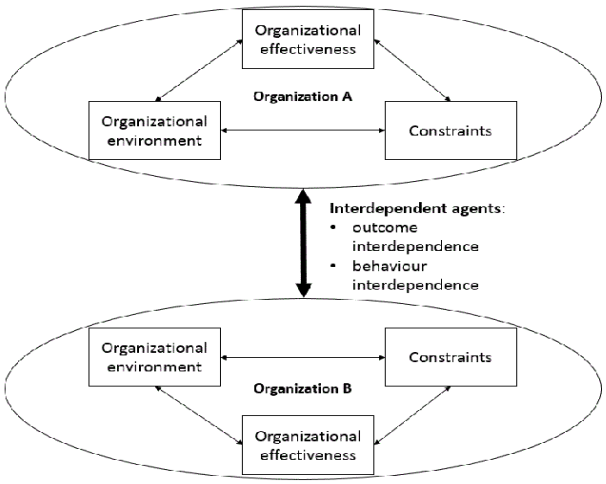

Figure 8: Resource Dependency Theory (Pfeffer and Salancik, 1987)

Pfeffer and Salancik (2003) state that the success of an undertaking based on the theory of resource dependency is defined as an organisation looking to maximize its own strength, and the theory characterizes links between institutions, dependent on the trade of assets as just a set of power dynamics. In addition, (Pfeffer and Salancik, 2003) imply that companies often change their relationship dependence by simply maximizing their own dependence, which also tends to create an advantage;

that is, creating a sense that they can depend on themselves and not wholly on other organizations.

The resource dependence theory argues that the goal of an organisation is to minimize its dependence on other organisations for the supply of scarce resources in its environment. Cuervo- Cazurra, Mudambi et al., (2019) states that the, “Resource dependency theory is concerned with actions firms can take to manage contextual dependencies and suggests that units are differentially valuable in dealing with challenges emanating from its external environment”. This theory focuses on how important the resource is to the organisation and to what extent do other organisations control the resource. It was founded by Pfeffer and Salancik (1978) and it has evolved throughout the years. According to Cuervoet al., (2019), the Resource Dependency Theory addresses the notion of power in organisational relationships; this power relationships determine who controls the scarce resources and to what extent.

Furthermore, an organisation can increase its power by minimising its dependence on other organisations and by doing so an organisation can reduce the potential uncertainty that can be brought about by its interdependency with the external environments (Fraczkiewicz-Wronka and Szymaniec, 2012). In this regard, the extent of the control depends on whether the focal organisation is aware of the demands, the focal organisation obtains some resources from the social acting making the demands. The resource is the critical part of the focal organisation’s operation, the social actor controls the allocation, access or use of the resource in which there are no alternative of the resource and the focal organisation does not control the allocation, access or use of other resources critical to the social actor’s operation and survival (Miner 2015). In order for an organisation to survive, it must operate as part of the coalitions that contribute resources and support; these coalitions are managed by the management of the organisations so as to ensure continued support and sustainability of the organisation (*ibid*., 2015).

Basically, having the right resources gives enterprises power because through power they can create an advantage for them and ensure that they can use their power to partner with other enterprises - thus creating dependency for other enterprises. The theory was formulated to focus on dependency between organizations. However ,

the dependencies could be created within enterprise's own units or departments - example, the business units depending on the IT unit to move their business forward.

2.4.3 Technology Organizational and Environmental Framework (TOE)

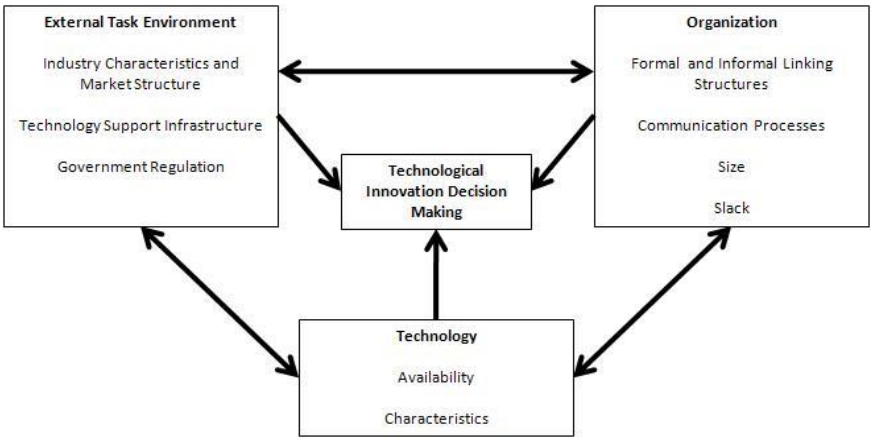

Figure 9: Technology Organizational and Environmental Framework (Depietro, Wiarda et al., 1990)

TOE is the widely applied framework within information systems qualitative research area. Depietro, Wizard et al., (1990) state that three pillars, the "technological, organizational and environmental context, guide the procedure adopted by a company and applying technological innovations". The three pillars affect how a company sees the necessity of new technologies, searches and adopts them. In addition, the authors indicate that technology is typically composed of internally and externally relevant technologies.

Arpaci et al., (2012) asserts that the TOE framework for organisational adoption was developed by Tornatzky and Fleischer (1990) based on the Contingency Theory of Organisations. The TOE theory emphasises that an effective organisation should have a structure that is consistent with its environmental needs which influences the firm's adoption decision. The TOE framework as outlined by Oliveira and Martins (2010) is described as follows;

- The technological context relates to technologies that are currently being used within the organisation as well as new ones that are relevant to the organisation;
- The organisational context relates to the characteristics and resources of the organisation that either constrain or promote the adoption process;

- The environmental context relates to the environment in which the organisation conducts its business which includes but not limited to competitors, industry and government which can motivate or create barriers to the adoption process.

Ven and Verelst (2011) contend that TOE framework is taxonomy for the classifying factors and, therefore, it does not describe all factors that influence the adoption process; and consequently, TOE framework is used in conjunction with other adoption models as it only encourages the researcher to take a broad view on the subject matter.

Moreover, things like enterprise equipment as well as processes are also taken into consideration within the technological context. On the other hand, scholars stress that “the organizational context” talks about the business features and facilities including size, centralisation, and level of formalization, management structure, human resources, slacks and connections between staff. Finally, the environmental context described by scholars considers the dimension and layout of the industry, competitiveness side of a company, macroeconomic background and regulatory settings.

2.5 CONCEPTUAL RESEARCH FRAMEWORK

Conceptual research framework basically gives a research work conducted a solid ground to base the study on existing and tested theories which are deemed fit to explore the study. The three theories/models discussed in the previous section are crucial when formulating conceptual research framework that supports the present study by harvesting from certain aspects of these theories.

Bickman and Rog (2008) state that conceptual framework statements are used to provide a preliminary philosophy of what the study is about and why this phenomenon takes place. Conceptual model is defined in a form of graphic or worded business model which "explains the main things to be explored — key factors, ideas or variables — and the presumption of relationships between them, either graphically or in narrative form" (Miles, Huberman et al., 1994). The three theories were discussed, and the conceptual research framework is the interpretations extracted mainly from Technology, Organization, and Environmental Framework (TOE), IT Compatibility Model, and Resource Dependence Theory.

Figure 10 below, the Conceptual Research Framework for Digital Transformation for South African Financial Service Provider Context, highlights extracted elements of the frameworks. Elements from these frameworks which suites this present study are described in table 8, Elements of the Conceptual Research Framework contextualized. Theoretical frameworks, as lenses, aid in the collecting of information.

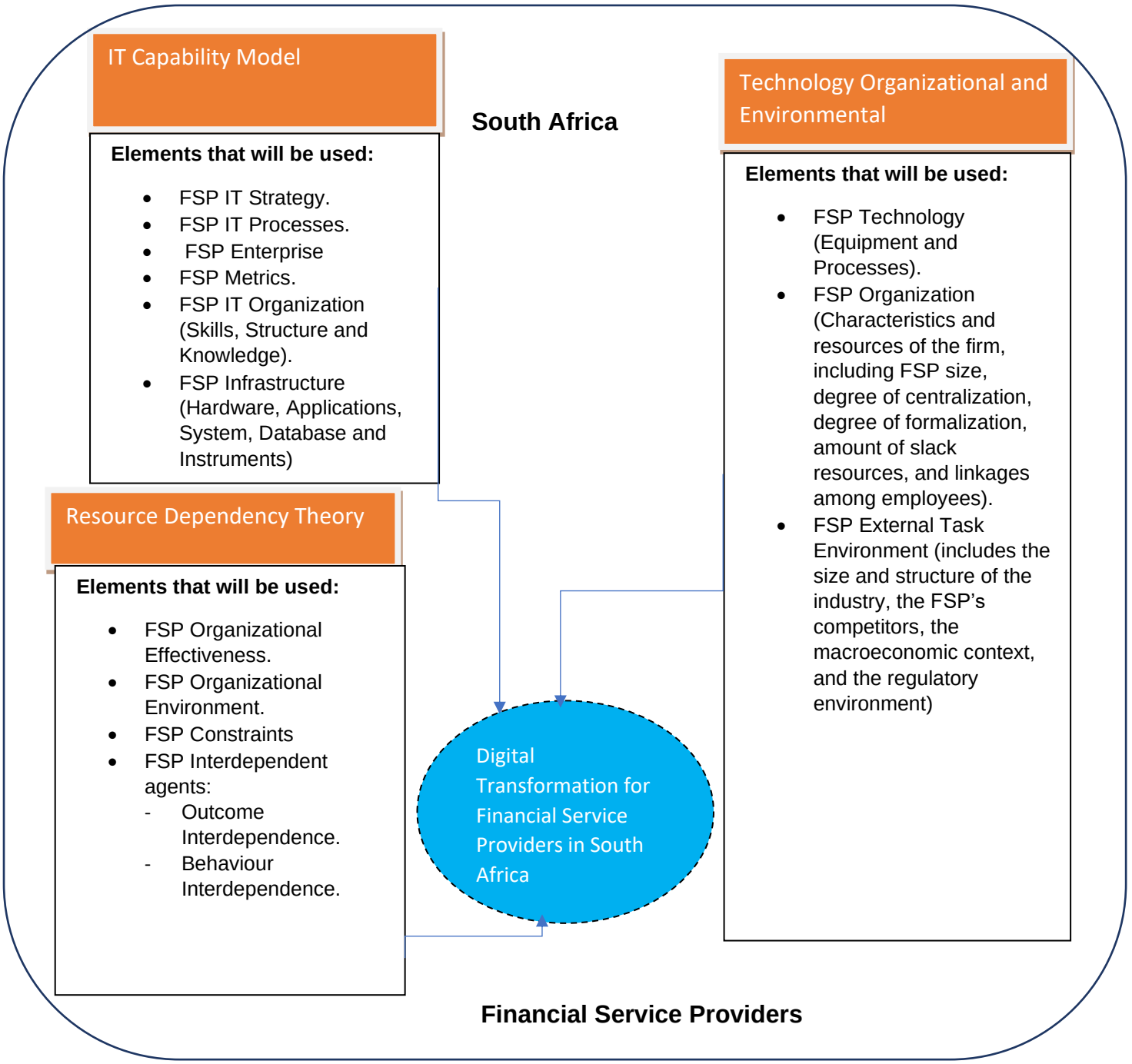

Figure 10: Conceptual Research Framework for Digital Transformation for South African Financial Service Provider Context

The below table 8 contextualizes the CRF elements, these elements inform the study objectives and questions.

Table 8: Elements of the CRF contextualized

Framework /Theory/Model	Descriptors
IT Capability	• Information technology strategy of South African financial service providers will be analysed. • Information technology processes and metrics utilized by South African financial service providers will be studied to understand their businesses. • South African financial service providers information technology organization (Skills, Structure and Knowledge) will be analysed. • The study will look at the assets / infrastructure used by South African financial service providers (things such as hardware, applications, system, database and instruments).
Resource Dependency Theory	• Organizations depend on resources; therefore, will look at South African financial service providers organizational effectiveness and organizational environment. • South African financial service providers resources required to conduct business are thus often in the hand of other organizations, interdependent agents (outcome Interdependence and behaviour Interdependence) will be examined. • Resources constitute a power foundation; therefore, the study will look at resource's constraints South African financial service providers have at their disposal.
Technology Organizational and Environmental Theory (TOE)	**Technology:** • Identify the features, availability, characteristics of technology with regards to South African financial service provider's readiness (equipment and internal processes). • The FSP environment is a key technological driver compared to other institutions. **Organization:** • FSP formal and informal linking structure. • FSP communication process applied. • FSP size as opposed to other institutions **External Task Environment:** • External environment such as government regulatory that has impact on South African financial service providers. • FSP characteristics and Market Structure as opposed to other institutions. • FSP technology support infrastructure as opposed to other institutions.

2.6 SUMMARY OF CHAPTER 2

This chapter presented a literature review with the focus on significance of digital transformation, role of leadership on digital transformation, digital transformation journeys, impediment for going digital, digitization drivers, objects and impacts, drivers of digitization, impacts of digitization, digitalization: digital innovation and transformation and elements of digital transformation. This was followed by a discussion of the theories that underpinned this study, as well as the conceptual framework, is provided, the thesis used IT capability model, resource dependency theory and the technological, organizational and environmental theory as lenses underpinning the study. These theories served as lenses to deeply understand what and how South African Financial Service Provider experience the digital transformation. The goal of this thesis was to conceptualize a digital transformation framework for Financial Service Provider in South Africa.

An analysis of the reviewed literature shows that digital business is well research; however how organizations can do digital transformation remain under researched as there are inadequate studies showing how digital transformation can be done. Digital transformation within South African Financial Service Providers context, as well as how it can be done, requires further investigation. The next chapter, Chapter 3 describes the methodology followed to achieve study objectives.

3 CHAPTER THREE: RESEARCH METHODOLOGY

3.0 INTRODUCTION

In this chapter, the methodology followed to accomplish the research objectives and address the research questions is discussed. The chapter provides insights into how the study was conducted and the rationale for using the research methods employed. An overall research process, explanation and description of the research design, data-gathering instruments, participants, issues of validity and reliability as well as description of the FSP where data was collected from is described. The chapter also describes importance and validity of qualitative research in the field research.

Yin (2009) confirms that research methodology is a strategy that enables study to systematically achieve the goal and tackle the research questions by applying correct research methods and techniques. Six (2012) describes research methodology as the overall approach pursued by a researcher in carrying out a research project and advancing from the findings of empirical research into inferences concerning facts.

The present study explored and described the processes concerning digital transformation within financial service providers in South Africa. The communication between the researcher and the study participants was a conversation around digital transformation, where both experiences and multiple truths were shared (Matsumoto, 2018) and (Potter, 1996). The study drew on IT capability model, resource dependency theory and the technological, organizational and environmental theory as lenses underpinning the study. These theories served as lenses to deeply understand what and how South African Financial service providers experience or should experience the digital transformation.

The goal of this study was:

- To conceptualize a digital transformation framework for Financial Service Providers in South Africa.

The primary research question driving the study was:

- How should digital transformation manifest within the South African Financial Service Providers' context?

3.1 RESEARCH PROCESS

Saunders et al. (2007), having described research and research methodology, provide a step-by-step guide for the creation of a sound, justifiable research methodology as illustrated in Figure 11.

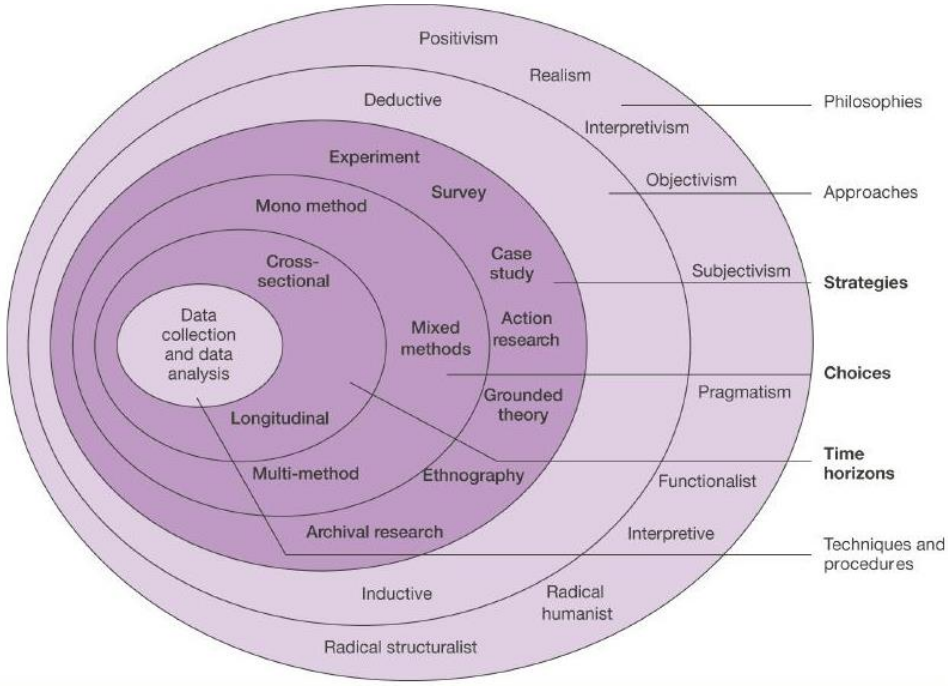

Figure 11: Research Process Onion (Saunders et al. 2007)

The outer layer of the "research onion" first identifies the various “philosophical stances” that define the researcher’s perception and principles of nature in gaining information to understand a phenomenon in its natural environment. This understanding then offers a way for selecting the correct research methodology, research strategy, methods of research and time horizon. The data collection and analysis are represented. The research onion, based upon the illustrated interconnected stages of the research cycle, offers a detailed understanding of the research methods and their importance.

3.2 EPISTEMOLOGY

Epistemological belief in science refers to the characteristics of scientific knowledge and the development of cognitive or views of scientific knowledge, which is a personal scientific philosophy belief (Elder, 2002). Interpretative epistemology is applied in this present study as the theory of obtaining knowledge about the financial service providers in South Africa, epistemology is knowledge about a phenomenal.

Knowledge gathered through systematical reviews of literature, scholarship and the empirical evidence was crucial in formulation of the framework for digital transformation in financial service providers. The knowledge was interpreted to create reality.

3.3 ONTOLOGY

This is described as the best appropriate way to learn about a phenomenon. Ferraris (2015) refers to ontology as what there is and epistemology as the way in which people know or represent what there is. In this study there is no single reality as there are series of issues that hamper or enable financial service providers progress in South Africa, the study applied constructionist theory to understand what the reality regarding financial service providers' digital transformation processes is.

3.4 RESEARCH PARADIGM

Philosophies are opinions of people; they are a number of common presumptions about the social sphere. Burrell and Morgan (2017) argue that "to be located in a particular paradigm is to view the world in a particular way". Orman (2016) states that research paradigm describes how research can be resolved as a series of common beliefs and agreements shared by scientists. Two major research paradigms positivism and interpretivist are briefly described next:

3.4.1 Positivism Paradigm

This is occasionally termed as a "scientific approach or science study", "which is based on the rationalistic, empiricist philosophy that originated with Aristotle, Francis Bacon, John Locke, August Comte, and Emmanuel Kant" (Burrell and Morgan 2017). Creswell and Creswell (2017), report that positivism paradigm "reflects a deterministic philosophy in which causes probably determine effects or outcomes".

3.4.2 Interpretivist paradigm

Research approaches are designed to understand the world and experiences, according to Cohen and Manion (1994), "this refers to the world of human experience" and actuality of the world is built according to social principles (Mertens 2014). According to Creswell and Creswell (2017), an interpretative or constructivist scientist uses the "participants' views of the situation being studied" and acknowledges influence of their very own viewpoint and perspectives on the research.

Table 9: Positivistic and interpretivist research paradigms (Burrell and Morgan 2017):

Positivist/Postpositivist	Interpretivist/ Constructivist
Experimental Quasi-experimental Correlational Reductionism Theory verification Causal comparative Determination Normative	Naturalistic Phenomenological Hermeneutic Interpretivist Ethnographic, Multiple participant Meanings, Social and historical Construction, Theory generation and Symbolic interaction"

The present study followed an interpretivist paradigm to study digital transformation in South African financial service providers. The reason interpretivist paradigm was followed is because the study sought to understand current status quo regarding how financial service providers in South Africa conduct digital business from their subjective experiences. This paradigm employs methodologies focused on attaching meanings from interviews and observations of study participants based on their subjective experiences.

3.5 RESEARCH APPROACH

Lincoln (2005), states that the essence of the research question and the topic being studied defines a research methodology and the approach taken. The purpose of the present study was to explore and describe processes and activities necessary for a sound digital transformation. This study was guided by the following secondary research questions:

- How do Financial Service Providers in South African conduct their business?
- What are the IT capabilities and resource dependencies for South African Financial Service Providers? How do these influence digital transformation?
- How does technology, organizational, environmental contexts influence digital transformation?
- In what ways could digital transformation happen for South African Financial Service Providers?

A qualitative research approach is selected because it strengthens the perception and definition of context as well as the motivations driving human interactions. Rationale for choosing the approach is given in the next paragraphs.

Pragmatic, mixed approach includes numerical information and text information on instruments such as interviews so that both quantitative and qualitative information can be found in the final database (Creswell and Creswell 2017). This study followed a qualitative research approach while also allowing for quantitative information.

3.5.1 Inductive Reasoning

This is described as a concept that allows researchers to use what is already known to deduce the uncertainty about the way the world is (Creswell and Creswell 2017). This approach heavily relies on meanings derived from the mostly qualitative data collected.

3.5.1.1 Justification for interpretivist Inductive reasoning

Although the study is underpinned by existing theories, it is still inductive rather than deductive. The elements from the theories were used as lenses to what themes should be studied and analyzed as opposed to testing and proving/disproving the theory constructs, deductively. With the inductive approach, the idea is to attach meanings to the elements as brought out during the collection of data, interviews and observations.

3.5.1.2 Justification for using qualitative research approach

Lincoln (2005) summarizes qualitative research approach as a multi-faceted form of research involving an interpretive, naturalistic approach to topics. The diverse complexity of qualitative research approach makes it possible for researchers to create a holistic picture of the problem. This study followed a qualitative approach and Lincoln (2005) provides concepts on which qualitative research is focused as follows:

- Qualitative research is holistic, it examines the bigger picture and begins by looking for a comprehension.
- Qualitative research explores a system's relationships.
- Qualitative research focuses on recognizing a particular social environment, not even on predicting it.
- Qualitative research requires time-consuming analysis, including ongoing data analysis.

- The researchers must become the research tool for qualitative research design.
- Qualitative research also offers scope to describe the individual preferences and ideological preferences of the researcher.
- The development of qualitative research involves informed judgments on consent and reacts to ethical concerns.

The study goal in qualitative research is exploratory and descriptive instead of explanatory (Ferreira et al., 1988). The descriptive aspect of qualitative research helps the author to describe the study participants' ' experiences, which either helps or contradicts the conceptual premises on which the analysis is focused (Wodak and Meyer. 2009) The descriptive aspect of qualitative research helps readers to understand what the experience means, what the issue is and how it works (ibid., 2009).

Qualitative research approach was appropriate for this study as the purpose was to explore and describe digital transformation process in its infancy stage with no known best practices for it, especially with regards to South African financial service providers. To this point, this study sought to formulate a framework that supports and informs digital transformation for South African financial service providers.

This study sought to understand the experiences of financial service providers in the South African context in accordance with the research criteria outlined in the preceding sections. The researcher deliberately took care not to present his personal experiences and tried to remain aware of his own tastes and perceptions. The current research is heuristic, since it seeks to provide the subjective view of digital transformation in the South African context. As illustrated in Chapter 2, most studies concerning digital transformation have focused on European countries and other parts of the world. Very little research has focused on South African context.

In order to ensure a heuristic character, Denzin and Lincoln (2005) suggested that:

- A holistic approach is used by the researcher in which all facets of the problem are explored in the quest for understanding the whole.
- In the present study, the work explores relationships within a community that includes embracing digital transformation for Financial Service Providers.

- The approach to research is unique. In this study, each participant's personal experiences were explored.
  Instead of anticipating it, the emphasis is on understanding the problem under investigation as it naturally unfolds.

3.6 RESEARCH STRATEGY

Yin (1991) describes case study research strategy as an “empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used”. Research case study strategy provides a comprehensive version of what happened, interactions, insights and methods in this specific case. In this study, a descriptive case study was considered.

Case study might be classified as either an extensive study of a human being, a group of people or an organization (Financial service providers, in this study). This is a case study of an organization that consists of multiple business units, which were treated as case units, falling under the financial sector industry. Gustafsson (2017) classifies a case study as a systematic and intensive study of an individual, organization, society, or any other unit examining the depth of data. Case studies are the preferred strategy to examine a contemporary trend in its actual life and when working on a phenomenon that is in the early stages.

3.6.1 FSP Description of the Case

Modiba Bank (pseudonym) is a Financial Service Provider doing business in South Africa and within the African continent with some presence outside the African continent. This was a case study of Modiba Bank. Modiba Bank has a rich history in South Africa and started building a franchise in sub-Saharan Africa almost 30 years ago. The bank has an on-the-ground presence in 20 countries on the African continent, and solid local knowledge required to operate a successful business in Africa. Modiba Bank is a diversified business that provides client solutions across the full range of banking and related products and services namely:

- Transactional products
- Mortgage lending
- Card products
- Vehicle and asset finance (VAF)
- Lending products

- Client coverage
- Global markets
- Transactional products and services (TPS) Investment banking
- Short-term and life insurance products
- Financial planning and modeling
- Integrated fiduciary services
- Specialized banking, wealth management and advisory service solutions
- Offshore financial services to African clients
- Investment services, including global asset management
- South African retail
- Business development and Asset management

This was a case study of Modiba Bank, a financial service provider, with multiple case units, 8 case units were studied.

3.7 RESEARCH DESIGN

This section describes how the study was conducted. It defines the unit of analysis, population, sampling and the data collection methods used.

3.7.1 Unit of Analysis

Trochim (2006), states that deciding how you will analyse data collected for a study is to first define the analytical unit. Simply put, the analytical unit refers to the "which" or "what" and this may be a single student or a group to be analysed for the study proposed. The study was about digital transformation in South African financial service providers (FSPs). Therefore, the unit of analysis was the FSP as an organization.

3.7.1.1 FSP Population

The population for this case study was the South African financial service providers, which belong to the financial banking industry. A population is described as the "aggregation of elements that actually select a sample" (Mouton and Babbie, 2001). The sampling method is affected by the population (Black et al., 2000). Myers et al., (2002) suggest that a sample is chosen to collect knowledge about the population from which it was taken. It means that the population must be identified and extensively researched before applying sampling techniques.

The population in this study consisted of financial service providers in South Africa, namely ABSA bank, Nedbank, Standard bank, African bank, Capitec, and the new Tyme bank, amongst others.

3.7.1.2 Sampling Method

Several forms of sampling are possible while conducting research, but researchers typically concentrate on relatively small (Lyell 1998). Research subjects are usually selected for their ability to provide detailed explanations of interactions and to convey perceptions, thus providing rich knowledge that will challenge and improve the understanding of the researcher (Crabtree and Miller, 1992; Hutchinson and Wilson, 1991). The next section describes the sampling for the study.

One large financial service provider was purposefully selected. In terms of research, a data set known as sample refers to group of people, objects or items that can be taken for measurement from a larger population. Purposeful sampling was applied for this study, where the chosen financial service provider was chosen on the basis of pre-selected requirements dependent on the research question. Using a purposeful sampling was meant to focus on specific characteristics of a financial service provider. Attributes like size, location, FSP's operational presence in other countries, continents as well as complex business units within this specific FSP made it easier to select this particular FSP and permission was granted.

3.7.1.3 FSP Participants

Semi-structured interviews with participants included individuals who have knowledge, experience and views about the business and its operations e.g. CIO, business owners, IT users and managers. The exact number of participants cannot be determined in qualitative research before the study is carried out. The researcher has specially selected participants who can contribute to the research matter and who are willing to share their experiences. The number of participants in qualitative research is guided by the degree to which the study question has been answered (Marshall, 1996; Øvretveit et al., 2002).

Interviews were carried out until the data were saturated to a reasonable degree and the researcher felt that the study question could be adequately answered. In total 23 interviews were conducted, and little new information was obtained from the 18th interview. Nevertheless, further interviews were carried out to ensure that there were not saturation stages. The last interviews verified the information obtained in previous interviews and revealed that the data obtained reached a saturation point

and it was at this point where there researched decided to stop conducting more interviews.

Executive management which is CIO's, senior managers, middle managers and variety of IT specialists. The numbers of those selected for the sample are given in Table 10.

Table 10: Number of participants

Population description	Overall Estimated population in the FSP Case units	Number in sample
Executive Management CIO's	10	3
Senior Managers	15	6
Middle Managers	20	8
Variety of IT specialists	15	6
TOTAL	160	23

Therefore, twenty-three individuals took part in the study. This follows Ritchie et al. (2013) guidance that a single survey would include individual interviews with less than 50 qualitative samples.

3.7.2 Data Collection

The study collected primary data through semi-structured interviews with individuals from the selected South African Financial Service Provider. Additionally, Observation was also applied as a technique to gather understanding of how FSP's conduct their business. 30-40mins observations were carried out at the FSP's offices to observe how FSP employees do their jobs/tasks daily as a way to determine if FSP employees follow particular defined processes to carry out their daily tasks. This is the best method to get closer FSP's and understand their world fully prior to formulating a conceptual framework. The semi structured interviews were carried out at the organizations location or a place agreed with participants, the interviews was conducted with decision makers and individuals that are involved in the day to day running operational running of the business.

3.7.2.1 Justification for semi structured interviews

There are three broad categories of data collection within the tradition of qualitative research: participant observation; interviewing; and the use of personal documents (Mouton and Marais 1988). In this study, interviews were used as the primary method of data collection. The semi-structured interview method was introduced, making it easier to understand the problem from the viewpoint of the participants in

the investigation. Appendix C for sample outlining some of the questions asked during the interviews.

Smith (1995) argues that in qualitative research interviews constitute valuable tools for data collection. A one-on-one form of interviewing helps the researcher to communicate with the participants during the interview process and detect non-verbal signs. In this study, a semi-structured interview approach was used to allow the research topic to be discussed freely and in depth. Denzin and Lincoln (2005) argues that unstructured interviews help researchers to grasp the situation's significance without requiring prior categorization.

The researchers tried to gain a deeper understanding of participant structures through means of dialog and language by interviewing as a method of collecting the data. The process of interviews enables the investigator to look for clarification and a deeper understanding. The researcher himself is an IT expert at the time of investigation and thus he may share his own experiences with the participants, thus matching the participants. It helps the researcher to build trust and communication with the participants and makes it a bit easier for participants to share their experiences without being tested (Steyn 1998).

Denzin and Lincoln (2005) state that qualitative research stresses the importance of context in data analysis. The participants were able to decide on the venue for their interviews during the data collection phase. It resulted in each participant being interviewed in a conducive environment as they chose where the conversation would take place.

3.7.2.2 Interviews Language

The interviews were conducted by the researcher and were all conducted in English as the preferred language and as a primary language understood by participants as professionals and research. The native language of the participants was not English, their grasp of the English language is great because of their education and professional status. The research acknowledges that there were non-first language speaking participants, however for the purpose of the interviews; all participants were requested to have interviews conducted in English, which meant that translation from the native language was not necessary. Fortunately, participants had no issues with interviews being carried out in English rather than in their own native languages. South Africa is unique with about 11 official languages. However,

the FSP conduct their business using English language as a medium of instruction. Additionally, the FSP, policies and manuals are published in English.

3.7.2.3 Participant treatment

Mouton and Marais (1991) outline that the researcher should always respect participates during the interview. Due to the Information technology experience of the researcher the participants who are CIOs, business owners, IT users and managers could easily relate well during the conversations, although he held from putting his own point of views on the participants. That is, the researcher's knowledge about the field and that of participants played a key role in influencing the smooth process during the interviews (Edwards, 1990; Orbele, 2002). Because of the researcher and participants' similar social context, a safe atmosphere in which participants could build up the meaning of their interactions without getting the impression they were being judged was created.

3.7.2.4 Scheduling interviews with participants

Once participants have agreed to be interviewed, a time was scheduled according to the time indicated by the potential participant. Interviews were scheduled for 30 minutes to 60 minutes depending on the availability of the participant. Although most participants managed to spare 60mins for interviews, others could only manage 30 minutes to 40 minutes due to their busy work schedules. Iinterviews were conducted at the workplaces of the participants, others at coffee shops as necessary. Researcher didn't want to be pushy and do interviews at participants homes even though one or two suggested that they are comfortable doing interviews at their home. The researcher felt that participants' homes are mostly family oriented and privacy should be given to the families.

3.7.2.5 Recording interviews

All interviews were digitally recorded using an audio recorder on a mobile phone. Recording interviews meant less distraction, this was discussed with participants e.g., having to write down notes etc., during the conversations. The participants were able to talk freely about the phenomenon in question in their own words (Mouton and Marais, 1991).

The researcher was able to follow up on interesting discussion avenues that arose in the interview since these were semi-structured interviews. Semi-structured approach allowed for flexibility during the interviews in terms of having some key discussions based on some of responses of the participants as opposed to structured closed end

type of interview approach. Participants were regarded as experts and had the opportunity to tell their story and share some knowledge as well as experience. This enabled the researcher to relate subjectively to the participants rather than to the terms of the researcher (Edwards, 1990).

3.7.2.6 Interviews sensitivity and approach

Even though the interviews were conversational, the complexity of the subject did not make it easy for certain participants to be totally open and transparent about environments they are operating in. The researcher could sense that some of the participants filtered information, during the interviews, possibly due to the sensitive nature of information, since this is a financial sector industry. Despite the seriousness of the matter, the researcher allowed only voluntary details to be given out when participants were holding back.

The approach for semi-structured interviews was based on methodology outlined by Neuman (2000), following qualitative research interview approach:

- Questions are customized to the attendee situation.
- The researcher was interested in answers and encouraged participants to elaborate further with examples for clarity.
- Iinterview is like a casual conversational interchange, but with much more interviewer direction
- Cconversationns with jokes, aside from stories and distraction is also documented.
- Open questions are used, and comparisons are available.
- The speed and direction of the interview are managed jointly by the researcher and participant.
- Researcher adapts to the standards and language use of the participant.

The interviews have been influenced by responses of the participants aas stated in the previous section and the study course has therefore been guided jointly by the researcher and the participants. It was convenient for the researcher to communicate and discuss the topic of research with the participants.

3.7.2.7 Summary of Data Collection procedure

- Obtained research ethics clearance from the North West University.
- Re-contacted the already willing financial service providers to get the permission to conduct the study (They had indicated that ethics clearance from the university should be given before they would give permission)
- Scheduled appointments with relevant and purposively identified participants, within the financial service provider, as well as agree on interview locations e.g. financial service providers' headquarters boardroom or the participant's office.
- Conducted and digitally recorded semi-structured interviews.
- Observed daily routines and operations at the financial service provider.
- Participant observation was also done to enable the researcher to develop mutual trust with the participants and observe context-specific routine business operations.
- Acts, Bills, White Papers, policy and other relevant documents were reviewed when they were voluntarily made available.

3.7.3 Data Analysis

Mouton and Marais (1991) describe an analysis of the data as the mechanism by which a phenomenon is split into its components to better understand it. Data analysis was intended to describe or illustrate data evaluation

Through this research, versions of digital transformation understanding, knowledge were identified from the perspective of the participants rather than an absolute answer to the problem. Inductive studies allow for subjective approach when interacting with participants. Øvretveit et al., (2002) claim that content analysis and thematic analysis have become South African content researchers' favourite approach. Although, the ibid.,(2002) do not explain the popularity of content analysis and thematic methodologies in South Africa, it can be assumed that the support of postmodern research for multifaceted perspectives and multiple constructed identity fits comfortably with the diverse society of South Africa.

Table 11 below summarises common data analysis processes used under major research paradigms namely: positivist and interpretivist.

Table 11: Common Data Analysis Approach Summary

Positivist/Post positivist	Interpretivist/Constructivist
Quasi-experiments	Interviews, Observations
Tests	Document reviews
Scales	Visual data analysis

Thematic and content analysis are typically associated with inductive studies. The data analysis started after the initial interviews were completed. Researchers typically analyse observation variations throughout a research project or study throughout the entire information gathering phase (Nowak, 1994). Data from audio recordings were transcribed into text using Microsoft Office Word. .

Thematic analysis is by far the most popular form of qualitative data analysis and this concept focuses on the study and recording of meaning patterns within data (Guest, MacQueen et al., 2012). This study utilized a qualitative approach where thematic and content analysis were used for data analysis purposes.

Content analysis approach was used to study manuals, policy documents, communication components, these components are normally in a form of text which constituted various formats such as pictures, audio or video (Bell, Bryman et al., 2018). In this study content analysis was used to analyse company documents while thematic analysis was used for analysing interviews where themes are synonymous with objectives of the study.

3.7.3.1 Thematic Analysis

Based on what has already been discussed, thematic analysis in this study was deemed necessary. Theme analysis can be described as a way to identify, analyse and document interview data. This details the aggregation and interpretation of a data set (Braun and Clarke, 2006). Data themes can be identified in an inductive manner ' bottom up ' or in a deductive, theoretical way ' top down ' (Boyatis, 1998). Theoretical thematic analysis allows the researcher to code the data on the basis of research questions, where such research questions are influenced by the theoretical

lens. Theoretical thematic analysis was thus appropriate for this study and was, therefore, used to analyse the data collected through interviews.

The thematic analysis consists of a method of gathering knowledge in order to produce thematic meanings and performance. Following the following three steps, as explained by Ando et al. (2014):

- The first step of the inductive study involves familiarization with interview data using an inductive approach. The reported data were then checked for accuracy and familiarization. This inductive stage concentrated not only on data specific, but also on the repetition of transcripts and commentary (Braun and Clarke, 2006).
- The second stage, the inductive process did not only concentrate on data precision, but also detailed repeated transcript readings and commentary notes.
- The interpretative nature of this study has helped the researcher further group knowledge through codes and predetermined themes with organizational documents and transcripts. These categories are presented in Chapter 5 of this thesis, which shows how they were used to develop the framework.

3.7.3.2 Content Analysis

Data can also be analysed using content analysis. The cycle requires documentation of emerging topics (Hsieh and Shannon, 2005). The content analysis, which uses a document review methodology, was in the present study, followed to make sense of the financial service provider's documents and manuals. According to Bernard (2017), in order to answer a question or to solve a problem, a content review is carefully considered for collecting and understanding information or facts. Of great importance is the assessment of the credibility, trust and order of events. Content analysis was used to categorize objects that are fairly reliable and augmented data analysed through thematic analysis. The most important thing is orderly, logical statements based on the model and the analysis, collection and interpretation of the material to complete the results (Schreier, 2012).

3.8 TIME HORIZON

Observation time horizons apply to the period (Mouton and Babbie, 2001). The time period refers here to the duration of the collection and processing of data. In general,

researchers perform their studies on the basis of two forms of time: cross-sectional and longitudinal. In a situation where data collection is carried out several times, longitudinal studies are performed and cross-sectional studies are carried out in one sitting (Mgemane, 2012). These dimensions of time are discussed in the next section below :

3.8.1 Cross-sectional Studies

Cross-sectional studies can be carried out conveniently as the researcher can gather data at a single stage. The studies of this nature represent a brief snapshot (Cooper and Schindler, 2003) and data is collected only once (Babbie, 2004). In the present study, data was collected and processed in one phase, which saved time and resources (Saunders et al., 2011). Appropriate for the present study, Mouton and Babbie (2001) argue that cross-sectional time zones are typically suitable for descriptive and exploratory studies.

3.8.2 Longitudinal studies

The longitudinal studies, according to Mouton and Babbie (2001) are structured to allow observations of the same phenomenon over a long period of time. Most research projects, including documents, which include in-depth interviews and observations, are generally retrospective and used for analysing changes over time (Babbie, 2004; Cooper and Schindler, 2003). This was not the case in the present study.

3.9 QUALITATIVE RESEARCH RIGOUR AND VALIDITY

Yin (2009) considers validity as a measure of truthfulness by analysing whether the replication of previous studies following similar research procedures may yield similar results. Saunders et al. (2007) also believe that it is true if study results are as they really seem. Validity and reliability are more applicable in positivist studies, (Morse et al. 2002; Yin, 2009)).

Trustworthiness is concerned with positive reliability and validity in qualitative research (Sandelowski, 1993). Table 12 presents four dimensions of trustworthiness, in support of the dimensions, as ensured in the present study. Rigour is maintained on the basis of triangulation, sampling, and a well recorded sound testing method, leading to confidence in the measurements as provided in Table 12 (Corbin and Strauss 1990; Lincoln and Guba 1985).

Table 22: Qualitative Data Trustworthiness (Corbin and Strauss 1990; Lincoln and Guba 1985)

Trustworthiness Division	Positivist Similarity	Definition	Application
Dependability	Reliability	Sense of stability	Coding and pattern analysis
Credibility	Internal validity	Isomorphism of research findings with reality	Data
Transferability	External validity	Generalizability of research findings	Results
Confirmability Source: (Graneheim and Lundman, 2004); Lincoln and Guba, 1985)	Presentation Source: (Graneheim and Lundman, 2004); Lincoln and Guba, 1985)	Neutral observation Source: Guba and Lincoln (1994)	Inquirer's minimized bias Source: Patton (2002)

3.9.1 Consistency or Dependability

Much like reliability in quantitative studies can be seen, dependability in qualitative research occurs when another researcher may perform research after the current study was planned (Thomas and Magilvy, 2011).

As described above, this study followed a thorough research design process that justified the inductive approach to research, the descriptive intent of research, the interpretive stance and the case-study research strategy. This study was not carried out in a haphazard manner but directed by Saunders et al. (2007)'s "study onion" which established a realistic and dependable aspects of the research methodology followed.

3.9.2 Transferability or Applicability

Transferability is synonymous, in quantitative terms, to external validity. This means and checks if the study results are applicable to other contexts (Merriam, 1998; Walsham, 2006). Methods of data collection, as well as other aspects of research methodology, have been discussed and justified in detail. The transferability approach of this study thus followed the Walsham (2006) and Shenton (2004) approaches, both considering population, data collection and sampling as transferability issues. The study findings are therefore transferable and applicable to other South African Financial Service Providers, owing to the operational similarities and context.

3.9.3 Credibility

Credibility is similar to internal validity, in quantitative studies. It is about testing and ensuring that the results are reliable (Merriam, 1998). The triangulation of the research instruments and a formal interpretation can be taken into consideration (Miles and Huberman, 1994).

This study ensured credibility by taking up the claim put forward by Noble and Smith (2015) to guarantee and increase the credibility of the design and implementation of study that qualitative scientists would consider techniques such as data triangulation. The data collection was therefore carried out with interviews and report review techniques, which are additional, and allowed the FSP's procedures to be thoroughly studied. To this point, the triangulation of theoretical frameworks and associated models, and the triangulation of different data sets, improved the study's credibility.

3.9.4 Confirmability

Confirmability follows when integrity, transferability and reliability have been achieved. Walsham (2006) stressed that confirmability tracks the impact of the researcher in the production of ideas and it is important to check that study results have been influenced more by participants than the researcher. In this study, confirmability has been enhanced by noting important topics and relevant themes during data collection, which relied on the participants' views and experiences instead of that of the researcher.

3.10 RESEARCH ETHICS

Silverman (2009) outlines that universities are working hard to protect the privacy and confidentiality of study participants; this is the importance of ethics in conducting research and addressing research challenges. The University of North West, Faculty of Economics and Management has formed a research ethics committee in recent years to ensure that ethical standards are met and followed during a study. This study was approved by the university research ethics committee. There were several ethical considerations to ensure that the study was conducted properly (Babbie & Mouton, 2001). That is, the present study followed and abided by the research ethics by ensuring the following;

3.10.1 Informed Consent

In order to comply with ethical considerations in conducting research, all participants received verbal consent, a consent form for interviews and involvement in the study. Therefore, the participants willingly participated in the study after being informed and thoroughly understanding what the study entailed.

Silverman (2009) notes that although it is common practice to obtain written approval, highly formalized methods for securing consent should be avoided to

encourage relationships which maintain ongoing ethical respect for participants. However, verbal consent was not considered appropriate in this study as participants form part of financial services sector and consent forms had to be signed and completed before interviews took place.

The informed consent form that was used as a research / consent checklist is attached in Appendix B. The intention of the study was explained to the participants and they knew to withdraw at any time during the interview should they wish to not continue with the interview for whatever reasons. In order to not distract participants with writing down conversations during the interview and to save time, participants also gave permission to record the interview and none of the participants had trouble with being audio recorded digitally. Researcher explained to participants that the recordings will be transcribed later.

3.10.2 Privacy and Confidentiality

The participants were further informed that their information would be kept private and confidential, that the content of each recorded interviews will be shared only with the research supervisor. The supervisor and the participants do not know each other and have no sort of relationship. This thesis does not reveal the real names of the participants but rather uses pseudonyms. Private and confidential information such as names of participants, identity numbers and any other demographic information that could lead to the identification of the participants remain hidden throughout the thesis. That is, all participants in this study remain anonymous.

All correspondence with parties involved and the Financial service providers; company documents is protected. The obtained data during interviews and observations shall not be available to anybody.

Considering the personal nature of the r interviews, the researcher felt it necessary to stress the confidentiality of the information so that trust is maintained. The built trust encouraged the participants to share their experiences, views and opinions, freely.

3.10.3 Protection against any harm

There was no predictable harm – physical and emotional – imposed on participants. However, participants were asked to identify any factors that the researcher may be unaware of that could create risk of unexpected harm; example; psychological conditions that already exist.

Trustworthiness ensures that qualitative research is credible and defensible (van Dyk, 2016). Criteria for data quality in this study is explained based on the principles of credibility, transferability, dependability and confirmability, above.

3.10.4 Reflect on Interviews

At the completion of the interviews, both the participants and the interviewer explored the interview process and the outcome of the interview. The purpose of the discussion was to ensure that participants were not left affected or traumatized by the interview. Ironically, participants reported their enjoyment of the interviews, but it was also important to note that psychological therapy would be provided to participants should they need it at any time following the study and the good news is that not a single participant requested psychological therapy following the interviews.

The research interviews were instantly deemed successful as the participants claimed they had enjoyed the conversations. The participants all tended to participate openly in the interviews, and this suggests that the interview process encouraged the participants to share their knowledge and experiences in a comfortable and without criticism, unjudged atmosphere. It is also hoped that the findings would add value to the body of knowledge by providing insights into the challenges and opportunities that South African financial service provider are experiencing with regards to digital transformation.

3.11 SUMMARY OF CHAPTER 3

This chapter addressed the methodological approach followed to accomplish the study research objectives. Explanation and description of research processes including paradigms, time horizon, research strategy, research design, research approach, data analysis, research rigour or research validation, ethics, ontology and epistemology were discussed and justified. The next chapter, Chapter 4 is on data analysis and discussion of the study findings.

4 CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.0 INTRODUCTION

Chapter 3 discussed the methodology followed in this study and explained how data were collected using semi-structured interviews, documents and observation. This chapter analysis data using thematic and content analysis. Content analysis approach is used to study manuals, policy documents, communication components, these components are normally in a form of text which constitutes of various formats, pictures, audio or video (Bell, Bryman et al., 2018).Thematic analysis is used to analyse semi-structured interviews data, where themes are the defined objectives of the study. That is, a theme is synonymous with a study objective. Each study objective has sub-themes and sub-subthemes. The Analysis just like the collection of data is carried out using the theories (outlined in chapter 2) as lenses, below is a recap of study objectives and theories used:

Study Objectives:

- To analyze business strategies and how financial service providers conduct their business.
- To analyze financial service providers IT capability and subsequent resource dependency.
- To analyze how technology, organizational, and environmental contexts may influence digital transformation.
- To determine how digital transformation should manifest for South Africa financial service providers.

Theories as analytical lenses:

- IT Capability Model
- Resource Dependency Theory
- Technology, Organization and Environment Theory

This chapter is outlined as follows, firstly the demographics of participants is given. This is followed by the analysis of data per theme. Each theme is a section that has sub-sections; Interviews were conducted in 8 business units which will be treated as case units for the purpose of data analysis in this study. This large financial services

provider has varied business units, synonymous with case units. The anonymity of the financial service provider (FSP) and that of participants is held. To this point, MM Modiba Bank is used as a pseudonym for the FSP.

Digital Transformation happens within the business units, case units, namely:

1. **Office of the CIO** (case unit A)
2. **Cloud Engineering Practice** (case unit B)
3. **Business unit design practice** (case unit C)
4. **Backups and Storage** (case unit D)
5. **Employee Experience** (case unit E)
6. **Communication Networks** (case unit F)
7. **Systems Integration** (case unit G)
8. **Work Space and User Experience** (case unit H)

Data analysis and discussion of findings is done per case unit, section 1 to section 8.

4.1 SECTION 1: CASE UNIT A STUDY FINDINGS

This section analysis data and discusses findings from **Case Unit A: Office of CIO of Information Technology** business division of the financial services provider. The analysis and discussions are done per theme. A theme is synonymous with a study objective.

4.1.1 Case Unit A: IT Capability, Office of CIO of Information Technology

This theme explores and describes the information technology capability of the financial service provider. The interview question is followed by responses and for all participant responses pseudonyms are used instead of t real names. Subsequently the researcher's comment meant to bring out the study finding is given.

Interview Question 1

How would you describe your business unit and the IT business strategy?

The IT business unit functions basically at a group level. The CTO for IT or the CIO for IT are at group levels by the group executive committee. I think that's important because it shows the importance that it has within the banking organization. So, we do everything from acquiring product, building product, working with customers, building product, running, operating, securing the product that we build, etc. All IT capability that is executed in South Africa falls under my region. So, we partner in the SA IT context with the chief executive officer. We have a universal banking capability, wealth and insurance, banking retail,

commercial banking and corporate investment banking is the full spectrum of a kind of banking product that is offered in SA to both our personal customers and cooperate customers essentially.

The unit is more responsible for acquiring and managing products, building products, working with customers to build information technology products, operating, securing these products. This unit basically provides all these capabilities to other business units through its sub-units within the CIO area. The unit provides a universal banking capability which is able to delivery at various levels of the financials services.

Interview Question 2

What challenges are you experience within your business unit?

So, I think there are a few challenges. Firstly, we've got an environment that is incredibly complex, and I think you would argue that it's overly complex and as a result of its complexity it's therefore kind of overly expensive and costly to run. It's therefore also both complex and relatively old, it tends to be quite fragile. So, things break easily when you are making changes. It's not always that evident that what you're doing is going to impact something else. So that's kind of at a technical level. If you look at the people level, I think with the challenges that kind of manifests in terms of in the bank. But as a result of the challenges we have in the country, I think, and we don't have a big resource pool here in South Africa.

The CIO area outlines key challenges within various units across the entire stack as complex, relatively old (legacy systems).Therefore, this results in high cost to manage such a stack. Additionally, old stack will mean a lot of components need to be maintained or replaced regularly due to end of life reached, as a result such a stack is likely to break easily if not changes are brought in timely to mitigate this.

We don't have a lot of experienced and skilled people. We've got a lot of people who are coming through the ranks of their organizations. So, the feeder into IT from graduate programs and learnerships are great. But we're also using a lot of people with experience and you need people with experience to kind of mentor and coach the kind of people who come in. So, we've got a bit of a challenge there at the moment as a result of many reasons, it's not like people are immigrating. I mean people are retiring and the competition in the country is quite fierce and people move to other organizations. So, it's tough. The market,

which we operate, it has gone tough. So, there's the technical, complexity, different ability and the cost challenges and the engineering challenges or people challenges.

This asserts that skills are a challenge within the organization however, they are reliant on things such as graduate programs and experienced resources training newer staff as a way to share skills. Skills are a key challenge within this industry, as a lot of experienced people are retiring, immigrating and this means they will result in shortage of capabilities required within the industry.

So, the way we built systems initially in this organization was done in a very particular way. The world has moved on at a rapid pace. So, what we are stuck with now is some of the legacy process and legacy technologies or pulling applications that are no longer either applicable or relevant in today's age. Getting those new practices defined is one thing, getting them embedded within teams and very serious organization have done things in a particular way forever is actually tough. If you look at, I mean infrastructure, basically software numbers, everything is defined. A software infrastructure is code, pipelines, repositories, versioning a lot of people in the infrastructure world didn't grow up like that. And then, simply know how to move that into where they're at.

The focus is on challenges around culture, the industry has evolved, and people are still used to old way of doing things. Today's systems require new skills, new thinking and new way of doing things. The world has changed; there is thing like software as code that has changed how infrastructure is deployed as opposed to traditional way of infrastructure deployment.

So those kinds of things, the same happens in the software world we used to build using a method and now to run continuous integration, continuous testing, continuous everything and a lot of teams don't get there. if you look at the complexity now, we've got an expensive cost in a fragile estate, we've got a resource, a resource pool that's not rich with talent and we are losing people, we've got new methods and stuff that we need to deploy, and we don't have a lot of people experiencing it or necessarily able to adapt to it. So that's gives you a sense of the challenges, our reputation that with customer expectations are changing customers.

We as customers use Amazon, Google, Facebook or whatever else. It's always there, always on, changing rapidly and it's free. Things have changed, and customers are expecting that at the financial services as well. But until we fix all those things, I just spoke to you about now

we can't eliminate. So, then number one, we should talk about how to go about fixing it. That was kind of some of the macro challenges.

The old way of doing things is what increases the costs within the financial service provider. However, they are slowly adapting to new ways of doing things, following models used by big companies like amazon, Google and so forth. However, these models require new skills and new thinking. Today's customers expect agile and innovative solutions from suppliers or service providers.

Interview Question 3

What sort of skills or competencies are required to make your IT unit a success?

What we need more in IT that we don't have is more engineers. I'm not only talking about software engineers, but it could equally apply to people sitting in the infrastructure world, if you're treating everything as software. We need more software engineers because the workforce composition in South Africa, if you look at the different roles and you classify their roles as engineering versus non-engineering roles. We've got 42% of the engineering and 58% is non-engineer. That's a problem. So, we don't have enough people in the engineering developers, engineers, the ones who make the difference for change that go to write the stuff and install the software. If that's not big enough and not competent enough then we will always struggle to deal with the challenges.

The preceding suggests that competences or skills required within financial services are more of software engineering type. Software engineers have more impact in any organization due to the nature of their skills to change and make thing more agile. Therefore, the participant states that the financial services operating model is like 42% of the engineering and 58% is non-engineer and this is a problem for this organization. They believe in engineering-skilled type of indivuals, especially for software development purposes.

Interview Question 4

When you say engineers, are you referring to developers?

I'm talking to software engineers. It's a broad category of things. Engineers is like an umbrella term. So, it'll be software, it will be solution architects, software architects, DBA's, network engineers and software developers, those kinds of things crafting the kind of engineering.

Engineering capabilities required are classified as part of software development world with roles such as solution architects, software architects, database administrators, network engineer's software developers and so forth.

Interview Question 5

In your view, how do you measure performance in your business unit? How do you gauge that your business is performing to the optimum?

Probably two very simple metrics or not simple in concept but not necessarily simple to measure. So, the one category of it is around the availability of systems. So, customers are expecting secure systems, the measure there is on how many issues we have and how long does it take for us to recover from an incident? Incidents will always happen, systems break, in fact systems are in a perpetual state of failure and you just simply don't know most of the time.

The systems will break, we need to acknowledge that, and we should be breaking less frequently. But when we do break or when we do fail, we should be recovering a lot quicker. So, in that context, that's the one key set of measure. The other which is probably equally as important, is the time to value or time to market. How long does it take us to go from an idea to a product or a feature setting for our customer? That is largely attributable to our engineering methods, our processes, our practices, the skills of our people, etc. The better we get at that, the better capabilities we have in the organization.

Measuring or evaluating performance of various business units within the organization is in two folds, namely availability of systems and time to market. Availability of systems talk to how reliable are systems for customers to transact at any time with little possibility of downtime. The other is the time to market, which talks to how long does it take the team to deliver new products, solutions and innovations to customers before competitors do so Customers are looking for new methods of doing things that will make their life easier too, hence time to market is a critical metric of measure.

Interview Question 6

If this system were to be built in a fault tolerant way, like when it fails, no one should feel an impact, will that work?

So, the world's moved on a bit in terms of kind of resilience practices around resilience engineering. What the common matter is now, we need to acknowledge that systems will always fail. What do we need to do is to be able to better tolerate failure? This is kind of also describing a fault tolerance. So, if you have a system with 10 features and one feature fails, the whole system shouldn't come down, or if you have a system that interacts with 25 other systems, if one of those 25 systems fail, your systems shouldn't fail. Your techniques and methods preventing them from happening is talking about reducing the failure, which is important at the moment. Particularly the old biggest systems we have kind of big monolithic things.

When something goes down, the whole thing goes down. In today's world, things fall all the time, but you don't notice it because the phase are the masked. So that it doesn't happen to impact you. There's a big focus on reducing reliability engineering and how you engineer things differently.

Systems are expected to fail as no system is immune to failure. However, systems should be built in a manner that when they fail there is little impact to customers. One system failure shouldn't impact all other systems. When one system fails, the functionality should be moved to the next available system automatically. The participants refer to this as resilience practices around engineering. This is basically known as fault tolerance within the technology and innovation space.

Interview Question 7

How would you ensure that your teams are always up to skill, so that they can cope with the new trends in the markets?

So, the first thing we need is time. Firstly, if you don't have time you won't have time to learn and no time. Then when you are able to kind of provide the curriculum that they can go and acquire the knowledge through. So, we use LinkedIn learning, we use Lumix Academy, we are using the AWS stuff, we use the Microsoft subs. So, the organization places a lot of emphasis on training. That's kind of all the online training and conferences too. But you've also got to make sure that people understand that what they are training on is going to be useful. You need to be heavy; you need to have strong tune and your practices need to be defined. For example: what are your practices around software engineering? I mean in the

context of their practices, what skills do you need to acquire and how do you acquire those skills or courses. How that can serve several liability engineering etc.

From the preceding, the organization does support learning; it has gone to greater lengths to ensure that the learning channels are made available to staff members. Learning channels available to staff includes but not limited to LinkedIn learning, using Lumix Academy, AWS, and Microsoft subs. However, two things are critical to keep up with market skills; first one is time needs to be allocated for learning and development then the second one is ensuring that staff members are training for skills required deemed critical. Skills such as software engineering are at the heart of this financial service provider, therefore such practice needs to be outlined to staff members.

Interview Question 8

What sort of leadership style would work in your business unit? What is your role as a leader in your business unit?

So, leaders do several things. I think firstly, they need to set a direction. So, we need to know whether we're going north, south, are we going to conquer that town, that village, etc? I think that's important and it needs to be described in such a way that people buy into it. They understand why we are going in that way and why it's important to do it. What are the benefits of us going in a direction? So, setting directions is crucial. What leaders shouldn't be doing is telling the teams how to get there.

Leaders are expected to set direction, be more visionary in their strategy. Individuals, teams perform better when a leader walks the path with them not just dictate to them what needs to be done and so on. The "why" we are doing this is so important because it creates transparency and eliminate uncertainties. Individuals, and teams involved in a project need to understand the "why", which speaks to the benefits of doing a thing.

We need to be an encouraging autonomy in our strategy. But you can only get autonomy if you've got competence. These things are all linked, so you must be trained, you must be competent in order to get autonomy. But ideally, if it gets to go back to the leadership, we set the direction, the teams then know best to get there in what way are you using what tools or

what kind of records? So that's crucial. But leaders also need to be supportive of their teams. So, then you should be clearing obstacles. So, I'm working for the teams, the teams that works for me, I'm helping them do their job, getting things out of the way, giving them the opportunity to setting the direction, that to me is the primary role needed.

Autonomy is critical within an organization strategy. However, autonomy is function of competency. Leaders set direction of where the organization is going as per objectives outlined, then teams are the best implementors of this strategy. Leader should see themselves as working for this teams not teams working for them then team will feel valued and appreciated to be part of direction set by a leader.

Interview Question 9

So basically, you believe in a leadership as a concept of empowerment?

Command control leadership doesn't even work in the military, by the way and it certainly doesn't work in a bank. You can get people to do things through control for a while. They'll do it because they probably got kids to feed but you'll lose them emotionally and eventually something else will come along the line and they'll leave. Your culture will die therefore. We all know if your culture's wrong, it largely influences leadership because it flows from the top.

An approach such as command and control leadership doesn’t work within financial service providers such as this one. Historically such a leadership approach was deployed at military and it didn’t always work, although it may work to some point. Culture created by leadership is so critical to the survival of every organization else people will be unhappy and leave if they find better opportunities. Culture flows form the top, if the culture is wrong the FSP may experience some turbulence in different units.

Interview Question 10

If you were to change how things operate from your process to action, what would you change and how would you do that?

There are a couple of big things, we need to clearly understand within the context of IT business unit, what we need to be good at and what do we need to earn or what do we need to do versus what we don't have to do. So, if you look at the world in which we operate today, you've got the big cloud providers, you've got Amazon, Microsoft and Google. Their

capabilities, the features, the reliability and security of those platforms are far ahead of anything we could ever dream of building internal to a bank. So, from infrastructural platform as a service layer down, we should be using and procuring services from other people who do it better for us.

We should be focused on working with our business customers to deliver value to the men on the street and to the end customer. We can be integrating other software and we can be building software, we can be maintaining and manning that software which is a whole heap of things we do today that we shouldn't be doing in the future. We continue to do because that's our legacy and you don't just turn things on and off, but in the future that will change remarkably.

Improvements and changes from leadership perspective are around how teams operate. Teams should focus on capabilities that they are good at versus what they are not good at. There are companies like AWS and Microsoft which have certain capabilities. These capabilities should be given to them to run with so that internally teams can focus on what they are good at. The focus of internal teams should be integrating, managing, maintaining software and working with vendors to make systems optimal, and not to compete with what vendors are doing. However, the challenge is that most of the systems are legacy hence internal teams continue to manage and maintain them.

4.1.2 Case Unit A: Resource dependency, Office of CIO of Information Technology

This theme explores and describes the resource dependency of the financial service provider. The interview question is followed by participants' responses. Subsequently, the researcher's comment meant to bring out the study finding is given.

Interview Question 1

Describe the suppliers that you work with, and how are any business processes in your area dependent on these suppliers?

So, the supplies can be put into two broad categories. One is product supplies and the other ones are principally systems integrators and the third are the outsourced processes. Whether

you're outsourcing capability, infrastructural development, the product line is very transactional. So, you know, we're buying a particular product we often to get kind discount if we are buying more, that's a kind of cross transactional relationship and it's strategic.

The system integrators are a key one where you've got to partner with other 3rd parties to work with us to better integrate our own or 3rd party products and to kind of a broaden our ecosystem. The other one is the outsourcing partners where we want them to work on our behalf because we don't believe that's valuable to us or our core competence. They can do it better at a better price point and a bit of reliability and availability. There are three broad categories of partners that we have.

There are three categories of suppliers, namely product supplier, system integrators and outsourced processes. Product suppliers supply organization with products while system integrators usually work with FSP's internal staff to integrate various system components, Outsourced process works on the outsourced services. Suppliers relationships are deemed to be transactional and some are cross-transactional. Transactional is more like when the supplier provides service and get paid for that. Cross transactional is where the financial service provider purchases products off the shelf, and the more they buy the more discount they receive.

If you look at our landscape, we outsource things like end-user computing support to help desks to a third party. It's not a core competence of a bank and not a core competence of IT. We are outsourcing the process of our platform legal stuff to Amazon and Microsoft. They'll draw the patterns for us. We work with system integrators to work with those outsource partners to make sure that the right competencies. As the system integrators, what they do is bring to organizations that we don't necessarily have is to own process, practice, method, kind of resource, kind of flicks the scalability and can experience having worked in previous person with other candidates and then the product stuff. But even in the product world, I think the advent of kind, the big public cloud drive, I think product becomes less and less important over time. But now it's so important.

The FSP's strategy is to outsource services they deem not core to their competency and they believe a partner can do that better that itself. The likes of Microsoft and Amazon are known to have strategies that focus solely on providing capability that businesses will benefit from. Suppliers bring more than a product or a service, what

they bring to the FSP is things such as the process, the practice, the method kind of resources.

Interview Question 2

Describe the criteria used for selecting suppliers? How does the FSP leadership ensure that the suppliers do what's expected from them, including how they perform?

I mean there's financial criteria, performance criteria, on time, on budget, it could be incident criteria, the number of defects and those kinds of things or it depend on the nature of the contract you're going into? But there are very defined criteria that you need to measure, and you would then sit down once a month typically with a partner and you will measure them against the performance against those criteria. And if they didn't perform well, they generally tend to be penalties associated with as well.

This financial service provider defines factors such as cost, performance, budget as well as number of defects as core pillars when selecting a vendor or 3rd party to work with. These criteria help eradicate issues of costs, longer turnaround times, out of budget and defective products. Additionally, all these criteria have thresholds that must be met; otherwise there are penalties imposed if the vendor or the 3rd party is found to be on the other side of the defined criteria.

In terms of doing what you would expect, you would have a contract. Every piece of work outsourced will have a contract associated which will specify the SLA and OLA. Anything to do with that in terms of what they're going to do and when. But that's one way of measuring performance, ticking our contract box is okay to do, but you can still have a bad experience. So, it's important that we have a much closer relationship with our partners that they feel that when they at the bank, they're working for the bank. They're not just transaction in the bank books.

Moreover, the financial service provider, make use of procurement process, OLA's and SLA's to manage expectations with suppliers on various products and services they deliver. The OLA's and SLA's are deemed to be very details to the level of defining who does what when, how and what happens if not done, and this helps to clarify things from the onset. However, OLA's and SLA's doesn't mean you will not have a bad experience, this can still happen, the idea is to ensure that suppliers know they are a partner not just completing a transaction with financial service.

Interview Question 3

How is the current performance with your suppliers and how would you improve it? Maybe you've seen some loopholes after they've signed the contract, how would you improve it going forward?

I think how we manage suppliers typically speaking, particularly our big suppliers, it is okay. I mean they've got teams which phased from the bank, we have people here at an exec level and below who are dedicated to working with the suppliers. There will be quarterly business reviews, there'll be monthly meetings, there'll be even more frequent meetings as well. One thing that you need to be careful of when you work with certain suppliers, and particularly our outsourced supplies, is that the minute you outsource a piece of work, you've got to be very good at defining that work because they will charge you for the work that you've asked them to do. If you tell them or you ask for something else, you will pay more.

Now when you're working in the bank, and ask you to do something as a DBA, I'm not looking into your service catalogue. Many things will be on your desk, but sometimes you are doing me a favour. However, when you outsource a service, you pay for everything. Everything you've missed, you forgot to define turns into a new piece of work and a new bill. So do not outsource if you do not know the answer yet. You need to know well what you in for otherwise you would think you're getting a mega deal but by the time you can measure at the end of the year, you realise that you paid so much extra money that you've miss located yourself.

The relationship with big suppliers works well for this FSP, possibly due to experience factor. Challenges seem to be there while working with medium to smaller suppliers. Dealing with vendors or 3rd party means that the FSP pays for everything because if a scope is not clearly defined this will mean that the supplier will charge organisation extra for every new piece of work required. Basically, there are no favours when working with suppliers. The participants state that one improvement that could be done while planning to work with suppliers is to clearly define the scope of the work before agreeing to terms.

Interview Question 4

Describe any competencies that you cannot do without, that a vendor or supplier has?

Its's typically enterprise architecture because you need to understand the context of banking but also the bank in the markets in which we operate, there'll be solutions architecture because you need to understand how our particular products and services kind of relate to each other. Software engineering is another one. In the software engineering world, you can start arguing, maybe we can start outsourcing concepts, some stuff there.

But generally, if you look at most organizations, particularly banking this day, there's a drive to insource rather than outsource. So, a lot of the big organizations who in the early eighties and the nineties outsource a lot of this stuff and bringing them inhouse because you don't get that level of commitment and longevity and if you're having it outsourced in software engineering. So, anything that you need skills wise that gives your business a competitive advantage those are the kinds of things together with data scientists. So, platforms you can buy from them.

There are capabilities the organisation cannot do without, things like enterprise architecture, this area is important because it gives context to the banking concept and how the markets operate. Enterprise architecture talks to things like enterprise analysis, design, planning, and implementation, using a comprehensive approach always which helps with execution of strategy. However, participant argues that within financial service the drive is to insource skills that are critical as per strategy, skills like software engineering, data scientist roles they cannot do without. Therefore, it is better to outsource areas the strategy doesn't deem critical at all level of the FSP, for example, fixing and replacing printers.

Interview Question 5

What is your influence in sourcing and outsourcing? Like what would be your influence if a team comes to you and say, we are looking for someone who can provide a certain service?

We would work with procurement and procurements got supplies on its books. The first thing is to tell them that we have this opportunity, or we have this problem. We need to have these

kinds of skills and these kinds of services. Who in your books can provide this service for us? They will provide us a list of people or list of companies. We may after looking at the procurement list sidewall realise that there are a few others who are not included on the list. We would work with procurement to get those people listed.

Leadership has limited influence as there are procurement processes to be followed and they do not want to hinder the process. Leadership will only check who is on the financial service provider's book. If there is a company known to have certain competencies required, they will be recommended; however they still need to go through the procurement process and meet all what is required, like all other participating companies.

For example, on the books we would then typically for most pieces of work beyond a nominal venue would go out on RFI, or an RFQ if it's already an existing supplier you want to work with or an RFP if we want you to come and look and evaluate the kind of alternatives in different spots and that whole thing is governed through the procurement process. There are scores, there are weights, there's people who evaluate and at the end there's a whole bunch of segregation and separation of duties in their process as well. So, you as a CIO for SA, you have a large responsibility in ensuring the bank is contracting with the right suppliers.

Part of the core leadership role is to ensure that all participants adhere to process and meet requirements defined. There are no favours for the sake of getting the project, this will derail projects because of supplier mismatch. Therefore, all participating companies will go thing request for information and request for quotes as a way to determine cost and budget as per selection criteria defined. Additionally, Procurement is at the heart of all these processes.

Interview Question 6

Describe what influence you, as a leader, have in selecting a supplier?

Our influence is limited to the point of we can ask them to invite additional supplies into the process. But the way that the scoring and stuff happens and the way that the adjudication process takes place, you have no influence on it. It's all down to facts. So, you have a separate team. If you could go and say, I want to work with a particular company however

there is a separate team who engages with those suppliers to assess their offerings and I'm not part of their team. That team then scores the suppliers and brings the scoring and recommendation to a steering committee. So, part of steering group together with procurement and a few other people involved in the process will go through the scores and select the best supplier. You can influence and but can't influence who gets the business. It's all based on facts and business value proposition.

Findings reiterate that the leadership have limited influence where suppliers or 3rd parties are required to deliver certain capabilities on an FSP project. Leadership cannot influence on who gets business as this process is factual driven, with business value proposition is at the heart of the decisions. Various teams will complete requirements and work with procurement to ensure that requirements are directed to correct participating companies and once this process is followed, then teams bring this to a broader leadership meeting known as Steering Committee, where such requests are discussed and looked at.

Interview Question 7

Besides cost, what are other challenges encountered while working with a supplier/vendor or a third party?

I think there are many, so firstly, I think often the third parties tend to over sell themselves. So, they over sell their capabilities and it's difficult to test someone's capabilities until they start working for you. And then sometimes when you go into contracts, you must protect yourself in terms of performance clauses. Secondly, contractors have a high turnover of staff, so you don't get a lot of longevity in their engagement. As they work with you and they learn and acquire high expertise and they often leave. The quality is sometimes a challenge. Sometimes they also outsource so they have back-to-back agreements with other people. So, you deal with them, but you don't know that they've outsourced to someone else.

There are three challenges identified while working with suppliers; first, suppliers tend to oversell their capability, like what they can do vs what they cannot do. Secondly, suppliers tend to have high staff turnover which turn to introduce longevity problems. Last the quality of the work is sometimes questionable since suppliers can subcontract some work on the project to another 3rd party supplier.

And then you have those kinds of issues that manifest. You only contract with the first line supply. You have companies going in a business, you have companies who've written a deal at a price point and discovered themselves once they've contracted to do the work that they can't deliver the quality of service for the process. So, then you end up with contractual dispute and must renegotiate things or encounter quality problems and dissolve things.

Such problems, example?? manifest if there are subcontracted to other suppliers and this raises issues around pricing where these suppliers find themselves unable to deliver due to costs. Once projects hit budget issues, the quality is then compromised, and suppliers deliver poor quality than promised. This leads to re-negotiations of contracts and disputes around what was initially agreed versus what is delivered.

Interview Question 8

Describe your preference, between international or local suppliers, when awarding supplier contracts.?

The preference depends on the nature of the work. So how big is the piece of work? How risky is it? For example, you're not going to contract a five-man software shop to build core banking system, that's never going to happen. You need to look at the risk profile of the work and based on the risk profile you will decide to go with a particular size of a supplier. But the intent is always to work to domestically where you can, or to work with international companies who have a domestic presence. One wants to avoid and its sort of not always possible working with international organizations who don't have a domestic presence. We can support you remotely or we have to find people that are already in the cases. If you look at a bank's profile, we have some of those, but few and far between. In fact, most of our work is with other South African companies or international companies domiciled in South Africa, but their businesses are in people and capabilities.

There are various factors that determine FSP's choice of supplier; one main reason could be international and local presence. Similarly, things like the size of the firm, competency, resource capacity of the supplier are crucial to FSP's selection process. For example, IBM company operates globally and locally this would be kind of suppliers FSP's are keen on working with.

Interview Question 9

Describe what is working and/or not working with regards to managing contracts and SLA/OLA with your suppliers?

I can't give you an answer because it all depends on the contract that you're talking about. So those things we contract for, we get delivery of. But you get more success when what you are asking for is quite standard. You get less success when what you're asking for is quite tailored. In other words, for somebody to deliver something to the bank, they've got to spend an incredible amount of time with the bank and we've got to collectively shape, that's difficult. When you're just asking for desktop supporters it's simple and basic.

Suppliers thrive when they are tasked to deliver what is standard and simple. Straight forward types of tasks that are not complex and tailored to the financial service provider are easy to deliver. The delivery time is even quicker if it is an off the shelf product.

So, if we're outsourcing the build of new stuff, the support of new stuff tends to be far more complicated because software is very difficult to kind of define in absolute terms from the onset. So those tend to be the riskier contracts and the more difficult ones to manage. When you start talking about quality of software, you can measure quality through defects, but quality is always going to have their attributes.

However, if the requirement is to do something far complex like developing a new software, things get complicated from requirements collection to deployment of the product. Issues of quality cost and time arise when the FSP embarks on such a project, and the only way is to hold these suppliers accountable through SLA/OLA.

Interview Question 10

, Why are you not building the capability within the organisation, for complex tasks that you need to be done?

The intention should be that you need to, but sometimes you can't because the market doesn't have the skills you're looking for or there are insufficient people in the market.

These complex projects require specialised capabilities as compared to buying and setting up a product like a printer. Complex projects require specialised skills and competences, which are not always available in within the FSP suppliers.

Interview Question 11

Why are you not putting clauses in contracts to force suppliers/vendors or 3rd parties to upskill internal staff?

You can do it and in fact we do that. But a lot of these third parties don't really have the right motivation to upskill other people. The minute that people have skills, that piece of work keeps coming back again, so you know, they'll tell me they're going to do that upskilling. I go through the motions of doing it, but that's often a problem. So, the upskilling doesn't quite work the way you imagined it to because the minute you lose that, you kept the links to them. If there is a revenue stream that you go, that's why you want pieces to work that are fine art. And over that I'm moved on that you don't need this long-term kind of link with the surprise, but always easier said than done.

Suppliers like to own their intellectual property, because they run a risk of losing future business, if they have to train the FSP's internal staff. The supplier's business is dependent on their capabilities, which can be a drawback. However, they still agree to upskill the internal staff, although doing it the wrong way. It remains the best method for suppliers to come in and do their work as per agreements and move on after, to avoid back and forth altercations.

Interview Question 12

What change would you bring, given the authority to bring change to the way the FSP do things, especially regarding the suppliers?

I wouldn't enter into big long-term major contracts. I would start off on a small piece of work, maybe engage with several suppliers and give each one a different piece of the work. See how things go. It's far easy to judge who can deliver and who just talk. It's also far easier to kind of switch work to from one to the other. You don't have long term contracts. I would make it a lot to one. Any of these long term, big massive contracts that requires you to be knowledgeable upfront on what you're contracting for are highly risky. By the time you work

at it and realise that something's wrong, it will be difficult getting out of the contract. I would make the contracts much smaller, shorter engagements.

The CIO, as the leader of IT unit, established that short term contracts are the way to go if one is to get desired benefits from a supplier. However, this is not always achievable as it is dependent on the nature of work to be done. On the flip side, long term contracts require critical assessment and day-to-day type of managing. This is because an organization might be stuck with non-performing and non-delivery company for longer period due to the long-term contract. This creates issues and introduces a lot of legal procedures, if the FSP was to get rid of a supplier; therefore, shorter contracts are better.

Interview Question 13

Describe the competition within the banking industry, with respect to the role of your unit? Which financial institutions would you say are doing much better in that regard?

I don't know. I don't have a way of judging who's doing better. I think the others are doing it as much as we do. I mean, how do you wake up doing a thing better? You need insight into how they do things, which I don't.

It is difficult to describe the competition within the industry due to limited exposure to how other FSPs are doing things. However, the participant alluded, earlier, to the fact that within the industry newer FSPs are doing far better due to their use of new technologies as compared to older ones still stuck with legacy technologies.

Interview Question 14

You spoke about legacy systems and hardware, please elaborate further on that?

So, all the big, traditional banks have got legacy systems. However, the smaller banks had the opportunity to do things in the new way. They've got a competitive advantage and you can see it in their costing, their costing is not as high as ours. If you look at digital banks who have everything in the cloud, they have zero legacy and they not have to worry about data centres or infrastructure. They can innovate a lot quicker; they don't worry about the burden and the context we've got online but they don't have a customer base that we do, they don't have the product sets we do. They don't have the legacy and the reputation and more

mobility. So, in as much as they're technically able to do it a lot better, they're also not as big. I don't have the capital; they don't have the people that had the money that I had the customers. So that's one-sided way, I mean eventually things changed.

Older FSPs are in tough economy times as compared to newer FSPs., The older FSPs need to move away from using legacy systems., The newer FSPs are at an advantage because they are start off making use of the new technologies which do not easily break, and skills are available to deploy such innovation quicker. Skills for older technologies are scarce as people are retiring while some are leaving due to the challenges within these environments. Older staff are often forced to re-skill and adapt. Furthermore, the only thing that sets this older FSP apart from others is that it has a large customer base, reputation and financial muscle to deal with challenges around innovations.

4.1.3 Case Unit A: Technology, Organization and Environment, Office of CIO of Information Technology

This theme explores and describes the technology, organisation and environment contexts of the financial service provider. The interview question is, again, followed by responses. Subsequently the researcher's comment meant to bring out the study finding is given.

Interview Question 1

What are the national, external, Laws and Acts which govern and/or affect your business?

I don't know all the laws, but I mean most of them talk around data residency. So many governments are saying that the data processing is being in country. The other one is around obviously personal information and we not allowed to disclose personal information. You've got to secure it if it does leak you will be faced with big compliance issues. But then the other one is around data security, which is kind of quite close to kind of the data processing as well. So that's typically the kind of things that you've got, the security issues associated with that as well. You've got PCI (payment card industry) standards and those kinds of things. So, each country has got its own laws and there's some laws that are very kind of specific to individual countries.

There are three evident key legislations or regulations which govern their space, namely that data must be processed within the country, customer personal information cannot just be disclosed to third parties, and that data must be secured. If the FSP is found to breach such regulations and legislations, then they will face a big compliance issue. Additionally, since the FSP operates in the financial industry, payment card industry (PCI) are some standards they need to adhere to. This FSP operates in various countries and, therefore, it has to also adhere to country specific regulations and legislations.

Interview Question 2

How do you ensure compliance with other country-specific laws? How do you ensure that your business unit is well educated in terms of these laws and the compliance?

We have the in-country compliance officers, first they provide the education and in my team, I don't do any work outside of South Africa anyway. So, if you were doing work from here for Nigeria as an example, you would need someone from Nigeria advising on what you could or couldn't do. In fact, most of the compliance, rules and regulations in terms of what we can, or we can't do we rely on operational risk to provide the guidance. So, they will come and tell us, these are the kind of roads, the land, this is what you can use or what you can't do when it comes to this data, etc. So that's kind of where most of them comes from.

The FSP is setup in a manner that there are positions such as compliance officers, whose roles are to ensure that business units are glued-up, with respect to legislations and regulations. There are internal trainings provided. Since the FSP also operates outside South Africa, it has country-specific compliance officers. Moreover, the FSP has a unit named Operational Risk, which deals with external risks only, and also provides guidance around most of these laws, regulations and legislations.

Interview Question 3

It seems like the compliance unit is mostly located outside the IT unit, please describe how you engage with this specific unit, e.g., for advice regarding compliance.

Risk, governance, compliance, operational, those kinds of people, we do have those capabilities in IT, but they tend to liaise with the staff outside of IT to make sure we do the right thing. So, when there's a new law issued, e.g. when POPI first came out, we have people outside of IT interpreting and then bringing that information back into IT to say, based on what is interpreted or what it means for you guys in IT.

Compliance capabilities are present within some IT individuals. However, since this is not their speciality, they do the right thing and engage with the compliance units. There are processes on how they work together. The compliance tends to help the IT unit to interpret laws such as the Protection of personal information act (POPI act), for example.

Interview Question 4

I understand that Operational Risk is the unit that manages compliance; however, are you also able to identify risks in your area?

Security through data prevention, leakage kind of packages scan the network for that kind of stuff. They check for data leakage through email channels, through FTP channels. Security implements some of those operational risk policies and data leakage policies.

Risk is part of every business; the unit has not really identified tangible risks to the FSP as they have specialised unit that deal with such to ensure that risks do not happen or are minimised. The unit supports the entire FSP, including the information security unit that ensures that data is encrypted and that no personal information like identity number can go outside the FSP.

Interview Question 5

If there are fines and penalties, how does the FSP deal with such? For example, if the banking systems are not available, are there any financial penalties imposed, where services are not available?

No, IT is not a profit centre, so it doesn't, but if the bank would have to pay the fine, it would be South Africa market paying the fine.

Whenever there are fines to be paid by the FSP for bridge of certain laws, regulations and legislation like availability of systems or data leakage that took place, a fine is paid by the FSP at a business market level and not by the IT unit. The IT unit just enables businesses.

Interview Question 6

As a leader, describe the part you play when it comes to compliance.

We all know what internal compliance training is. Money-laundering stuff and we monitor who has and hasn't done the training.

The FSP's business units deal with internal compliance, while Operations risk deals with external risks. Internal staff are trained on things like money laundering.

Interview Question 7

Describe actions or steps are taken against employees who do not comply with internal compliance, for example, the money laundering policy.

If someone violates the policy, the issue will go through investigation and disciplinary procedures in the back. They must look at the facts of the case to see if what happened was intentional or not intentional. What does the data, what is the consequences for the organization, etc?

There are always compliance officers to help internal staff to understand policies and compliance. However, if an individual is found to have bridged regulations, legislations and laws, there is an investigation to be done and consequences handled accordingly.

Interview Question 8

How would you to describe digital transformation?

So digital transformation in my view is re-inventing your business. It's not digitalization of existing processes. It takes existing processes and really looks at the process almost through the eyes of the customer and how do I transform this process completely to be more customer

centric or deliver more value to the customer, whatever the case may be. That to me is digital transformation. So, automating something that was done manually is not digitization.

Digital transformation is defined as a method to take existing processes with the eyes of the customer and transform these processes to be more customer centric and deliver more value. The FSP argues further that automating something that was done manually is not digitization.

Interview Question 9

How do you think this financial service provider is doing, digitalization wise?

I think everyone's trying to do it and some are doing better than others. Everybody's doing everything. So, they're doing all three categories. If you look at what we're doing around marketplaces and ecosystems, it's completely transforming the way we look at banking. So that's digital transformation. We're also moving a lot of processes out of the branch onto the app. That is digitalization. We take away paper and we scan things and we make an electronic list, you know, digitization. So, so we're doing everything. We're not done with any of the things. In fact, the digital transformation is clearly the hardest thing to do, and that's why a lot of effort, energy and focus is going into.

The Financial service provider's goal is to move into the phase of digital transformation because technology has evolved and so are the ways of doing businesses. For example, marketplaces and ecosystems, are completely transforming the way banking is done. Financial service providers are moving most capabilities from onsite premises to applications which customers can access using their mobile devices. They are doing their best to take away paper while simplifying banking with technologies of today. However, the FSP state that digital transformation is the hardest thing to do, hence there is a need for the present study to give some insight into the concept.

Interview Question 10

What does digital mean to people who are over 60 years, 65 years who are used to transacting with face to face person not machines and applications?

The bank book continues to have branches for the foreseeable future, relationship managers and there is still a number of branches and retail banking in this country will be branch-based for a long time. What we are trying to do is to move a lot of the work out of the branches. It's cheaper. We always acknowledge that some customers wanting to work with a relationship manager and branch manager and that will be there for quite some time yet, but it's more expensive to go to the brunch. If you transact in the branch vs transacting on the app, there is a magnitude difference. So, we need to spend a lot of time educating our customers to talk to them around what you can do. They will always be things that you want to go to the branch for if you're looking for advice, you would get advice from a call centre. That may change in time, but I think you'll see the nature of the branch is changing. We have a foreseeable future and that's fine.

The organisation is trying hard to ensure that customers also understand that going to a branch is much expensive and branches operate on certain time schedule while mobile devices have capabilities to give them access to financial services 24hrs a day. However, the FSP acknowledges that branches are there due the fact that it still has a fairly large older generations of customers who prefer to go to these branches. Thus, the FSP will not do away with branches entirely. Additionally, there are relationship managers available via telephones to help older generation customers to do their banking without visiting these branches. The branches will continue to exist for a long time while mobile channels and call centres remain forms of introducing financial services digital transformation.

4.1.4. Case unit A IT capability study findings

This subsection puts together the study findings on the Financial Service Provider's Information Technology Capability

Case unit description

The case unit A is more responsible for acquiring and managing products, building products, working with customers to build information technology products, operating, and securing these products. This unit basically provides all these capabilities to other FSP business units. The unit provides a universal banking capability, and this is delivered at various levels of the financial service provision.

Business capability challenges

Key challenges include the complexity of banking with relatively old technologies (legacy systems) which results in high costs. Old technologies need high maintenance or replacement. Old technology breaks easily and timely changes are needed to mitigate this.

Relevant skills are a challenge, the FSP is addressing this challenge by bring in Graduate programs and resource training of newer staff. Skills are a key challenge within this industry as a lot of experienced people are retiring and immigrating, which adds to the shortage of capabilities required.

Another capability challenge is around organisational culture. Although the industry is evolving, people are still used to old way of doing things. Today's systems require new skills, new thinking and new way of doing things. The world has changed, there is thing like software as code that has changed how infrastructure is deployed as opposed to traditional way of doing things.

Competences required

Competences required within financial services tend to be more of software engineering type. Software engineers have more impact due to the need to change and make things more agile. The financial service provider, case unit A, currently is 42% engineers and 58% non-engineers competency demographic, and this is a problem. The case unit believe it needs more of engineering type of individuals as software engineering is a trend.

Specialized roles

Engineering capabilities required are classified as part of software development world with roles such as solution architects, software architects, database administrators, network engineer's software developers and so forth.

Measuring performance

Measuring or evaluating performance capabilities namely availability of systems and time to market. Availability of systems talk to how reliable are systems for customers to transact at any time with little possibility of downtime. The other is the time to market, this talks to how long it takes the unit to deliver new products, solutions and innovations to customers before competitors do so. Customers are looking for new

methods of doing things that will make their life easier too, hence time to market is a critical metric of measure.

Systems design

Systems failing; the impact on customers and on other systems. There is not enough fault tolerance within the technology and innovation space.

Keeping up with trending market skills

The FSP supports learning and has gone to greater length to ensure that the learning channels are made available to staff members. Learning channels available to staff includes but not limited to LinkedIn learning, we use Lumix Academy, AWS, Microsoft subs. However, two things are critical to keep up with market skills, first one is time needs to be allocated for learning and development then the second one is ensuring that staff members are training for skills required deemed critical. Skills such as software engineering are at the heart of this FSP; therefore, such practice needs to be outlined to staff members.

Case unit leadership style

Leaders should set direction, be more visionary in their strategy. Individuals and the unit perform better when a leader walks the path with them not just dictate to them what needs to be done and so on. The “why” we are doing this is so important because it creates transparency and eliminate uncertainties. Individuals and units involved in a project need to understand the “why”, which speaks to benefits of doing a particular thing.

Autonomy is critical within an FSP strategy. However, autonomy is a function of competency. Leaders set direction of where the FSP is going as per objectives outlined, then units are the best implementors of this strategy. Leader should see themselves as working for FSP not units working for the leader. When this happens, the units then feel valued and appreciated to be part of direction set by a leader.

Leadership empowerment

An approach such as command and control leadership does work within the FSP. Historically, such a leadership approach was deployed at military and it didn’t always work, it will work to some point. Culture created by leadership is so critical to the

survival of the FSP, else employees are unhappy and leave if they find better opportunities. Culture flows form the top, if the culture is wrong the FSP will experience some turbulence in different units.

What Case unit A would do differently or change

Improvements and changes from leadership perspective are mostly around how business units operate. Units should focus on capabilities that they are good at versus what they are not good at. There are companies like AWS, Microsoft, and so forth, that owns certain capabilities. The capabilities should be given to these companies to run with so that the internal units could focus on what they are good at. The main focus of internal units should be integrating, managing, maintaining software and working with vendors to make systems optimal, and not to compete with what vendors are doing. The challenge is that most of the FSP systems are legacy, hence internal units continue to manage and maintain them.

4.1.5. Case Unit A Resource Dependency Study Findings

This subsection discusses the study findings from Case Unit A of the financial service provider with regards to resource dependency.

Suppliers and vendors

There are three categories of suppliers, namely product supplier, system integrators, and outsourced processes. Product suppliers supplies the FSP with products, system integrators usually work with the FSP's internal staff to integrate various system components, and outsourced process suppliers deal with any outsourced services. The FSP and the Suppliers relationship are deemed to be transactional, with some being cross transactional. Transactional is more like supplier provide a service and gets paid for that, and cross transactional is where financial service provider purchases products off the shelf. The more they buy the more discount they receive.

The FSP strategy is to outsource services deemed not core of their competency and it believes a partner can do that well than the FSP itself. The likes of Microsoft and Amazon are known to have strategies that focus solely on providing capability that businesses benefit from. Suppliers bring more than a product or a service, what they

bring is that what the FSPs don't necessarily have - things such as process, practice, and method kind of resources.

Suppliers and vendors selection criteria

The financial service provider defines factors such as cost, performance, budget as well as number of defects as decisions criteria for selecting a vendor or 3rd party to work with. These criteria help eradicate issues of costs, longer turnaround times, out of budget and defective products. Additionally, these criteria have thresholds that must be met, otherwise there are penalties imposed if vendor or 3rd party is found to be on the other side of the defined agreement.

The FSP, like many organizations, makes use of procurement process, OLAs and SLAs to manage expectations with suppliers, on various products and services they deliver. The OLAs and SLAs are deemed to be very details to the level of defining who does what, when, how as well as what happens if expectations are not met. This helps clarify things from the onset. However, OLAs and SLAs do not mean that bad experiences do not happen. The idea is to ensure that suppliers know they are a partner, and not just completing a transaction with the financial service provider.

Relationship with vendors and suppliers

The relationship between big suppliers and the FSP is working well. Experience between the two is the driving factor behind the successful relationship. The relationship between the FSP and the smaller to medium suppliers has challenges.

Dealing with vendors or 3rd party means that the FSP pays for everything and if a scope is not clearly defined, it means that the supplier will charge extra for every new piece of work required. Basically, there are no favours when working with suppliers. The one improvement that could be done while planning to work with suppliers is to clearly define scope of work before agreeing to terms and conditions.

Suppliers and vendor competencies

There are competencies the FSP cannot do without. These include enterprise architecture; this area is important because it gives context to banking concept and how markets operate. Enterprise architecture is characterised by enterprise analysis, design, planning, and implementation. A comprehensive approach is followed at all times, which helps with the execution of the FSP strategy.

There is a drive to insource skills that are critical as per strategy. Skills like software engineering, data science are a necessity for the FSP. Therefore, it is better to outsource areas the strategy doesn't deem as critical at all levels of the organisation, for example, fixing and replacing printers.

Leadership Influence with regards to insourcing and outsourcing

Leadership has limited influence as there are procurement processes to be followed and the leadership does not want to hinder this process. Leadership only checks who is on the financial services provider's database of suppliers if certain competencies are required. The leadership only recommends the supplier to go through the procurement process, if the supplier meets all requirements relative to all others participating.

Part of the core leadership role is to ensure that all suppliers and vendors adhere to process and that they meet the requirements defined. There are no favours for the sake of getting the project as this will derail projects if there is a supplier mismatch. Participating suppliers request for information and request for quotes as a way to determine cost and budget as per selection criteria defined. Additionally, procurement is at the heart of all these processes.

The FSP leadership, known as steering committee, meets to assess and evaluate each supplier against the needs and requirements.

Supplier and vendor challenges

There are three challenges identified while working with suppliers, first they tend to over sell their capability like what they can do vs what they cannot do. Secondly, the suppliers tend to have high staff turnover, which turn to introduce longevity problems. Lastly, the quality of the work is sometimes questionable since they often subcontract some work on the project to another 3rd party supplier.

The problems manifest if the suppliers subcontracts other suppliers. This raises issues around pricing where these suppliers find themselves unable to deliver due to raised costs. Once projects hit budget issues the quality is then compromised, and

supplier delivers poor quality than promised. This leads to re-negotiations of contracts and disputes around what was initially agreed versus what is delivered.

Supplier and vendor geographical preference

There are various factors that prompt the FSP's choice of supplier. The FSP is an international financial service provider with aspirations to operate further, globally. Thus, the FSP is likely to work with internationally big sized suppliers like IBM, who also have presence locally.

Complex projects capability

Complex projects require specialised capabilities as compared to buying and setting up a product like a printer. Complex projects require specialised skills and competences which are not always available in the FSP supplier database.

What the FSP would do differently or change when dealing with vendors and suppliers

Short term contracts are the way to go if one is to get desired benefits from a supplier. However, this is not always achievable as it is dependent on the nature of work to be done. On the flip side long term contracts require critical assessment and a day-to-day type of managing. This is because an organization might be stuck with non-performing and non-delivery supplier for longer period due to the long-term contract. This creates issues and introduces a lot of legal procedures to get rid of supplier by the time the FSP realised this is not working, as a result shorter contracts are preferred.

4.1.6 Case unit A Technology Organization and Environment Study findings

This subsection discusses the Technology Organization and Environment contexts findings of the financial services provider with regards to.

External laws affecting the FSP

There are three key legislations or regulations that govern the FSP environment. These are that data must be processed within the country, customer personal information cannot just be disclosed to anybody, and that data should be secure. If the FSP is found to breach such regulations and legislations, then they face a big compliance issue. Additionally, since the FSP operates in the financial services industry, payment card industry (PCI) are some of the standards they need to adhere

to. There are other country-specific regulations and legislations that the FSP adheres to, since it also operates in various countries.

Compliance

There is a compliance unit with officers who help internal staff to understand policies and compliance. They also do trainings on legislatures and regulations. If employees are found to have bridged internal regulations, legislations and laws, there is an investigation to be done and consequences handled accordingly.

The following sections give the findings from the rest of the FSP case units. To decrease the volume of the thesis, only the findings from case units B through H are discussed. That is, the interview questions as well as the response excepts are not shown but the findings only. This omission is meant to keep the thesis within the allowed volume. Notwithstanding that, it is worth noting that a similar semi-structured interview, following the same interview questions and schedule, were carried out to study these case units.

4.2 SECTION 2: CASE UNIT B STUDY FINDINGS

This section discusses findings from **Case Unit B: Cloud Engineering Practice** business division of the financial services provider. The discussions are done per theme. A theme and a subtheme are synonymous with a study objective and subobjective, respectively.

4.2.1 Case Unit B: IT Capability, Cloud Engineering Practice

This subsection discusses the findings from **Case Unit B: Cloud Engineering Practice,** a division within a financial services provider, with regard to its IT capability.

Case unit description

This case unit provides technical expertise to transform legacy technology (mainframe) to leverage on cloud computing to achieve the FSP's strategy.

Case unit challenges

The unit has defined processes, for example, concerning local and international partners. The unit ensures that legal considerations are made when contracting services, acquiring and managing the utilisation of software's. To this point, legal constraints regarding security and data protection when adopting could computing are some of the challenges identified. There is an issue when looking to transfer data to other countries. Certain categories of data, by law, are not allowed to cross borders. Although common around the world, South Africa does not have legislations that protect the transfer of information.

Measuring performance

Performance management is important, particularly in the financial services space where technology is critical to business outcomes. There are standards and policies with which performance is benchmarked against, including new methodologies. Capabilities are measured on three dimensions namely, technology, process and people. These are based on international best practices like cloud computing adoption.

Skills and competences required

Financial service providers are in interesting and challenging times, where technology has a large influence on customer experiences. Cloud computing (infrastructure, software, middleware, hardware and software) allows the FSP to do this at speed and scale. That is, there is a high reliance of technology platforms, and these platforms have to be integrated with the global financial systems. This sometimes means that the FSP needs relevant skills and capabilities. It is important to be selective of the technology the FSP invest in, as there are many skills and technology alternatives. FSPs need to have more information about their customers than ever before. Therefore, it needs to link technology competencies and decisions with the customer need to support a positive customer experience.

What the case unit would do differently or change

Given the opportunity to do things differently, strategy needs to be pursued with a degree of discipline. Transforming and changing direction is dependent on the ability to change the FSP organisational culture. For example, organisational culture that supports central decision making undermines the need for autonomy of units to

make optimum decisions. This means that changing a monolithic system, developed over years of integrations, is a challenge. The unit needs to be given the latitude/autonomy to see out a project end-to-end, including engaging with senior executives from other organisations, which has proved to be effective. The financial service provider needs to recruit some of the best technologists, if it was to adjust working processes to achieve better business outcomes.

4.2.2 Case Unit B: Resource dependency, Cloud Engineering Practice

This subsection discusses the findings from Case Unit B: Cloud Engineering Practice Resource, a division within a financial services provider, with regards to its resource dependency.

Suppliers and vendors

The FSP has a significant reliance on 3rd parties and they are integral to its operations. This is a common practice within the industry, with inter-organisational collaboration. Working with 3rd parties leads to adoption of best practices. The FSP's intent is to use external capabilities and internal knowledge to customise unique elements.

The FSP reduces the risk of working with 3rd party non-delivery by going through a phase where potential partners demonstrate their capabilities prior to contracting (known as proof of concept – PoC) them. The challenge is adopting the standard product without customising it, as it is difficult to find one solution for every scenario. However, customising comes at the cost, as some 3rd party do not maintain the customised elements. Therefore, this raises the need to maintain internal skills as well. The development of competitive internal skills and competencies, which units take pride in, is imperative. There is a need to have a pool of skilled individuals to continue maintaining the customised systems. This implies that 3rd party partnerships should be considered as a strategic decision.

SLA's with suppliers and vendors

Management of service levels are critical in 3rd party relationships. In the financial sector where systems need to be available 24/7, this level of customer experience performance requirements is passed on to partners. For example, mobile

applications are common in the financial service industry and customers have become expectant. The investments made in new technology (cloud computing), have enabled the FSP to be recognised as an industry leader. This means there is a maturity in processes and consistent quality. The ability to recover from systems failure is also an important performance measure for contracting with 3rd party partners. Tolerance of failure is an important mindset required to make this relationship work.

Decisions with regards to insourcing/ outsourcing

There is a combination of insourcing and outsourcing in the FSP. Some systems/solutions are better built internally than externally. Decisions are made considering two key factors, the effort required and the time to take the product to market. Decision is made based on what is more critical, speed or quality. Internal processes (and the associated cost), at times, may take longer than the opportunity in the market.

Supplier and vendor challenges finding

The process of bringing on board a 3rd part can be complex, which means that the FSP does not start the process unless it is sure. Ensuring that there is an accountability structure is critical to success, especially since a significant part of the IT budget is spent via partnerships. Outsourcing may also result in loss of motivation from internal employees, because external companies do not always have the FSP's best interests. It is important to align culture and values when selecting a strategic partner.

Relationship with vendors and suppliers

Part of the strategy, that is trending in the market, is to endear the partner's customer. The nature and size of the interactions determines the details of how easy it is to enter and exit partnerships. With strategic partners, the FSP becomes part of the organismal norm.

The customer is not inclined to whom they consume the service from, whether one uses 3rd party vendor, customers are interested the service that they receive. Customers do not differentiate between the FSP and its service suppliers. When the

organisation and its partners have an integral relationship, then this is even more difficult to differentiate.

4.2.3 Case Unit B: Technology, Organization and Environment, Cloud Engineering Practice

This subsection discusses the findings from Case Unit B: Cloud Engineering Practice, a division within a financial services provider, with regards to Technology, Organization, and Environment contexts.

Case unit structure

There are 7 specialists in cloud computing, with each focusing on a specific business portfolio. The rules applied are aligned to agile at scale and modern software development processes.

Description of competition within the industry

The industry is very competitive, with cloud computing being an emerging skill. The cloud computing skill is in demand. This is made worse by the proliferation of the large cloud providers, making it a global phenomenon. Existing specialists often are not willing to transform their skills. The regulator of the industry is moving slower than the pace of technology in terms of cloud computing, which is an additional source of complexity. While the shortage of skills is an issue in South Africa, it may be more acute for other countries on the continent. Cloud computing is pervasive as a technology practice, even large organisations are responding positively.

Compliance finding

Compliance to regulation is always an imperative in the financial services industry. These regulations are embraced as risk mitigation interventions, albeit that regulators are still catching up to the technological advances.

Understanding of digital transformation

FSP’s employee’s perception around digitisation has been reduced to job losses. However, this should be understood as an evolution no different than the ones that have come before. Cloud computing is one example of digital transformation. It reduces user-owned hardware dependence and increases subscription cloud services.

4.3 SECTION 3 CASE UNIT C STUDY FINDINGS

This section discusses findings from **Case Unit C: Business Design Practice,** another division of the financial services provider. The findings are discussed per theme and subthemes. A theme is synonymous with a study objective.

4.3.1 Case Unit C: IT Capability, Business Design Practice

This subsection discusses the findings from Case Unit C: Business Design Practice, a division within a financial services provider, with regards to its IT capability.

Case unit description

This unit is tasked with the design of technology and practice. What that means is that the unit looks after the technology standards, the guidelines, and the tools that need to be done for design.

Case unit strategy

The unit strategy, from a design practice perspective, is that whenever they design what is known in the design industry as a user experience strategy, first thing is to understand:

- What the user needs are?
- What the business goals are or the business vision and mission for the group is as well as the technology capability.

Measuring performance

Group design capability responsibility is to ensure standardization, consistency across business units and across the country. There are key performance indicators in place for adoption of system designs. All business designs that are created make use of key performance indicators in place as part of the strategy that managers should ensure adoption.

Skills and competencies required

Business design practice unit typically look to hire individuals with skills such as content writers and service designers, basically people who have experience and skills in systems design. The individuals should be able to investigate the technical capability of the solution and understand where technology is today.

Role of leader with regards to culture

Culture of not sharing information is not encouraged in the unit as it introduces working in silos. This makes employees feel like they are not part of the unit. Leadership should encourage the culture of sharing, contributing, and ownership.

Business design practice unit aspires to create a culture of transparency where everybody is involved in decisions. The leader should be able to sit down with people to drive the mandate of the unit and the FSP's.

What the business unit would do differently or change

Based on experience within the unit, it is key that strategy and design strategy needs to be run from top down. Senior CIOs needs to have knowledge of what design practice is about. The design practice maturity model outlines a number of things that should be followed. People should not only speak about it and forget to apply it.

4.3.2 Case Unit C: Resource Dependency Business Design Practice

This subsection discusses the findings from Case Unit C: Business Design Practice, a division within a financial services provider, with regards to its resource dependency.

Case unit risks identified

The financial service provider's IP (intellectual property) is at risk because the design services unit is too dependent on third parties. Although, the unit is now taking some steps to ensure IP is protected. Additionally, the unit has ensured that they fast track approvals of hiring senior staff to mitigate the risk should the third-party leave tomorrow.

Decision with regards to insourcing/outsourcing

Outsourcing within the unit decision is due to the skill shortage. The process to hire skilled staff to do the work takes longer and business units cannot wait as they have objectives to fulfil. Vendors are currently driving most of the projects due to the skill shortage issue of staff that have capabilities to deliver required work. However, there are plans to bridge the skills gap.

Business unit supplier and vendor challenges finding

The FSP's business design practice unit is a new trend in South Africa, and thus one of the main challenges is that there are no established standards around this area and its associated skills. Therefore, vendors take advantage of this fact to over charge FSP's.

OLAs/ SLAs with suppliers and vendors

OLAs and SLAs is an internal process, driven by human capital, to define roles, skills matrix as well as the level of education required. Therefore, every vendor resource should comply with the defined process and its mandatory requirements of skills and qualifications before the vendor can bring in the required resources., The process is owned by a design council within the business unit. Utilizing business design practices, this process is then applicable to geographic where the financial services providers do business.

Systems design

Business design practice unit shouldn't re-design, banking product required, from scratch. . There should be a standardized template that conforms to international standards, and the most unique thing in most cases should be different colours matching the geographical location of the financial services. However, functionality and layout should be standardised and adhered to maintain uniformity across countries. The look and feel of the FSP systems should be the same.

Competitiveness within the industry

A clear strategy is key to helping the financial service provider to remain competitive within the environment they operate in. Today's environments require clear strategy for a business to succeed; the strategy should be available and understood by individuals at all levels, from receptionist to top management. The strategy should outline what the FSP aims to achieve in year 1,2,3 and so forth. However, one other thing that financial service is creating as part of their strategy to remain competitive is to introduce things like the Graduate programs and train individuals to ensure the financial service remain competitive and armed with the required new skills. However, it seems that there are many strategies introduced at ones, which is not good for the FSP.

Case unit role with regards to legislation / laws

Adherence to standards and compliance with certain aspects of designs, especially when dealing with different countries is key. For example, accessibility is a key requirement for any design projects. There are people with impairments, visual impairment, hearing impairment, and walking disability, these individuals have to be accommodated and taken into considering during design phase. Additionally, cultures of other countries also should be taken into cognizance since cultures differ.

Compliance

The FSP is planning to introduce something called a playbook to drive the issue of compliance within the business design practice. . The playbook will address things like design culture and a design strategy for the FSP, and things like pricing, transparency and accessibility will be the key elements of the playbook. The playbook is a way to enforce compliance so that every new design, whether executed internally or by third party will comply. This will ensure that all designs follow a specific standard, per request by each business units, locally or internationally.

Case unit level of digitization

The financial services provider is the king amongst the kings of financial service providers within South Africa and internationally. However, only about 30% of all processes are digitized, which means about 70% are not. Financial service providers should capitalize on digitization to make business processes less tedious. Manually processing is not appealing to potential customers, therefore, digitization is key.

The environment the FSP operates in requires fully digitized services not half digitised. This creates issues due to the fact that other financial service providers will attract most customers if their processes are automated and digitalised. Customers are looking for agile services that are delivered in a timely manner not a percentage of agile services.

4.3.3 **Case Unit C: Technology Organization and Environment,** Business Design Practice

This subsection discusses the findings from **Case Unit C: Business Design Practice,** a division within a financial services provider, with regards to Technology Organization and Environment contexts.

Competitiveness within the industry

There is a fierce competition amongst FSPs. A clear solid strategy is key in helping financial service provider remain ahead and competitive within the environment they operate. Today's environments require clear strategy for a business to succeed, and the strategy should be understood by indivuals at all levels, from receptionist to top management. The strategy should outline what the FSP aims to achieve in year 1,2,3 and so forth.

Role with regards to legislation / laws

Adherence to standards and compliance with certain aspects of designs especially when dealing with different countries is imperative. For example, accessibility is a key requirement for any design projects because accessibility means the community have access to financial services, be it locally or internationally. The community includes people with impairments, visual impairment, hearing impairment, and walking disability. Additionally, this means that cultures of other countries should also be taken into cognizance due to culture differences that exists.

4.4 SECTION 4: CASE UNIT D STUDY FINDINGS

This section discusses findings from Case Unit D: Backups and Storage, a business division of the financial services provider. The discussions are done per theme and subthemes. A theme is synonymous with a study objective.

4.4.1 **Case Unit D: IT Capability,** Backups and Storage

This subsection discusses the findings from Case Unit D: Backups and Storage, a division within a financial services provider, with regards to its IT Capability.

Case unit description

The case unit is responsible for data storage and backup for various functions of the FSP business. Data drives a lot of business decisions for FSPs; thus, this unit is very crucial. The unit ensures that there is adequate infrastructure to store transactional, operational, and management data. Data should be available on-demand. Additionally, the unit ensures that legislations, standards and Acts governing data are complied with and adhered to.

Case unit strategy

With the personal and private world of this FSP, the two functions have separated sensors and their processes are segregated. The unit strategy is to collapse the current infrastructure to just have economy of scale and working across multiple technologies. Furthermore, a few years ago the financial service provider had a need for flash storage, and they bought storage from relevant suppliers. The flash storage is now available at a cost. The plan is to consolidate single vendor and a single platform and ensure that they get the best cost vs supportability and maintainability values. Also, considering the cloud journey, storage is not entirely moved to the cloud.

Case unit cloud view and cost

Backups carry almost 15 % of the data cost centre, which is approximately 50 % of the floor space, and this is an expensive exercise. The backups don’t take a lot of power; however, they take a lot of space and according to the cost model, the FSP incurs cost for data centre that is the equivalent of what a mainframe on the same floor would have cost. Furthermore, the plan is to focus specifically on backup and how they are enabled in the cloud. There are lots cloud tools available for use and this is something that the FSP considered to cater for all complexities within the backup and storage world.

There are more tools required to move the FSP business to the cloud on the backup side and some are proprietary, which costs money. The process to move backups to the cloud is identified as the most expensive technology for the FSP and the key strategy is to reduce the footprint.

Case unit engagement process

The units have a catalogue that it uses to order storage from its business partners. The backup and storage unit describe these services as standard. Once service is identified then the unit ensures that service requested is delivered to the internal business partners.

95% to 98% of all services that other functions order from the unit are qualified as standard services, which are predefined and deployed accordingly. The exceptions apply if the required is not a standard service. The unit engages with partners using cloud architects and technology owners to see if a solution can be crafted. Additionally, data storage has lot of policies to deal with and part of strategy is to reduce these policies so that the unit has alternatives way to do things.

Case unit key applications

Currently the FSP makes use of the remedy applications to service their internal customers' requests. This is where an internal business unit logs a request for a service. All requirements for services, change, problem and incident management happens through that mechanisms, remedy application. The application is critical to ensure that interaction with internal business partners is key. As for the IT unit, consistent availability of infrastructure and tools such as CMDB (central management database) helps manage the storage technology.

For the storage and backups unit, remedy is a secure application for the day to day functions and managing storage tools. Infrastructure and analytics advisers are used in that space. The tool can incorporate storage network, block storage, object storage as well as storage array, into a single view.

Before the new tool, infrastructure and analytics advisers were required to calculate the storage manually. The previous mechanism which was used in the unit was more manual and didn't work well because the process included physical calculations. This was very cumbersome, and this shows that the technology improvements have an impact on the unit's performance. Such tools are costly as they require licensing for use.

The backup component of the unit has a tool called Command Suit, which is used to run backups for various systems. The backups have specific periods for when they

are supposed to run. The tool is not as intelligent as it should be as it is unable to tell if the backup ran successfully or not. All the tool does is to kick off script to run backup, if this fails there is a manual process required to run backups to ensure that backups that didn't complete successful are executed again. The supplier working with the FSP is working on improvements regarding this tool and hope that in future the tool will be more advanced.

Challenge with command centre tool

Command centre is the tool used in the case unit's business unit. This tool is important in backup because of its safety nets for audit queries. The tool enables the unit to demonstrate data restores, if required to do so for regulatory purposes. Regulations play important role in the business of today especially within the banking sector. However, the tool is not user friendly as it doesn't not have much intelligence. Ideally the FSP would like the unit to get to the point where there is an interface where an individual can log a query on their own without hustles of access or restrictions.

Measuring performance within case unit

There are multiple facets used to gauge performance. The FSP makes use of scaled agile framework (SAFe) which promotes alignment, collaboration, and delivery across large numbers of agile units. The first thing for the unit to understand is what looks like good and what does success look like; those are measurement for performance in the unit. Main thing is to define what is good and what is complete, for the unit to understand the expectations regarding the required performance as per key performance indicators (KPI).

There is a backlog system where items that are not done stay in the backlog and items that are done are moved off the backlog, this is done in stages as per scaled agile framework (SAFe). For something to be regarded as done, it has to be removed from the backlog list and the quality of the work must not make the unit to re-do what was marked as done.

Improving business processes

The improvement required within this FSP, especially for the case unit, will be driven within the Infrastructure Global Standard Council. This is the FSP's committee that approves products used. The process seems to have lost its credibility because tools

and products that proved to be a challenge are approved for use without much consideration of the current state. The committee thrives on industry a standard which makes it easier for products brought in to work well per the requirements, but it is not the case currently.

The Infrastructure Global Standard Council (IGSC) remains a pain for this case units. The unit argues that there shouldn't be committees that are just tick boxes. Standards committees are there to ensure that all technologies brought into the financial service provider adhere to standards not to bypass standards. If Standards are ignored, most CIOs turn to introduce the concept that says you build or bring in a product. The product is run without considering standard, hence how years down the line, some business units' technologies are deemed non-complaint as they do not meet certain set standards.

The FSP needs to scale down to at least manageable products as there are lots of options currently available. Most of these options do the same thing and reducing duplicates can save costs and help the FSP to be more functional.

The process of clearing what the FSP requires, in terms of storage, is not good and this is another process that needs to be improved. Imagine keeping files for former employees that left many years ago, like 3 years as an example.

Data management is another process that needs to be improved. There are tools like office 365 which comes with 1TB replicated storage, and a user can also opt to store files on the Hardrive. However, due the complexity that exist, data issue remains one key process needing to be improved.

Case unit skills and competencies required

The case unit is rich with skills and competencies required. And this is evident from the fact that there were less system issues experienced in the past year. Technical skills to operate, deploy and manage storage and backups technologies are key to stability of these environments. Moreover, critical skills which are required to build the FSP are not only limited to doers but also to individuals who are creators. The FSP has an annual review period to asses staff skills and competencies. Soft skills like attitude and ability to collaborate and listen play a huge role.

The FSP thrives on collaboration, so the silo approach doesn't work well owing to the setup of the financial services structure. Units work together to achieve a goal, and such requires a team player type of individuals who can integrate and work well with others.

The unit keeps sending its staff to various training, e.g., cloud, to develop further. However, staffs returning from these trainings do not always contribute much to the unit. Continuous training of staff is part of the FSP strategy. It is important to match training with type of roles needed within the unit in order derive value from the training attended.

Methods of working

The best projects management methods recommend that units should work closely together on projects to achieve success. The challenge with isolation of units is that the other unit just tend to be passive during the project phase and only to give approvals on certain artefacts to be implemented, and this creates problems in a long run. The units must be involved to understand the project and scope at hand.

Individuals should not be concerned about getting degrees only but the degree one gets must accompany a certain skill. Some degrees become useless in the next four years after being attained due to the speed of change in technology. The culture of this FSP should be to focus on ensuring indivuals spend less time studying to acquire certificates in different technologies as opposed to studying a four degree that becomes irrelevant upon completion.

Younger people today do not believe in degrees but believe in knowing the work as they play with technology daily, they study as they go. This means most individuals opt for short courses or technology certification than a 4-year degree, as an example. Often, posts that are advertised with these degrees as requirements are filled by indivuals with old knowledge not new knowledge learnt by youngsters though breaking and fixing technologies in that home garages.

Specialised skills required

The view is that indivuals within a specific unit should only study courses or do trainings related to what they do as part of their job. It is considered a waste of time

to go study courses like artificial intelligence if the individual is only focusing on a specific technology than what is being studied.

Cross skilling is of value if it is done with a benefit in mind, for example a storage engineer can cross skills to be able work on servers as well, because storage and server teams work hand in hand. Cross skilling, in a form of obtaining a skill that is related to an individual current role, is advisable. This would be a skill one can use immediately, unlike cross skilling to something one will never get to practice.

Cross-skilling should serve a purpose not just for an individual obtaining an additional skill they will never use. Some individual's cross skill for the sake of obtaining a certificate in a different technology, possibly it could be a career change plan, but this serves no purpose if skill is not utilized in the immediate or near future..

Case unit structure

The unit consist of people dealing with data storage functions and those dealing with data backup function. There are also roles like data architecture and integration management.

Role of leadership

A leader is responsible for ensuring the unit culture is optimal, and that unit members can work together. The leader ensures that unit staff attends trainings to obtain skills required and work with each other as a unit. Additionally, ensuring there are no egos prevail amongst each other so that there is collaboration with individuals taking responsibility for their actions.

Leaders are decisive individuals who consult and leads the unit on the journey. Every decision taken is in the interest of the FSP unit and its journey. Leaders are accountable for every decision they take while ensuring members are responsible for their actions.

Leadership style within the case unit is not that of fear, the leadership style empowers members as they are urged to be themselves. Unit members are encouraged to take a task and run with it without being micro-managed.

What the case unit would do differently or change

The first thing to change is for individuals and leaders to understand that work is not where units are, work is what units do. There is a culture of micro managing whereas today's technologies allow individuals to work from anywhere. The staff should be doing what they are hired to do without being followed around. Eradicating the micro management style is a change needed.

Some roles require staff to be in the office, especially if they are serving clients at a specific location like a banking branch, though. There is little way to serve ordinary banking customer from own location rather than from a primary designated location. Therefore, remote working is per a role. Flexible role also requires members to be more responsible and deliver, and discipline is the key factor here. Sometimes it is human nature to micro manage certain individuals based on experience working with them.

4.4.2 Case Unit D: Resource Dependency, Backups and Storage

This subsection discusses the findings from **Case Unit D: Backups and Storage,** a division within a financial services provider, with regards to its resource dependency.

Suppliers and vendors

There are vendors that support storage and backups unit, with key activities done in partnership with these external vendors. Vendors such as Hitachi and Veritas are at the heart of the organisation's success based on competencies they provide.

Suppliers and vendors selection criteria

There are different elements such as financial status, local presence, track record and so forth defined as criteria used to select vendors. The process is driven from procurement perspective. However, within the South African political construct whereby BEE targets must be driven, most of the OEM's (Original Equipment Manufacturer) must find local partners to be able to fit into the country's politically driven requirements.

Relationship with vendors and suppliers finding

The relationships are currently working well. In most times there is great value on some things then on some the cost is excessive for the service, likely due to proprietary. However, overall the relationship is working well with vendors.

Working directly with the main supplier would be ideal although not achievable within the current political construct. Most suppliers have to sub-contract jobs to smaller companies to do certain tasks. One other reason for subcontracting is that other international based suppliers have no local presence.

Supplier and vendor competence

There are SLAs (Service Level Agreements) in place to manage vendors, based on the service they provide. Incidents are monitored closely hand in hand with the agreed terms. It is important to have some sort of metrics in place as to manage expectations. There is no other way to hold vendors accountable if there are no service level agreements in place, this helps manage expectations.

Leadership with regards to insourcing and outsourcing

The leader influences the outcome of insourcing and outsourcing, not the vendor. Vendor must meet all requirements outlined by procurement processes. There is no point of influencing the process to have a vendor that doesn't meet all requirements. The organisation must not bend the process to accommodate a certain vendor brand; a standardised process must always be applied.

Limitations of a leader

There may be little limitations at present because of good governance and corporate responsibility. The leader limitation visible at present is that there is a threshold amount placed for order approvals when doing deals with vendors even, although this set amount is far less than the unit's budget. This means that, even though there is a misalignment of responsibilities, the budget is still managed very well.

Case unit leader challenges

The challenges faced with regards to exercising the delegation of authority has no impact in the process. The leader is aware of the existing limitations, especially when

dealing with finances. The only challenge is people factor; dealing with different individuals is a challenge in its own.

Case unit relationship with vendors and suppliers

There is no social interaction with the external vendors, to ensure transparency. The relationship between the FSP and vendors is purely business which happens in the office not outside the office. This is to ensure that as a leader there are no questions and favours expected when dealing with vendors. Considering avoiding unnecessary queries, preference is to meet with the vendor at the FSP's offices than at their site or prescribed location by the vendor.

4.4.3 Case Unit D: Technology Organization, and Environment, Backups and Storage

This subsection discusses the findings from Case Unit D: Backups and Storage**,** a division within a financial services provider, with regards to its Technology Organization and Environment contexts.

Case unit compliance

Within, the storage and backup space, compliance with security laws is imperative, especially because the unit has to ensure privacy with regards to customer's information and the likes. IT staff do not even have access to personal customer's activities. In terms of the backup space, it is alluded that the FSP is not good at managing data.

The backup standards were reviewed, and a content platform is being utilised as an archiving solution to manage their data. There are tools to manage backups that are provided by the unit. The unit must be accountable to ensure their data is backed up as a way to comply with data regulations. Data must be backed up and restored when required for compliance purposes. Data regulations accountability resides with the units that own the data.

External laws affecting the case unit

The core external law the unit must comply with is BBBEE (Broad Based Black Economic Empowerment). This is the core external law that the unit has to comply with since the unit has some resource dependencies from outside suppliers that is key to the unit's daily operations.

Case unit risks identified

The unit has services in different data centres and these services must always be available. The main risk is availability of systems, having an infrastructure for storage and not have a proper disaster recovery tool is detrimental to the FSP. Meaning if something breaks on one site, it affects other sites. The restoration of system manually is time consuming because there are a number of systems. The unit is then under pressure as the organization cannot afford to be without such services. This is where replication of systems comes in to offset the risk.

Global Active device tool

The tool being used to help with replication as to allow systems availability is called the global active device. Global-active device is a Hitachi Storage Virtualization Operating System (SVOS) feature that simplifies the ability to have read/write copies of the same data in 2 places at the same time. Active-active design enables production workloads on all systems while maintaining full data consistency and protection

Case unit description of competition within the industry

When it comes to storage and backups within the financial services industry, the unit is leading the pack in the industry. To illustrate that the unit is leading the financial service provider pack in South Africa, it has reduced the backup costs by 20 million rand annually. There are still more opportunities that are currently being deployed to further reduce the costs and standardising backup policies.

External laws affecting the business unit finding

External forces that have impact on the storage and backups business unit are standards set by Reserve Banks audit teams regarding service restoration and data integrity. However, the unit have learned to handle such through the organisations internal risk team due to the knowledge the unit has around risk, which works well. Additionally, there is still some requirement to prove service restoration as part of Reserve Bank requirements. The storage and backups unit ensures that infrastructure is available for units to consume service and data. Custodians remain responsible for data.

4.5 SECTION 5: CASE UNIT F STUDY FINDINGS

This section discusses findings from **Case Unit F: Communication Networks,** business division of the financial services provider. The discussions are done per theme and subthemes. A theme is synonymous with a study objective.

4.5.1 Case Unit E: IT Capability, Employee Experience

This subsection discusses the findings from Case Unit E: Employee Experience, a division within a financial services provider, with regards to its IT Capability.

Case unit description

The role of the unit focuses on three pillars that are contained within employee experience namely technology, real estate and culture.

The case unit's role is to ensure that FSP employees can work from anywhere, anyhow and at any time.

Case unit role of enablers

This unit ensures the FSP moves by adopting the new ways and the structure which enable change in culture. The structure is key to drive culture within the FSP. Culture talks to how FSP units organise themselves from different locations and so forth. Part of building culture is by ensuring the visibility of the vision of the FSP. By doing this, the unit ensures that the employees feel that their environment is also as important as it is to the FSP.

Case unit strategy

Ownership of the strategy lies within group technology. Employee experience enables employee engagement, which ensures change through the three pillars by doing things differently.

Case unit processes

The unit plays a big role as enablers of employee experience. It is imperative that spreading and sharing of production and development of new innovations is properly communicated to other units through this unit. There are lots of exciting innovations being carried out, some includes applications around onboarding new recruits. There is a variety of applications used.

Business unit applications finding

These applications and innovations are a way to empower managers and drive changes quickly to avoid delays in processes such as hiring process. The application enables the managers to be on loop with changes in terms of hiring without the need for setting up a meeting. This approach is deemed to be agile way of doing things.

The organization's history being structured in a certain way, moving to new ways of work would also require legacy key activities to be carried forward. In essence to do use new applications and processes the old (legacy) applications and process have to be integrated with newer ones. The key main application used is remedy for managing incidents across organisation and this needs to be integrated with new applications.

Case unit challenges

The main challenges are skills and legacy systems. Newer financial service providers are at an advantage because their businesses technologies are very recent compared to this FSP. This FSP must adopt to doing things differently to maintain competitive advantage. Doing this means new skills are required while maintaining old skills to keep legacy systems working, and this is a big challenge.

Some of the challenges experienced are through production that runs on mainframe computers, however latest technologies are being implemented as a solution. Change management is one other issue that IT unit are cautious of as they consider it to be the change of IT processes.

The FSP has in the recent years started focusing on change management, especially transformation of culture. Change management must be practiced often and made deliberate within an FSP to get desired and exciting results.

Measuring performance within the case unit

Performance is multi-dimensional; finances tell a story and behaviour of the people. The real measurement of employee experience is on the return of investment of the FSP itself. When people are not motivated, not inspired, they wouldn't be doing any work and if the work is not happening, you'll see it in your finance.

The unit promotes the idea of running a net promoter score for the measurement of the whole FSP as a tool to understand various aspects. It is vital to the performance of the FSP to get feedback from employees, underpinned by the three pillars.

Improvement of business processes within the case unit

The new ways of working would be a good start to improve business process. It is obvious that technology has revolutionized the ability to perform a whole variety of tasks. Employees can now send and receive emails, join in meetings from the other side of the world and keep in touch with our colleagues through a variety of social media. They can access all the documentation from the “office” without ever going near the building and they can keep up with the latest developments in the field without having to attend endless conferences or meetings. This is the greatest improvement this unit brings to the working environment through culture and technology.

Case unit skills and competencies required

With regards to capacitating a unit, the unit considers the understanding of the working space involved in. If you are going to be working from a technology perspective, you need someone who has a good understanding of those technology domains. Every domain has a set of required skills and it is a challenge to say which are key. For the unit, if you are in group real estate you need to know frameworks, policies and laws around that and compared to the rest of the world.

Case unit structure

The structure of the unit is in three levels organised per resources. There are 40 operational employees across the pillars that do the work when the requirements come. These employees put things together and produce something that is reusable, and then there are 12-line managers and team lead.

Case unit leadership type

In the unit, the role of a leader is to coach and mentor. The leader prepares members and deals with issues of empowerment and transformation. A leader must make a difference in a unit by being selfless and putting others first and not themselves.

What the case unit would do differently or change

For things to change, from a change management perspective, FSP needs to consider people when making the transformation journey, it needs to teach people and put more emphasis, not just on the issue of sympathy, but empathy also plays a

key role to understanding where people are coming from to enable you to lead them better.

4.5.2 Case unit E: Resource Dependency, Employee Experience

This subsection discusses the findings from Case Unit E: Employee Experience, a division within a financial services provider, with regards to its resource dependency.

Case unit vendors and suppliers

The FSP has some resource dependencies to achieve their objectives. As a unit certain capabilities are sourced from the vendors. Marketing suppliers and vendors are good examples that FSP makes use of. As a business unit the focus is on what the unit is good at, internally. The unit markets products they have across the FSP to increase their visibility and ensure that other units are aware of what products it offers.

Furthermore, the unit is in business with a variety of vendors but not limited to real estate, which has a security component. Access control is a specialised skill; there are suppliers which are good at such. It is critical to ensure there is trace of who comes in and out of the FSP's buildings and such a task requires specialised skills, which the unit do not have internally.

Relationship with suppliers and vendors

There is a procurement process to be followed with regards to acquiring the services of a supplier. The issues of service level agreements are tackled during this process with the focus being on the guide to engage with the stakeholders, including the measuring of the service offered. Information technology service management (ITSM) refers to the entirety of activities – directed by policies, organized and structured in processes and supporting procedures

Case unit suppliers and vendor selection criteria

During the vendor selection process, the procurement unit outlines certain requirements that every vendor willing to do business with this financial service provider has to be comply with. This is not just only about preference, there are things like BBBEE that vendors must comply with. Even if a company is preferred, it

must be ensured that all those requirements are met, including the reputation of the supplier to see if it meets the values of the organization.

Case unit suppliers and vendor competency

The competency process is working very well in the unit work space. The most important thing for every vendor brought on is to adhere to the competency requirement process and the unit keeps taking weekly, monthly as well as quarterly checkpoints to ensure that the vendor and the unit are on the same path.

Case unit OLAs/SLAs with suppliers and vendors

Moreover, it is established that during the process of selecting vendors, a change to be brought forward would be, an improvement in the drafting of contracts whereby it should include the issue of skills transfer so the organisation doesn't entirely depend on that company. Ideally the FSP internal staff should be able to handle minor things that the vendor offers, through skills transfer.

The challenge around skills transfer is cost to the FSP. And from an employee experience perspective, this challenge derails growth, it denies the employees an opportunity to grow in such interference.

The FSP is not deliberate with the issue of skills shortage internally and always find themselves having a dependency on third parties to perform required services. The measurement of the performance of the supplier is found to be not important as, 2 years later, the FSP still finds itself contracting another vendor to do the same work. Although some services are not key competencies for the FSP, there should be someone internally who gains understanding of what the vendor does.

Case unit leadership influence with regards to insourcing and outsourcing

Within the FSP leadership, there is a plethora of experience to deal with resource dependency partners. Majority of the people in leadership role carry knowledge and experience from previous companies, and this becomes advantageous to the FSP in case the need to outsource from the company arises. Though the influence from leadership is not the ultimate decision, the final decision is driven by process defined by procurement unit with input from relevant stakeholders and unit. Therefore, a rigours process remains key when dealing with partners to help the FSP reach its goals.

Case unit key lessons learned from other industries

The lessons learned from other industries outside the financial services are brought in by the leadership to add value to the FSP processes. Experience is so critical in making sure the FSP does not make mistakes made by others and having leaders with experience helps avoid such pitfalls. Things like understanding cost, requirements and reputation of the vendors are crucial.

Experience plays a crucial role, there is no point to want to pave a new path while the FSP has experienced leaders to leverage from their past experiences. Why re-invent the wheel while some elements of the wheel can be used to better understand resource dependency phenomenon.

4.6 SECTION 6: CASE UNIT F STUDY FINDINGS

This section discusses findings from Case Unit F: Communication Networks business division of the financial services provider. The discussions are done per theme and subthemes. A theme is synonymous with a study objective.

4.6.1 Case Unit F: IT Capability, Communication Networks

This subsection explores and describes the information technology capability of the financial service provider's case unit F.

Case unit description

The unit is responsible for communications and computer networks within the financial service provider. The unit is responsible for internal and external communication between customers, systems, institutions and other applications within South Africa and the world. This function is described as the "plumbing" i.e., connectivity of the FSP to both internal and external worlds.

Case unit strategy

The case unit strategy consists of two dimensions; one which comes from the Original Equipment Manufacturers (OEMs) and the second comes from the organisation as they look to provide a positive customer experience. The network capability is seen as important to the ability of the FSP to provide a service; without it this would not happen.

Case unit processes

There are several processes identified which are of important to the network capability and operations. There is a need to monitor the health of the network services 24/7 to ensure that there is no downtime or to recover promptly when that is the case.

Case unit challenges

There are challenges recognised within the business unit, the critical one being skills. Due to the size, speed of change and complexity of the unit environment, the network engineers are required to have deep skills and knowledge to be successful. Cloud skills are in demand. The management of 3rd party suppliers is also a challenge, for the speed of innovation – introduction of new products.

Measuring of performance within case unit

A single metric important to the FSP is identified as the number of critical incidents; criticality is measured by the level of impact to the customers. This measure is coupled with the ability to recover within minutes, including the reliance on 3rd party partners.

Measuring of performance within business unit finding

The business unit is of the view that to reduce downtime, features that allow for systems to be cognitive and proactive will improve customer experience.

Case unit skills and competencies required

Cloud training and the Original Equipment Manufacturer (OEM) specific training are critical in the ability to provide the service to the FSP. These skills would make the unit relevant for now and in the future. Furthermore. Security is as critical.

Case unit structure

The structure's ratio of managers to engineers is highly skewed towards engineers. The structure is made up of two key functions, one that focuses on monitoring the environment and another that focuses on building solutions; however, the unit asserts that this function should consider merging.

Keeping up with trending market skills

The unit keeps staff skilled; through initiative with the preferred OEM and Cloud Computing training. In addition, on-the-job training is as important to making more practical what they would have learned. Staff is encouraged to manage their own development. Developing the staff in a competitive market makes them prone to external interests as many may leave.

Case unit challenge

Technical skills in the environment and organisational knowledge are identified as a challenge, because it takes time to train up someone. Those who left are keen to return though as the financial services provider offers good opportunities.

Case unit leadership style

Leadership is about providing guidance while not prescribing. The unit hires specialists and gives them the environment to apply their skills in the best way possible. The unit is made up of internal engineer, integrations specialists and third-party engineers to build and maintain the network capability. The engineers keep up with technological trends by training and attending conferences. Operationally, the unit engineers work through complexity and the leader offers the support that is required.

What the case unit would do differently or change

If given the opportunity to make changes, the unit would not change a lot. The unit is small but coherent. What the unit might change is how it collaborates with other units. Due to the cross-unit dependency, it is important for units to work closer together to attain greater goals.

4.6.2 Case Unit F: Resource Dependency, Communication Networks

This subsection discusses the findings from Case Unit F: Communication Networks, a division within a financial services provider with regards to its resource dependency.

Case unit suppliers and vendors

The case unit has a dependency on two key stakeholders, an Original Equipment Manufacturer (OEM) and aa supplier of solutions and services. The two partners are critical to the strategy.

Case unit suppliers and selection criteria

The unit looks to partner with market leaders, both local and international. It achieves this by using external companies like “Gartner” to assess the capability of technology suppliers/partners. Before entering into a partnership, the unit considers the local presence, skills available in the market, maturity of the products. It then follows the procurement processes as prescribed by the FSP.

Case unit relationship with vendors and suppliers

The unit ensures the partners meet expectations through on-going structured and periodic communications. Regular meetings focus on both operational and commercial performance. The relationship with the partners is managed closely to ensure that expectations are met.

Case unit OLAs/SLAs with vendors and suppliers

It is important for the case unit to have their own internal staff to keep the partners on their toes. In the absence of an internal staff some partners might be tempted to cut corners. The participant elaborates that contracts are entered into based on outcomes. The intension is to build partnerships for collective ownership of issues/problems.

Suppliers and vendors competences

In addition to engineers (who are key to operations), there is need for strategists to focus on the bigger picture, product specialists and integration specialists who works on collaboration with other units. This is a multi-team effort, which emphasises on the role of management.

Case unit leadership influence with regards to insourcing and outsourcing

Leadership focuses more on commercials, evaluate capability and validate delivery history. And since the FSP operates in South Africa, it also focuses on socio-economic considerations like building a diverse and inclusive workplace, which

leaders need to manage effectively. Furthermore, the leader's focus is on the development of those in their employ. They do this keep their systems up.

Case unit supplier and vendor challenges

The common challenges are skills, especially because this is a large and complex FSP. This is compounded by the demanding regulatory frameworks which the financial services provider has to comply with. The changing environment means that you are always introducing new ideas, which may be met with resistance.

Case unit upskilling clause with suppliers and vendors

Dependency on 3rd parties (OEMs) is a challenge with regards to creating internal competencies and capabilities. The unit build internal skills for simpler issues to solve, however the complex matter is normally the realm of the OEMs. Where the internal unit is important is in understanding the context of the FSP. The second challenge identified is that effort and resources are dedicated to developing staff; however, once they are skilled, they become targets for pouching.

Case unit retention of specialised skills

Retention strategies are in place. However, they are difficult to implement due to factors ranging from money, exploring alternative careers, keeping staff challenged and providing opportunity for growth. The recycling of staff within the financial services industry is a common occurrence. It is increasingly difficult to retain staff because of international opportunities, prospects with OEMs, new roles, etc.

Service management with suppliers and vendors competence

The unit together with the procurement unit have vendor contracts that include 90-day termination clauses, to allow flexibility. This is to protect themselves from non-delivery by partners. The processes the units follow to ensure performance are weekly and monthly meetings prescribed by procurement practices. Since this is a partnership the situation should be managed before it gets to that point.

What the business unit would do differently or change when dealing with vendors and suppliers

The FSP would not want to outsource critical business functions. They would rather outsource capabilities that are less integral to their operations.

4.6.3 Case Unit F: Technology Organization and Environment, Communication Networks

This subsection discusses the findings from **Case Unit F: Communication Networks,** a division within a financial services provider with regards to its Technology Organization and Environment contexts.

External laws affecting the business unit

The unit explained why each country is accountable to their local regulator with some services spanning multiple countries, which create some complexity. Within their capability, connectivity is a key part to meeting regulations as it enables systems to communicate sensitive information.

External laws affecting the unit

The regulator (South African Reserve Bank) has laws and rules which financial service providers must comply with. These include the management of cross-border data. Some regulations are country specific and others are localised. The FSP work with different stakeholders to help it comply.

Case unit risks identified

Skills and the cross-border connectivity are identified as key challenges. And these two are heavily dependent on vendors. Cross-border transacting is critical yet risky for financial service providers.

Case unit compliance

Compliance is critical, specifically to avoid and monitor information and money laundering, typical within the financial services industry. There is an expectation to comply regarding this. Compliance is monitored on an ongoing basis.

Non-compliant employees

Compliance of internal staff is monitored monthly and there is non-compliance leader to step in to assist staff to understand its importance. There is a culture that respects compliance, so this is not an issue.

Competition within the industry

Digitisation has increased the importance of connectivity. For example, trading platforms, electronic transfers, online platform, etc. requires connectivity. Connectivity also provides an opportunity to bank the unbanked. This is the area where the unit should be focusing on as this is where the competition is going.

Case unit fines and penalties

The unit has never been sanctioned for non-compliance.

Understanding of digital transformation

Digital transformation means customers having the ability to transact when and where they want, with varied platform to choose from. Digital transformation is when most customer no longer visit the branches as frequently as they used to. Legacy systems are a hindrance to digital transformation.

4.7 SECTION 7 AND SECTION 8: CASE UNIT G and CASE UNIT H STUDY FINDINGS

These two sections discuss findings from Case Unit G: Systems Integration and Case Unit H: Workspace and User Experience, business divisions of the financial services provider. The analyses of the two case units were done following the same approach as the other six case units. However, the discussions are not shown here because of the need to manage the volume of the thesis. The findings from case unit G and H are incorporated into the next section and are part of the interpretations in the next chapter though.

4.8 FINDINGS FROM ANALYSIS OF SEMI-STRUCTURED INTERVIEWS

This section gives the overall findings from analysis of data collected from interviews. The findings are provided per theme, and a theme is synonymous with a study objective. The findings are a collection from the 8 case units. Findings that appear similar within the 8 case units s are articulated and discussed as one. Objective three, which is the analysis of how technology, organizational, and environmental contexts may influence digital transformation is embedded and discussed within the first two objectives.

4.8.1 Analyze business strategies and how financial services providers conduct business.

With this objective, the study sought to understand how financial service providers conduct their routine business, including their operations and IT strategies with regards to the three technology, organizational, and environmental contexts below:

4.8.1.1 Organizational Context

4.8.1.1.1 FSP Description

a. Office of CIO of Information Technology

This case unit is responsible for acquiring and managing products, building products, working with customers to build information technology products, operating, and securing these products. This case unit basically provides all these capabilities to other business units through its sub-units within the CIO area. This case unit provides a universal banking capability which is able to deliver at various levels of the financial services.

b. Cloud Engineering Practice

This case unit includes cloud engineers within the personal and business banking part of the financial service provider. Its purpose is to provide technical expertise to transform legacy technology (mainframe) to leverage cloud computing, to align with the FSP's strategy.

c. Business Design Practice

This case unit consist of the group head for design, technology and design practice. What that means is that this case unit looks after the standards, the guidelines and the tools that need to be done for design. Additionally, strategy is one key responsibility for this case unit.

d. Backups and Storage

This case unit is responsible for data storage and backup for various functions of the business. Data drives a lot of business decisions for the financial service provider. Thus, this case unit is crucial from that angle. This case unit ensures that there is adequate infrastructure to store data and provides ability to restore data when required and on demand. Additionally, there are legislations within financial services

that require data to be stored in a certain way and that data must be retrievable whenever required.

e. Employee Experience

This case unit includes a lead digital within global technology employee experience work space. The role focuses on three pillars that are contained within employee experience namely technology, real estate and culture. This case unit's role is to make sure that employees can work from anywhere, anyhow and anytime.

f. Communication Networks

This case unit is responsible for communications within the financial industry, using computer networks. That is, this case unit is responsible for internal and external communication amongst customers, systems, institutions and other applications within South Africa and the world that interact with the financial services provider or doing business with it. Additionally, this function is described as the "plumbing" i.e., connectivity of the financial service provider to both internal and external.

g. Systems Integration

This case unit comprises Chief Technology Officer and the Chief Information Officers as key leaders. The purpose of this unit is to provide technology services so that business applications can run.

h. Work Space and User Experience

This case unit manages two enterprise wide capabilities, albeit that the two are not directly related to each other. One capability focuses on employee productivity, whereas the other is on systems integration. This case unit further argues that these capabilities have and continue to evolve.

4.8.1.1.2 FSP Strategy

Case units are advantaged because they have individuals with knowledge gathered from other financial service providers they previously worked for. The strategy right now, from a design practice perspective, is to create a good user experience driven by:

- What the user needs are
- What the business goals, the business vision, and the mission for the group is as well as the technology capability.

With the personal and private worlds of this financial service provider, the two functions have separated sensors and their processes are segregated. Their strategy is to collapse the current infrastructure to just have economy of scale working across multiple technologies. Furthermore, a few years ago the financial service provider had a need for flash storage, and they bought storage from a service provider from that business perspective. However, the flash storage is now available at a cost. The plan is to consolidate single vendor and a single platform and ensure that they get the best cost vs supportability and maintainability values.

Also, considering the cloud journey that storage will not entirely move to the cloud as Hitachi technology is much cheaper and useable.

Ownership of the strategy lies within Group technology and employee experience is realised through the varied units which enables employee engagement and ensures change through the three pillars.

The strategy consists of two dimensions; one which comes from the Original Equipment Manufacturers (OEMs) and the second comes from the organisation as they look to provide a positive customer experience. The network capability is seen as important because it enables the financial service provider to provide services.

The rapid rate of change in the ICT space impacts the FSP strategy. Furthermore, ICT is increasingly the key interface for customer experience, and this has to be supported by strong back-end systems. The value driver for this function is the ability to connect front-end and back-end systems.

The FSP strategies talks to the capabilities. which they manage. The overall strategy focuses on digital and is future orientated as well as it is about optimisation of the existing capability. The business strategy is premised on modernising legacy systems to enable objectives and achieve goals.

4.8.1.1.3 FSP Leadership role and style

A leader is responsible for ensuring that the FSP culture is optimal and that staff members can work together.

Leaders are decisive individuals; they consult and take the employees with on the journey. Every decision taken is in the interest of employees and the FSP journey. Leaders are accountable for every decision they take while making employees responsible for their actions.

Leaders should set direction, be more visionary in their strategy. Individuals and teams perform better when a leader walks the path with them not just to dictate to them what needs to be done. The “why” we are doing this is so important because it creates transparency and eliminate uncertainties. Individuals, teams involved in a project need to understand the “why”, which speaks to benefits of doing a thing.

Leadership style within the FSP is not that of fear but that of empowerment, where employees are urged to be themselves. Employees are encouraged to take a task and run with it without being micro managed.

Autonomy is critical within a financial service provider strategy. However, autonomy is a function of competency. The FSP hires specialists and give them the environment to apply their skills in the best way possible.

The role of a leaders within the FSP is to coach and mentor team members. The focus is not mainly on the type of leader you are but also the preference will be to look for a futuristic type of leader whereby the FSP will be prepared. The issue of transformation and empowerment of the people would have been tackled. A leader must make a difference in a financial service provider by being selfless.

An approach such as command and control leadership does work within the financial service provider. Historically, such a leadership approach was deployed at military and it didn’t always work, although it does work at some point. Culture created by leadership is so critical to the survival of the financial service provider else people will be unhappy and leave if they find better opportunities. Culture flows form the top, if the culture is wrong the financial service provider will experience some turbulence.

Areas of improvement opportunity is identified as including proactive detection of failure, and rapid response when failure happens. Therefore, as a leader, importance of innovation as a tool is to keep up with customer demands. In additions to the leader’s role to inspire in the digital economy. Although 4IR is identified as a threat to jobs by many, it has the potential to unlock value. According to FSP, this is how they continuously inspire the units to remain relevant by finding a purpose. Relinquishing repetitive tasks through automation so that they create more time to pursue their passions is key.

Culture of not sharing information is not encouraged in the FSP as this will introduce silos approach and leaving some employees feeling like they are not part of the

team. This culture is discoursed from the leadership perspective, right culture should be sharing, contributing, and encouraging ownership.

For the financial service provider to move forward and adopt new ways, the structure should be different which would enable change in culture. The structure is key to drive culture within and financial service provider, culture talks to how business units organise themselves from several elements such as location, sitting arrangement and so forth. Part of building the financial service provider's culture is by ensuring the visibility of the vision, by doing this they are ensuring that the employees feel that their environment is also as important to the financial service provider. There should be culture of transparency in the operations.

The role of leadership is critical within the FSP, specifically for the development and execution of strategy while fostering trust and a common purpose amongst team members, to achieve their potential. Leadership is about developing the people whom you lead. Within this FSP there are two pronounced focus in leadership; firstly, the management of day-to-day activities associated with operations and secondly, which is more focused on people management.

4.8.1.1.4 FSP Structure

The FSP has 8 business units which include Cloud Computing, Backup and Storage, Communications Networks, System Integration, Employee Experience, Work Space, Business Design and Office of the CIO, each focusing on a specific business portfolio. The rules applied are aligned to agile at scale and modern software development processes.

4.8.1.1.5 FSP's understanding of digital transformation

The FSP defines digital transformation as a method to take existing processes with the eyes of the customer and transform these processes to be more customer centric and deliver more value. It argues further that automating something that was done manually is not digitization.

The public perception around digitisation has been reduced to job losses. However, this should be understood as an evolution no different than the ones that have seen before. Digital needs to be embraced for the benefits to holds for humanity. As the industry matures and further investment is made in the digital economy, then we will learn and experience its full effect. Within the financial services sector, this could mean further inclusion of those who are currently unbanked (in the informal sector).

Digital transformation means customers having the ability to transact when and where they want to, using varied platforms. Most customers no longer visit the branches as frequently as they used to. The FSP identified legacy systems as a hindrance to digital transformation.

The decision to go digital may be a business one, the ability to realise it is largely dependent on IT. Digitisation is seen as a transformation of exiting business processes. This requires collaboration of business units' competencies to define the business rules and processes, while IT brings competencies like biometrics and electronic document management to fully digitise a process. The financial service providers need to keep up with the pace of these changes.

The main cause of failure with digital transformation projects is that they are not business led; regularly, IT units are the ones trying to convince business partners of the importance of digitisation. These are challenging project to manage, thus cases where there isn't a strong program management function could also result in failure amongst such projects. Lastly, these initiatives are should be focused on improving customer experience, and such an initiative takes the entire financial service provider to get it right.

The FSP explains that digital transformation is multiple facets, it is characterised by shifting from how it transacts today and moving towards digital platforms and devices.

4.8.1.1.6 FSP Level of digitisation

The financial service provider's goal is to transform to digital business since technologies have evolved and so are the ways of doing businesses. Marketplaces and ecosystems have completely changed the way banking is done. Financial service providers are moving most capabilities from onsite premises to applications customers can access using their mobile devices. However, the FSP states that digital transformation is the hardest thing to do. The financial service provider is trying hard to ensure that customers understand that going to a branch is much expensive, and that branches operate on certain time schedules while mobile devices have capabilities to give them access to banking services 24hrs a day. However, the financial service provider acknowledges that it will not do away with branches because it still has large older generations customers who prefer to go to these branches. Hence there are relationship managers available via telephones to

help older generation customer do their banking without visiting these branches. This will continue to exist for a long time. Mobile channels and call centres are another form of digital transformation.

Only about 30% of processes are digitized which means about 70% are not. For example, money making products such as home loans etc. are still a tedious manual process. And this is not appealing to potential customers, therefore digitization is crucial.

The environment the financial service provider operates within requires a fully digitized services not half digitised. This creates issues where the FSP needs to attract modern customers. It is important to have processes that are fully digital and working to the optimal. Customers are looking for agile services that are delivered in a timely manner, not a percentage of agile services.

4.8.1.2 Technological Context

4.8.1.2.1 FSP Skills and competences required

The competences and skills required for digital transformation within financial services provider are more software engineering type. Software engineers have more impact in any financial service provider due to the nature of their skills to change and make thing more agile. The FSP states that the current operating model is like 42% engineering and that 58% is non-engineering, hence still a transformation challenge for this FSP. They believe is in engineering type of individuals as they tend to make a difference through software, systems and applications. Engineering capabilities required are solution architects, software architects, database administrators, network engineers.

Skills such as content writers, and service designers are important and needed for digital transformation.

Technical skills to operate, deploy and manage storage and backup's technologies are key to stability of these environments. Moreover, crucial skills required to build the financial service provider are not only limited to doers but also individual who are creators are critical. The financial service provider also has an annual review period to assess staff skills and competency. Additionally, soft skills like attitude and ability to collaborate and listen play a huge role.

Individuals should not be concerned about getting degrees only but the degree one gets must accompany a certain skill. Some degrees become useless in the next four years after being attained due to the speed of change in technology. The culture of this financial service provider should focus on ensuring individuals spend more time studying to acquire certificates in different emerging technologies as opposed to studying a four degree that becomes irrelevant upon completion. Such certifications include artificial intelligence

Cross skilling is beneficial if it is done with a benefit in mind; for example, a storage engineer can cross skills to also work on servers because storage and server teams work hand in hand.

Capacitating a team include understanding the working space one is involved in. If you are going to be working from a technology perspective, you need someone who has a good understanding of those technology domains. Every domain has a set of required skills and it will be a challenge to say which are key.

Cloud training and the Original Equipment Manufacturer (OEM) specific training are critical in the ability to provide the service to the financial service provider. These skills would make the FSP relevant for now and in future.

Specialisation and the portability of skills is key to developing sustainable capabilities. Furthermore, this case unit states that cloud computing has changed the skills profile within their teams as a result, a combination of cloud (generalists) and specialist skills are required.

The financial service provider thrives on collaboration as the silo approach doesn't work well due to the setup of the financial services structure.

Currently, staff is attending trainings as part of the financial service provider's strategy but there is often a mismatch for their roles. Therefore, it is important to match training with type of roles available within the FSP in order derive value from training attended.

The FSP describes how they keep staff skilled; through initiative with the preferred OEM and Cloud. The FSP also shared that developing their staff in a competitive market makes them prone to external interests and may leave.

There is a minimum skills level for individuals while there are new aspirational skills that needs to be acquired. Specialised training is focused on new skills that are aligned to digital transformation, like cloud computing and dev-ops.

4.8.1.2.2 Measuring performance within the FSP

Measuring or evaluating performance of various business units within the financial service provider are inn two folds, namely availability of systems and time to market and use the product. Availability of systems talks to how reliable the systems are, for customers to transact at any time with little possibility of downtime. The other is the time to market, which talks to how long does it take the team to deliver new products, solutions and innovations to customers before competitors do so. Customers are looking for new methods of doing things that will make their life easier too, hence time to market and use is a critical metric of measure.

There are standards and policies which performance is benchmarked against, including new methodologies. Capabilities are measured on three dimensions namely, technology, process and people. The measurement is based on international best practices like cloud computing adoption. All financial service provider designs that are created make use of key performance indicators in place and this is part of the strategy that managers should use to ensure adoption.

There are also multiple facets used to gauge performance, the financial service provider makes use of scaled agile framework (SAFe) which promotes alignment, collaboration, and delivery across large numbers of agile teams.. Main thing is to define what is good and what is complete then the FSP will understand the expectation regarding required performance as per Key performance indicators (KPI).

Performance is multi-dimensional; the finances tell a story and behaviour of the FSP and its employees. The real measurement of employee experience is on the return of investment of the financial service provider itself. It is vital to the performance of the financial service provider to get feedback from employees, underpinned by the three pillars.

Another metric identified as important to the financial service provider is the number of critical incidents; criticality is measured by the level of impact to the customers. This measure is coupled with the ability to recover within minutes, including the reliance on 3rd party partners.

Performance is also measured for two purposes; firstly, through Service Level Agreements (SLAs) entered into with customers for operational activities. Secondly, for strategic purposes, which evaluates how they adapt to changing customer needs. Operational performance is measured more regular as compared to strategic performance, for both capabilities.

4.8.1.3 Environmental Context

4.8.1.3.1 FSP Risks identified

The financial services provider intellectual property (IP) is at risk because design services are dependent on third parties.

The other risk is that of availability of systems, and not having an infrastructure for storage and a proper disaster recovery tool is detrimental to the financial service provider. Meaning if something breaks on one site, it affects other sites which lead to the restoration of system manually, this exercise is time consuming due to the number of systems. The financial service provider cannot afford to be without services, which is where replication of systems comes in to offset the risk.

Risk is part of every financial service provider, especially information security. Data needs to be encrypted so that data like personal information is not accessed by the outsiders.

4.8.1.3.2 FSP Description of competition within the industry

The industry is very competitive, with cloud computing being an emerging skill and on demand.

A clear strategy is key to ensuring the financial service provider remain competitive within the industry they operate in and beyond. Today's industry requires clear strategy for the FSP to succeed. The strategy should be available and understood by individuals at all levels, from the receptionist to the top management. The strategy should outline what the financial service provider aims to achieve in short term, medium term and long term. One other thing that the financial service provider is creating as part of their strategy to remain competitive is to introduce things like graduate programs and training.

Digitisation has increased the importance of connectivity, for example trading platforms, electronic transfers, online platform, etc. requires connectivity. Connectivity also provides an opportunity to bank the unbanked. This FSP argues

that this is the area where they should be focusing on as this is where the competition is going.

The FSP added that the level of competition is more acute in the Gauteng province, as one of the key economic hubs in South Africa. In order to remain competitive, they regularly benchmark their services with the industry.

4.8.1.3.3 FSP Compliance with internal and external laws, regulations, legislations and penalties

The financial service provider is setup in a manner that there are roles for compliance officers who ensures that the FSP glued up with legislations and regulations. This financial service provider also operates outside South Africa; therefore, each country will have compliance officers who ensure staff is educated and complying with country-specific laws, regulations and legislations. Moreover, the financial service provider has a team dealing with risks associated with these laws, regulations and legislations, especially when it comes data.

This team interprets country directives like the protection of personal information act (POPI act).

Compliance to regulation is always an imperative in the financial industry. These regulations are embraced as risk mitigation interventions, albeit that regulators are still catching up to the technological advances.

There are specific bodies that provide standards which IT functions need to comply with. Locally, the Payments Association of South Africa (PASA), Data Security and Protection of Personal Information Act (POPI) were identified as example of key to IT systems. To comply with these requirements, they apply IT protocols to mitigate for this, like having firewalls. This FSP also added that the custodians of these standards typically audit for compliance either on an ad-hoc or periodic basis. Although the ideal situation is that they identify and remediate regularly.

The regulator is the South African Reserve Bank (SARB) and they do periodic report to ensure that they always comply with the law. The FSP has to pay fines and penalties whenever there are fines to be paid by the financial service provider for bridge of certain laws, regulations and legislations. They ensure that the FSP is compliant there is periodic monitoring of business units' compliance and these reports are shared amongst the units. Non-compliance is not tolerated and there are enough controls to ensure that there is reporting and consequence management.

4.8.2 Analyze financial service provider's IT capability and subsequent resource dependency.

This study objective has two parts namely IT capability and resource dependency. And since the findings have been articulated and fully discussed in the preceding sections, they will not be repeated in the section. This is to, again, manage the volume of the thesis. They are however interpreted in the next chapter.

4.9 FINDINGS FROM ANALYSIS OF FINANCIAL SERVICE PROVIDER ORGANIZATIONAL DOCUMENTS

4.9.1 Organizational Context

4.9.1.1 FSP Business Activities

- Lend money to the clients.
- Source funding from client deposits and other funders.
- Provide transactional banking facilities and knowledge-based services to clients
- Market access and risk mitigation products to businesses.
- Revenue from other sources linked to core businesses as well as strategic investments.

4.9.1.2 Value creation model

The FSP business model enables it to respond to commercial and social realities in a dynamic environment of competing stakeholder expectations, complex competitive forces and regulatory pressures. It strives to manage the resources and relationships responsibly in what it does and how it does it; to deliver the best outcomes for its clients, its people, its shareholders and other stakeholders.

4.9.1.3 Strategy

FSP strategy is designed to realize the opportunities that Africa presents. The three key focus areas combine to ensure it offers the clients the solutions they need in the most effective way possible. The strategic value drivers focus its efforts and measure the progress in delivering value.

4.9.1.4 Partnership

FSP strategic partnership with in full then (ICBC) assists it in servicing the needs of clients, operating within the Africa-China corridor. FSP IS building capacity of Chinese speaking relationship managers in each of markets in Africa regions.

4.9.1.5 Change Management

FSP Change Management is the application of processes and tools to manage the people and technology side of change, from a current state to a new future state so that the desired results of the change.

4.9.1.6 People

FSP people are the vehicles that drive the financial service provider goals and therefore, it is paramount to have leadership and employees that are effective and efficient for optimised organisational outputs

4.9.1.7 Role of leadership

The FSP sees effective leadership as that which unites purpose and performance by embedding an ethical and risk-aware culture, which recognizes that the trust of the stakeholders is the basis on which it competes and wins.

4.9.1.8 Business activities and outputs

As an integrated financial services provider with a broad offering of products and services, the business units and corporate functions work together to deliver on the client's needs.

4.9.1.9 Global disruption

Successfully identifying emerging trends is made more difficult given the nature and ever-advancing technologies of the Fourth Industrial Revolution. The World Economic Forum tracks trends shaping future ecosystems that are fundamental to the operations of economies, governments, industries, researchers, scientists, environmentalists, social engineers and financiers. These trends will result in technologies that could impact on all aspects of life, including financial and monetary systems, and the future world of work and skills requirements.

4.9.1.10 Regulations

Financial supervision, technological innovation and conduct remain key drivers of global regulatory developments as regulators require robust data protection and privacy controls.

4.9.1.11 Financial inclusion

43% of adults (over the age of 15) in sub-Saharan Africa now have a bank account, up from 34% in 2014. 33% have an account at a formal financial institution, while 21% have a mobile money account, up from just 12% in 2014. While an impressive improvement, more than half the adult population across Africa is still excluded from the formal financial system. The Fin-dex report notes that 'the power of financial technology to expand access to and use of accounts is demonstrated most

persuasively in sub-Saharan Africa', where 34% of adults have made or received digital payments in the past year.

4.9.1.12 Infrastructure development

The African Development Bank estimates that infrastructure investment of USD130 to USD170 billion a year is needed across Africa. To support growth, the continent must make the best use of existing infrastructure while developing new infrastructure. For example, the rapid evolution of transport and the development of autonomous vehicles will require investment in new transport infrastructure.

4.9.1.13 Client focus

The FSP delights its clients through personalized client journeys:

- Profitable client relationships built on trust, strong strategic partnerships, including our ten-year partnership with ICBC.
- Employees equipped to provide exceptional client experiences.
- Client focused, digitally enabled ways of working.
- Fit-for-purpose branch and ATM network.
- Utilities (direct) and financing activities(indirect).

4.9.1.14 Employee engagement

FSP has a culture of caring, growing, learning and innovation:

- Strong executive and leadership teams
- Engaged and capable employees
- Good relationships with employee representatives
- Reward structures linked to performance and value drivers
- High-performance ethical culture
- Investment in training that supports client focused ways of working

4.9.1.15 Financial Outcome

How the FSP does business results in increased shareholder returns:

- Competitive investment proposition.
- Affordable access to capital and a resilient and diverse capital structure.
- Competitively reward employees for the value they deliver.
- Good standing in the investment community.

4.9.1.16 Employee development and training

- Building and retaining local skills in the countries of operation.
- Development programmes.

4.9.1.17 Impact

The FSP delivers shared value:

- Supporting socioeconomic development and sustainable markets
- Working with clients to manage environmental risk, including applying the Equator Principles
- Viable business and market growth
- Reputable and ethical brand

4.9.1.18 FSP Performance indicators

- Net promoter score (NPS), indicates how likely a retail client is to recommend FSP for good service. It is calculated by subtracting detractors from promoters. This value can range from -100 if every client is a detractor to +100 if every client is a promoter. Any score above zero means there are more promoters than detractors.
- Client satisfaction index (CSI), is a measure of the extent to which our corporate and investment clients are satisfied with the service CIB provides. It is calculated using weighted scores for different dimensions, from response times to the effectiveness of client relationship managers.
- Employee turnover: measures the percentage of employees who left the employ during the year.
- Employment equity: measures the representation of black people in management levels in South Africa.

4.9.2 Technological Context

4.9.2.1 Digitisation

FSP ensures that people have access to user-friendly digital solutions ranging from self-service capabilities to people management solutions enabled through integrated global systems. Initiatives are underway across the group to introduce digital tools that will improve workplace productivity and employee access to connectivity and collaboration mechanisms. Tailored skills development programmes ensure the future readiness of employees for new roles in line with digital capability requirements.

4.9.2.2 Banking platforms

Technology modernised core banking platforms providing leading-edge digital capabilities. Rapidly changing client expectations and behaviours are driving

investment in client-centric technology. Africa, advances in digital and mobile technology has improved financial access, particularly in rural areas.

4.9.2.3 Cloud Computing

It is expected that cloud computing will grow to a USD191 billion industry by 2020, which is now. Given that the related risks are relatively unknown and the increased use of complex algorithms and cognitive engines like chatbots, a balanced approach to digitisation is needed to manage any negative impacts on clients, reduce unintentional bias in systems and improve data security.

4.9.2.4 Artificial intelligence

The need to effectively manage artificial intelligence (AI) will increase as resources become more scarce and digital strategies are adopted. To achieve the culture shift needed to accommodate AI will require investment in both people with the necessary technical expertise and in new ways of working to support more complex thinking, problem solving, flexibility and creativity.

4.9.2.5 Design thinking

Design thinking is the application of design principles to everyday interactions. It covers identifying problems, researching potential solutions and forming ideas, followed by prototyping the ideas. Design thinking helps improve client centricity by personalising products and services to each client, making them more intuitive and responsive.

4.9.2.6 Data privacy and security

Global concerns around data, privacy and consumer rights are being addressed through new regulations which place significant obligations on financial institutions to protect and use data responsibly and respect clients' privacy rights.

4.9.2.7 Digital currencies and blockchain technology

Digital currencies and blockchain technology support client privacy and data protection by enabling anonymous transacting. However, the advent of quantum computing has the potential to undermine the security of the digital economy.

4.9.2.8 Technical Skills development

Responses in the annual employee survey indicate that while most employees are satisfied with their opportunities for career growth and skills development, there is scope for improvement.

4.9.2.9 Cybersecurity

- Stability, security and speed of IT systems.

- Reputational and operational risk associated with third-parties, counterparties and suppliers.
- Card fraud constant concern.

4.9.2.10 Technology adoption

Adoption of technology means the recognition, incorporation and use in society of new technology for the FSP. The procedure follows many phases, typically organized by individuals within the technology units.

4.9.2.11 Enterprise technology

FSP enterprise technology is a critical enabler of integrated financial services solutions. The FSP has built enterprise assets that can be leveraged across business units and functions, with modernised IT platforms enabling multidisciplinary operational teams to create innovative digital platforms, whose functionality is continually improved.

4.9.2.12 System Integration

The FSP process of integrating the subsystems into a single system (an aggregation of subsystems that cooperate to ensure the system delivers overarching functionality) and ensuring that subsystems function together as a system and in the field of information technology to connect physically or functionally various computing systems and software applications. The benefits of moving from the old to the new platforms are multi-faceted and lie largely in the modular nature of the platform which has clear integration abilities.

4.9.3 Environmental Context

4.9.3.1 Describe competition within the industry

Traditional banks face increasing competition from a range of market entrants, including new digital service providers with propositions that are simpler, more convenient, more transparent and more readily personalised. Rapidly changing client expectations and behaviours are driving investment in client-centric technology. The recent launch of TymeBank, with Discovery Bank and Bank Zero set to launch in South Africa soon, are examples of new entrants.

4.9.3.2 Politics

Renewed confidence in South Africa has been tempered by factionalism, policy uncertainty and poor governance in state owned companies undermining institutional capacity. Increasing global tension continues to disrupt international cooperation and

trade relations. Sub-Saharan Africa continues to struggle with fragile political stability although increased political reform has improved economic resilience.

4.9.3.3 Economics

The global economic outlook is subdued, with recent momentum in advanced economies expected to slow, partly due to the trade tensions between the United States (US) and China, suboptimal Brexit negotiations, weakening financial market sentiment and concerns around China's economic outlook. Overall, African economies have been resilient and are gaining momentum through increasing economic diversification and structural transformation to relate jobs and reduce poverty. The in full first (IMF7) predicts global growth of 3.5% in 2019. GDP growth in sub-Saharan Africa is projected to rise to 3.5% in 2019 and to 3.6% in 2020.

4.9.3.4 Rapid urbanization and youthful population

By 2050, Africa's population is expected to double with an estimated median age of 20 and 1.5 billion Africans of working age2. As a result, governments will face increasing demands for investment in education, healthcare and basic services. Opportunities exist to increase financial access through low-cost digital transactions in urban centers and fund housing and small business initiatives. To take advantage of these and other opportunities will require the development of additional skills which will contribute to an upskilled financial services industry.

4.9.3.5 Risk and Conduct

The FSP has a culture of caring, growing, learning and innovation:

- Constructive relationships and ongoing dialogue with regulators and governments.
- Embedding a risk-aware, compliant and ethical culture.
- Strong internal control systems, and risk and compliance frameworks

4.9.3.6 Risks and opportunities

The FSP follows a strategic process to identify the significant risks and emerging threats faced by the group and the countries it operates in. This focuses the attention and prioritizes our responses in addressing the risks, opportunities and threats that may impact on the ability to achieve the strategy.

4.9.3.7 Governance

FSP governance and risk frameworks are integrated across the operations to enable enhanced accountability, effective risk management, clear performance management, greater transparency and effective leadership.

4.9.3.8 Operational Culture

FSP enables people to deliver value to clients in an integrated way, a range of culture programmes and operating model alignment initiatives have been introduced to support the required behavioral shifts and ensure that it has the right people and capabilities in place to achieve integration. The FSP deploys new ways of working to ensure multidisciplinary, agile teams can respond rapidly to changing client and business demands.

4.9.3.9 Compliance

- Policy, regulatory and legal risks in key markets.
- Constructive relationships with regulatory authorities to ensure compliance is adhered to.
- Non-compliance lead Increase in physical security threats/incidents in Africa Regions.

4.9.3.10 Enterprise risk management (ERM)

FSP governance framework sets out the approach to managing risk and capital. The framework consists of governance standards, frameworks and policies and is implemented by board and management governance committees with mandated and delegated authorities. The FSP takes a holistic and forward-looking view of the risks it faces, continually assessing both current and emerging threats in the operating context.

4.9.3.11 Technology Risk

This type of risk is associated with the use, ownership, operation, involvement, influence and adoption of technology within the FSP. It consists of technology related events and conditions which could potentially impact the business, including technology changes, updates or alterations. A key consideration within technology risk is the group's effective use of technology to achieve business objectives and be competitive.

4.10 INTERVIEWS STUDY FINDINGS VERSUS DOCUMENTS STUDY FINDINGS

Although mostly similar, findings from interviews were different to what FSP documents outline and portray. For example, findings from interviews indicated that not all FSP employees follow defined and documented processes. Most of the employees do not read nor implement what the FSP organizational documents state. Employees tend to rely heavily on their experiences and knowledge acquired over the years. For example, most employees fear change, they are comfortable working

with and applying old methods as compared to learning new methods. Digital transformation is about change, the FSP can have the best technology but if leadership is not ensuring that people buy into “transformation journey” nothing will ever transform.

Findings from documents highlighted scholarly knowledge as most align to what literature states; for example, things like how change management, leadership and people are critical to the FSP’s success. The findings from organizational documents are mostly aligning with elements from the study underpinning theories. The theories are the IT capability model, Resource dependency, and the Technological, organizational, and environmental framework (TOE). These theories served as lenses to deeply study and understand what and how South African Financial Service Providers experience digital transformation.

4.12 SUMMARY OF CHAPTER 4

This Chapter focused on data analysis and discussion of findings. Findings were presented and discussed in two parts; firstly, findings from semi structured interviews with the FSP and secondly, findings from the FSP organizational documents. Eight (8) case units, synonymous with business units, of the Financial Services Provider were analysed and their findings discussed. The anonymity of the financial service provider is held. To this point, MM Modiba Bank is used as a pseudonym for the FSP.

Content analysis was used to analyse the FSP organizational documents and thematic analysis was used to analyse the semi-structured interviews data, where themes and the subthemes are the defined objectives and subobjectives of the study, respectively. That is, a theme is synonymous with a study objective. The analysis just like the collection of data was carried out using the theories (discussed in chapter 2) as lenses. Each theme was a section that has sub-sections.

The next chapter interprets the study findings and subsequently provides the framework for digital transformation in South African financial service providers.

5 CHAPTER FIVE: INTERPRETATION OF FINDINGS AND THE FRAMEWORK

5.0 INTRODUCTION

The analysis of data generally allows researchers to organize and provide meaning to large volumes of data but Creswell (2009) argues that the quality data analysis process involves labeling, recognition of trends and patterns and the narrative presentation of data. The previous chapter analyzed data and discussed the study findings. It made sense of narratives from interviews and organizational documents. This chapter interprets the findings. It does so by looking at the findings and attaching the meanings derived with the help of the existing literature to see if there are contradictions or similarities within the context in which digital transformation manifests in South African financial service providers. Subsequently, a framework is given showing the what and how digital transformation could be improved and happen.

The study utilized IT capability model, Resource dependency theory and the Technological, organizational and environmental framework as lenses. These lenses were key to profoundly understanding the phenomenon of digital transformation. The goal of this thesis is to conceptualize and provide a digital transformation framework for Financial Service Providers in South Africa.

5.1 INTERPRETATION OF THE STUDY FINDINGS

This section gives the overall interpretation of study findings derived from the thematic analysis of data collected from interviews and content analysis of organizational documents.

Figure 12: Digital Transformation Elements

The interpretations of findings are provided per theme, following figure 12 above. The interpretation entails the finding, existing literature and the FSP context. A theme is synonymous with a study objective. The findings are a collection from the 8 FSP case units. Findings that appear similar amongst the 8 case units are articulated and interpreted as one. Objective three, which is the analysis of how technology, organizational, and environmental contexts may influence digital transformation is embedded within and interpreted with the first two study objectives and findings thereof.

5.1.1 Interpretation of Theme One: Analyze business strategies and how financial services providers conduct their business.

With this objective, the study sought to understand how financial services providers conduct their routine business, including their operations and IT strategies. This is done with regards to the three contexts as follows:

5.1.1.1 Organizational Context

The descriptions of each of the eight FSP case units are given in the previous chapter and are not to be interpreted, therefore not shown in this chapter.

5.1.1.1.1 FSP Strategy

The findings show that strategies are done from a design practice perspective. There are formulated with the understanding of what the user needs are and what the business goals, the business vision and mission for the FSP as well as the technology capability. However, literature states that strategy involves establishing, executing the main objectives as well as actions taken on behalf of stakeholders by top managers of an organization based on resources analysis and an evaluation of the internal and external world in which the company works (Nag, Hambrick et al., 2007). The contradictions are in the execution, for this FSP top management does not execute strategy at a corporate level but that the business units have their own sub strategies which are based on industry best practices. This then supports the FSP main strategy outlined by top management.

5.1.1.1.2 FSP Leadership role and style

Findings show that a leader is responsible for ensuring that culture is optimal, and members can work together. Leaders ensure that staff attend trainings in order attain skills required and also soft skills with regards to dealing with people as well as

working as a team. Additionally, ensuring that there are no egos and the members can challenge each other. FSP employees are to understand that nothing can be achieved without collaboration and teams must take responsibility for their actions.

Literature argues that the intellectual ability of the leader leads to developing strategies and acquiring knowledge necessary for the FSP vision and mission. The intellectual skills of a leader are dependent on versatility, judgment, imagination, interpersonal interaction and field awareness. Area expertise encompasses tactical, technological and cultural and geopolitical understanding(Goleman 2000). There is an alignment between findings and literature in terms of what leaders should be doing for various teams within the FSP. However, literature likens role of a leader to strategist role.

Findings show that leaders are decisive individuals, they consult and take the employees with on the journey. Every decision taken is in the interest of employees and the FSP journey. Leaders are accountable for every decision they take, and they make all employees responsible for their own actions. Leaders should set direction, be more visionary in their strategy. Individuals and teams perform better when a leader walks the path with them and not just dictate to them what needs to be done and so on. The “why” we are doing this is so important because it creates transparency and eliminate uncertainties. Individuals and teams involved in a project need to understand the “why”, which speaks to reasons and benefits of doing a thing.

Literature cements that leaders who show resilience, tenacity, dedication, and synergistic communication skills can draw out the same qualities within their communities. Good leaders use their own inner mentors to energize their team and organisations and lead a team to succeed (Barthelemy 1997). Additionally, leadership roles are those that facilitate the implementation of a company strategy by building alignment, gaining a share of the mind and increasing the capabilities of others. Leadership roles may be formal, with the necessary decision-making and accountability authority, or they may be informal roles with little official authority (McCauley and Van Velsor 2004).

Leadership style should not be that of fear. Leadership style defined by the FSP is that of empowerment and members are urged to be themselves. The members are encouraged to take a task and run with it without being micro managed.

Literature is in line with findings that a leadership style that eliminates fear suits well with today's culture of allowing workers flexibility to do their jobs and not telling people what to do. Alternatively, create transparency about the goals or expected outcomes and let people and team find the best ways to achieve them (Leybourn 2013). Leadership change is when leaders control and motivate followers to perform beyond the ability they perceive. The right leadership inspires people to achieve unexpected or remarkable results.

5.1.1.1.3 FSP Structure

The FSP has eight technological oriented business units which include Cloud Computing, Backup and Storage, Communications Networks, System Integration, Employee Experience, Work Space, Business Design and the Office of the CIO, each with a focus on a specific business portfolio. The rules applied are aligned to agile at scale and modern software development processes.

Literature states that organisational structure is a system that formally allocates job tasks indicating how they are divided, grouped and coordinated within the organisation (Robbins et al., 2017). Similarly, the FSP structures departments according to specific roles and tasks.

The FSP structure means that the ratio of managers to engineers is highly skewed towards engineers. Additionally, the structure is made up of two key functions, one which focuses on monitoring the environment and another focusing on building solutions. There are more engineers than managers in the structure, however the ratio is high because some managers oversee outsourced contracts/capabilities.

Similarly, literature aligns with findings because it is stated clearly that there are two types of organisational structures namely, mechanistic and organic organisational structure (Shields et al., 2016). The current FSP structural organisation is in line with what is recommended from literature in terms of structural organisation of an organization, the FSP consist of managers and engineers. The mechanistic organisational structure is formalised with high specialisation and administrative intensity whilst the organic organisational structure is less formalised in nature. It is important to note that organizations should endeavour to keep their organisational structure flexible enough to allow adaptation to changes that may be warranted by the constantly evolving market conditions. This is because a fixed organisational

structure can take time to transform and adapt to the changes, which may be needed to sustain business operations (Nene and Pillay, 2019).

5.1.1.1.4 FSP's understanding of digital transformation

The FSP defines digital transformation as a method to take existing processes with the eyes on the customer and transform these processes to be more customer centric and deliver more value. The FSP argues further that automating something that was done manually is not digitization.

Literature (example, Matt et al., 2015) outlines that digital transformation is the use of modern, quick and often-changing digital technology to solve problems. Cloud computing is one example of digital transformation. This reduces reliance on user-owned hardware and raises reliance on cloud-based subscription services. Some of these digital solutions boost traditional software products capabilities (Matt et al., 2015). The findings show that the FSP understand the concept but applying it is a different concept all together as finding shows silo approach amongst various divisions of the FSP.

The public perception around digitisation has been reduced to job losses. However, this should be understood as an evolution no different than the ones that we have seen before. Digital needs to be embraced for the benefits of humanity. As the industry matures and further investment is made in the digital economy, then we will learn and experience its full effect. Within the financial services sector, this could mean further inclusion of those who are currently unbanked (in the informal sector).

Digital transformation means customers having the ability to transact when and where they want to, using whichever platform they prefer. Most customers no longer visit the branches as frequently as they used to. Legacy systems are identified as a hindrance to digital transformation.

Literature defines digital transformation better than how the FSP perceives it. However, technology sometimes get in the way due to older technologies that exit within the FSP. Similarly, main barrier to digital transformation is complex legacy technology (Litvinenko 2019). Findings show that the perception is that digital transformation leads to job losses; however literature perceive that digital transformation has created new business challenges and opportunities as organizations have to compete with agile rivals who take advantage of the low barrier that technology offers for entry (Reinartz et al., 2019). A common

misconception is that digitization essentially involves the use of more IT so that digital technology and data can be used. However, this early definition has largely substituted the above definition which is now associated with holistic views of corporate and social change, commercial development and IT (Chew et al., 2013). Digital transformation strategy's main strengths include organizational redesign and improvements to highly scalable digital platforms (Sia et al., 2016).

5.1.1.1.5 FSP Level of digitisation

The findings suggest that the financial service provider's goal is to move into this phase of digital transformation, technologies have evolved and so as the ways of doing business. For example, marketplaces and ecosystems are completely transforming the way banking is done. Financial service providers are moving most capabilities from onsite premises to applications customers can access using their mobile devices. The FSP is doing its best to take away paper and support banking with technologies of today. However, the FSP acknowledges that digital transformation is the hardest thing to do.

The findings show that the FSP is focused on adopting certain technologies as opposed to digitizing the entire business chain. Literature argues that digital banking sector transition focuses on pursuing sustainability amid a new digital age. Banks have already made significant investments in the technology and infrastructure. The user experience has improved from online banking (bank in your pocket), to the availability of ATMs at every corner (Sia et al., 2016). However, there is some element of alignments between findings and literature as findings also shows that FSP are keen to adopt new technologies. Digital transformation is also characterised by adoption of new technologies. However, only about 30% of processes are digitized which means about 70% are not.

However, literature (example, Cuesta et al., 2015) claims that digital products are not only a new means of access, distribution and transaction management that improves customer solutions, but also an opportunity to attract customers and build loyalty. According to the FSP, digitalization also makes it possible to be proactive in terms of the needs of the customer, thereby enhancing the sales force. In this context, the institutions that are further ahead in the digital transformation process set more ambitious goals with like increasing the effectiveness of product offerings (Cuesta et al., 2015).

5.1.1.2 Technological Context

5.1.1.2.1 FSP Skills and competences required

The findings suggest that competences or skills required within financial services provider are more of software engineering type. Software engineers have more impact in any financial service provider due to the nature of their skills to change and make things more agile. Therefore, the FSP states that the operating model is like 42% of the engineering and 58% is non-engineer, which is a problem. They believe in engineering type of individuals as they tend to make a difference as far as the needed new technologies are concerned. Engineering capabilities required include software developers, solution architects, software architects, database administrators and network engineers. Findings indicate that the FSP uses these competencies to achieve its objectives. Similarly, literature also states that digital technology will change the products, services and business models of an enterprise and its competitive environment (examples, Yoo et al. 2012, Lucas Jr et al. 2013, Fichman et al. 2014, Hess et al. 2016).

The findings outline interesting and challenging times, where technology has a large influence on customer experience. Cloud computing (infrastructure, software, middleware, hardware and software) allows the financial service provider to do this at speed and scale. This is more pronounced in the financial services sector; since there is a high reliance of technology platforms. The FSP is integrated with the global financial system. This sometimes means that it has to build new capabilities, skills, etc. It is important to be selective of the technology you invest in, as not “all that glitters are gold”, while financial service providers are confronted by many alternatives.

There is some level of midpoint where literature meets the findings attained from the FSP. There isn’t much difference as findings and literature agree that technology is crucial in driving business objectives, which can lead to digital transformation. The difference is on how these technologies are organized and managed.

5.1.1.2.2 Measuring performance within the FSP

The findings show that measuring or evaluating performance within the financial service provider plays down to two twins namely availability of systems and time to market the product. Availability of systems talks to how reliable the systems are for customers to transact at any time with little possibility of downtime. The other is the

time to market, and this talks to how long it takes the FSP to deliver new products, solutions and innovations to customers before competitors do so. Customers are looking for new methods of doing things that will make their life easier, hence time to market is a critical metric of measure. However, Sauter et al. (2015) argue that organizational and strategic performance management, including budgeting, tracking, and reporting has a strong impact on Industry 4.0. The aim is basically to understand that different functions of performance measurement are to be carried out according to technological innovations. With this said, this is where literature differs with the findings regarding measuring performance within an FSP.

The finding focused on performance from systems view to people's view as well as some SLAs used to manage some 3rd parties and customers. Sauter et al. (2015) further argue that work is not yet under way in scientific literature that can provide an overview of the effect Industry 4.0 has on the performance measurement system. Literature tends to look at performance as stand-alone variable whereas the FSP performance has one single view measure that incorporates more than one variable namely technology, people, and third parties (suppliers and vendors).

Study findings further show that performance is multi-dimensional; the finances tell a story and behaviour of our people. Performance is measured for two purposes, firstly through Service Level Agreements (SLAs) entered into with customers for operational activities. Secondly, for strategic purposes, which evaluates how they adapt to changing customer needs. The researcher further argues that performance is measured in several ways; this is informed several numerical (quantitative) and non-numerical (qualitative) assessments (for security, availability, agility, down-time, etc.). These are produced to monitor key areas of the service/environment, for example, system stability. The key reason for all these measures is to provide the customer with a service whenever and wherever they want it. Findings show that operational performance is measured more as compared to strategic performance, as suggested by literature.

5.1.1.3 Environmental Context

5.1.1.3.1 FSP Risks identified

Findings show that the financial services provider intellectual property (IP) is at risk because of the dependency on third parties. Literature argues that risk cannot be managed by one entity within an organization. The IT risks talks to the overall

enterprise risk management, which equates the risk assessment to the organization's risk appetite, risk tolerance and how the risks are to be handled. IT risk is to be managed by all the key business leaders within the organization, and is not just an IT department technical issue (Vijayakumar and Arun, 2017). Whether it is the internal stuff or external resources leaving the FSP, leadership must be in the forefront to manage risks, protecting the IP and certain services outsourced.

The findings also show that FSP main risk is availability of systems, meaning if something breaks on one site (system locations) of FSP, it affects other sites. The researcher argues that since risk is part of every financial service provider, leaders need to ensure this is dealt with accordingly.

Literature shows that the creation, maintenance and continuous updates of the Information security management system (ISMS) is very important. Organization employs a systematic approach to identifying, evaluating and managing risk to the security of information (Mehmood and Rafique, 2010). The contradictions are that the FSP hardly outlines security systems in place to deal with security related risks, although this comes out strongly within literature.

Study findings further show that, for the FSP, skills and the cross-border connectivity are key challenges because these two are heavily dependent on vendors. Cross-border transacting is critical for financial service provider; therefore, it should always be monitored. Findings show various risks ranging from financial, staff to aging technologies. Without the necessary technology and training, the financial service provider is unable to always promote a positive experience for employees.

5.1.1.3.2 FSP Description of competition within the industry

Findings show that the industry is very competitive, especially with cloud computing being an emerging trend and in demand skill. This is made worse by the proliferation of large cloud providers, which makes it a global phenomenon. The competition is worsened by existing specialists not willing to transform their skills. The regulator of the industry is moving slower than the pace of technology in terms of cloud computing, and this is an additional source of complexity. Literature argues that pre-digital entities exist in traditional industries such as retail, car or financial services, and that pre-digital economy is now challenged by digital economy (Ross et al. 2016).

The finding show that digitisation has increased the importance of connectivity, for example trading platforms, electronic transfers, online platform, etc., and these require connectivity. Connectivity also provides an opportunity to bank the unbanked. This is the area where FSPs should be focusing on as this is where the competition is going. Literature shows further that in comparison to modern organisations such as Google, Amazon and Tencent, pre digital organisations, when embracing digital technologies, still require changing their entire company, business model and processes (Bharadwaj et al. 2013, Tumbas et al. 2017).

The researcher argues that the FSP environment is very competitive, both from an industry (financial services) and professional (Information Technology) point of views. The competition is around skills which provide a good customer experience. There is a distinguished difference between findings and what scholars state with regards to modern and pre digital organizations. There is some alignment when it comes to skills required in the current digital business. The FSP is currently a pre digital organization making its way to modern organization through the use of modern technologies.

5.1.1.3.3 FSP Compliance

Findings show that the financial service provider has compliance officers who ensure that it is well glued up with legislations and regulations. There is internal and external training as the financial service provider operates outside South Africa too. Each country has compliance officers who ensure staff is educated around country-specific laws, regulations and legislations.

Additionally, findings show that there are specific bodies that provide standards which IT functions need to comply with. Locally, the Payments Association of South Africa (PASA), Data Security and Protection of Personal Information Act (POPI) were identified as key examples to IT systems. To comply with these requirements, the FSP applies IT protocols to mitigate this using the likes of firewalls. The ideal situation is that compliance is followed and managed regularly. The regulator is the South African Reserve Bank (SARB).

Literature argues that there are three practices, governance, risk management, and enforcement (GRC). GRC encompasses the company approach to governance, risk management, and compliance (Scott, 2007). This pillar helps the organization deal with various aspect of compliance. The findings show that there are teams to deal

with compliance issues. However, the variant with literature is that governance, risk management, and enforcement (GRC) is bundled as one pillar not divorced to define compliance aspects. Furthermore, the researcher argues that compliance is critical for the FSP, specifically for prospection of information and anti-money laundering, which is topical in the financial services industry. Compliance to regulations and legislations is always an imperative in the FSP industry. Regulations are embraced as risk mitigation interventions, albeit that regulators are still catching up to the technological advances.

5.1.1.3.4 External Laws affecting the FSP

Findings show three key legislations that are visible within the financial services space, namely that data must be processed in country, customer personal information cannot just be disclosed to anybody, and data security. If the financial service provider breaches such regulations and legislations, it faces a big compliance issue.

Additionally, the findings show that the most important external law the FSP must comply with is BBBEE (Broad Based Black Economic Empowerment), in South Africa. This is why there are some operational resource dependencies on external suppliers.

Literature shows that South African businesses need to take and adhere to Broad Based Black Economic Empowerment (BBBEE) legislative steps. In order to monitor the implementation of BBBEE, the Trade and Industry Department (DTI) created a special BEE unit to oversee compliance and administer BEE scorecard (Kruger, 2011). The study is context based and hence the BBBEE regulation comes out strongly for South African FSPs.

5.1.1.3.5 FSP Fines and penalties

Findings show that the FSP is not immune to fines and penalties. Literature argues that the banking sector is a highly regulated industry; the main purpose of regulation is to ensure discipline and to prevent misconduct. Banking legislation shall protect, on the one hand, depositor, borrower and creditor rights while, on the other, improving system credibility and reputation (Zeidan, 2012), and fines and penalties are imposed if this is not the case. Literature is steadfast that FSPs are required to comply with various industry regulatory laws, government regulations, and even international institutions (Fortado, 2015). These regulations are derived from

parliament's acts, government policy, regulatory policies, international agreements and professional statements, each coming with its own penalty

5.1.2 Interpretation of Theme Two: Analyze financial service provider's IT capability and subsequent resource dependency.

This objective has two parts, namely IT capability and resource dependency, and they are articulated as per below subsections with regards to the FSP technology, organizational, and environmental contexts:

5.1.2.1 FSP IT Capability

5.1.2.1.1 Organizational Context

5.1.2.1.1.1 What the FSP would do differently or change

Findings emphasis that the first thing to change is for individuals and leaders to understand that work is not where FSP employees are, work is what FSP employees do. There is a culture of micro managing where people are and what time they come to the offices. Today's technologies allow individuals to work from anywhere, therefore, employees should be doing what they are hired to do without being followed around. Literature highlights that micromanagement is generally deemed negative, mostly because it shows a lack of workplace equality (Chambers, 2004). The findings and literature are aligned as they both agree that micro management is not a feasible approach in FSPs.

Moreover, findings stress that FSPs should focus on capabilities that they are good at versus what they are not good at. Companies like AWS, Microsoft should be allowed to run with certain capabilities that they are good at. The focus of internal divisions should be integrating, managing, maintaining software, and working with vendors to make systems optimal not compete with what vendors are doing. Literature vigorously states that benefits with respect to outsourcing are things like labour costs, overhead cost, and more flexibility and that the organization is able to focus on other important areas (Malhotra, 2014). However, some of these benefits are in contradiction to some Acts that are against job losses in South Africa. This is purely because once most services are outsourced people tend to lose jobs. The researcher argues that from a change management perspective, financial service

providers need to consider people when making the transformation journey. The need to teach people and put more emphasis, not just on the issue of sympathy but empathy, also plays a key role in understanding where people are coming from to enable the leader to lead them better.

5.1.2.1.2 Technological Context

5.1.2.1.2.1 FSP systems design

The findings stress that no system is immune to failure. However, systems should be built in a manner that when they fail there is little impact to customers. One system failure shouldn't impact all other systems. That is, when one system fails, the functionality should be move to the next available system automatically. The FSPs refer to this as resilience practices around engineering. This is basically known as fault tolerance within the technology and innovation space. Literature outlines that in high availability or life-critical systems used by organizations, FSP's for instance, fault tolerance is particularly sought after (González, O., Shrikumar, H., Stankovicand Ramamritham, 1997). Finding bears a similarity with literature that the ability to maintain functionality when machine parts collapse is called a graceful degradation which talks to fault-tolerance. Fault tolerance is the property that allows FSP's systems to function properly if some of its components malfunction.

Additionally, the findings show that here are several processes during the design identified which are important to the FSP. Things like, monitoring the health of the systems 24/7 to ensure no downtime or recover promptly when that is the case. Literature outlines that system architects have developed various automated tools to manage computer systems operation monitoring (French et al., 2003). Ironically, the complexity and challenge for handling such automated tools are increased in some ways. Literature suggest that some of this tool also adds complexity to FSP's environment while findings suggest that the tools are important for monitoring the health of the systems.

The researcher argues that a 24/7 operations cannot be achieved without staff with the correct skills and experience, especially when it comes to system designs. Things like monitoring tools, as outlined in literature, also require some skills to operate and manage. Systems availability is a demand driven by customer expectations. With the ever-changing world of technology, FSP staff need to keep up

with these changes, therefore FSP need to invest a significant amount of time and money to upskill continuously.

5.1.2.1.2.2 FSP challenges

Findings show that the key challenges include complex and relatively old technologies (legacy systems), which results in high cost to manage. Old technologies need high maintenance and need to be replaced because they easily break. The researcher understands a legacy system as an old, "before" or "previous" computer system, technology, computer system, or application programme, which is still being used. A legacy system is a system with many years of maintenance problems. According to Bennett (1995), legacy systems may be defined informally as “large software systems that we don't know how to cope with but that are vital to our organization”. Legacy software was written with outdated techniques years ago but still does useful work.

Bennett (1995) states that the relocation and upgrading of this baggage from organisation history is difficult for strategies and techniques, from having reasons for expenditures when working with external contractors to using software comprehension and visualisation techniques. Literature is very explicit with regards to legacy systems that organizations needs to find a way to migrate from. The finding is that that it is costly and not always feasible. However, the FSP needs to move with the times in order to adopt to changing environments by introducing newer technology that doesn’t break easily.

Skills are a challenge within the financial service provider; however, the FSP is reliant on things such as graduate programs and experienced resources training of newer staff. Skills are a key challenge within this industry as a lot of experienced people are retiring or immigrating. This results in shortage of capabilities required within the industry. FSP will always experience such challenges with respect to resources and such requires a change in how they recruit and operate. These changes bring new challenges not only to business but also to the education of businesses (Mohamed and Lashine, 2003). Business schools training potential managers in various disciplines are responsible for closing the gap between their graduates’ skills and the skills required on the global markets (*ibid*.,2003). Literature aligns with the findings that challenges of resources and how organizations operate will always be there, especially with regards to skills shortage

Findings also show that legal constraints to security and data protection when adopting cloud computing is a challenge. This is specifically an issue when looking to transfer data from one country to another. Certain categories of data, by law, are not allowed to cross borders. Legislations that protect the transfer of information is not only a South African phenomenon but a common practice around the world. Literature outlines that in an attempt to improve information protection and transfers across borders in Asia-Pacific Economic Cooperation (APEC), the voluntary protection framework was adopted by all 21 member countries in 2004 (Greenleaf, 2009). Therefore, the FSP will need to align with such a framework in order to manage the legal constraints around security and data while doing business with other countries. As literature points out that this is a global standard utilized by various economies, FSPs will have to comply with this. Furthermore, in 2011, APEC implemented the APEC cross border privacy rules system with the goal of balancing "the flow of information and data across borders, essential to trust and confidence in the online marketplace" (Marvin and Bowden, 2014).

The researcher argues that the focus should also be on challenges around culture. The industry has evolved but people are still used to old ways of doing things. Today's systems require new skills, new thinking and new ways of doing things.

5.1.2.2 FSP Resource Dependency

5.1.2.2.1 Organizational Context

5.1.2.2.1.1 FSP suppliers and vendors

The findings show that there are three categories of suppliers or vendors, namely product supplier, system integrators and outsourced processes. Product suppliers supplies the financial service provider with products, system integrators usually work with internal staff to integrate various system components, and outsourced process investigates outsource services. Relationship with suppliers are deemed to be transactional and some are cross transactional. Transactional is more like supplier providing service and getting paid for that and cross transactional is where the financial service provider purchases products off the shelf - and the more the FSP buys the more discount it receives. Supply chain management, according to literature (example, Bal and Demirhan, 2013). , has a huge impact on the quality of

products and services. Furthermore, it increases the value of the relationship between procurement, external suppliers and quality. Adequate choice of suppliers in today's modern supply chains is a strategic issue for the company as a whole and is, therefore, a key strategic factor (Liao and Kao, 2011).

The findings split suppliers and vendors into two categories; however, literature states that such is driven from procurement point of view without organizations trying to sub-divide suppliers and vendors roles. This means that procurement has a practice that needs to be applied when working with external parties on certain services. Procurement supports organization’s strategy; therefore, it is a key driver for suppliers and vendors that are keen to do business with any FSP.

Additionally, the findings show that the financial service provider strategy is to outsource services they deem not core of their competency and they believe a partner can do that better that the FSP itself. The likes of Microsoft and Amazon are known to have strategies that focus solely on providing capability that the FSP will benefit from. Suppliers and vendors bring more than a product or a service, what they bring to the financial service provider is what the FSP does not necessarily have; things such as process, practice, and method kind of resources.

Literature (example, Doval, 2016). argues that the main goal of strategic management is to find the best ways to maintain or increase competitive advantage by reducing costs or separating the FSP from rivals on the market. One of the many ways to achieve this goal is outsourcing, therefore findings suggest that FSP must focus on what it is really good at while literature states that “strategic management” is the key word when considering outsourcing. There is some alignment between findings and literature as they both state an angle that FSP can approach outsourcing from, namely “strategic management” and core competencies. Consequently, the findings describe how the FSP have a dependency on two key stakeholders; one is an Original Equipment Manufacturer (OEM) (Known as Vendor) and the other is a supplier of solutions and services. The two partners are critical to the strategy.

5.1.2.2.1.2 FSP relationship with vendors and suppliers

Findings show that the relationship with big suppliers works well for this financial service provider possibly this is due to experience. Challenges seem to be there when working with medium to smaller suppliers, and not large suppliers. Dealing with

vendors or 3rd parties means that the financial service provider pays for everything because if a scope is not clearly defined this will mean that the supplier will charge them extra for every new piece of work required. Basically, there are no favours when working with suppliers.

The findings show that one improvement that could be done while planning to work with suppliers is to clearly define scope of work before agreeing to terms and conditions. Many account executives (AE) are responsible for extending a buyer's business with suppliers/vendors and building relationships between the two parties to maximize mutual benefits. The account executives (AE) play a central role in developing relationships and is the subject of corporate substantial investment (Boles et al., 2017). Literature suggest that organizations should have account executives (AE) to deal with outsourcing requirements from scope view between supplier/vendor and the organization requesting service. The finding is that various teams are involved in defining scope within suppliers/vendors while literature suggests there should be also be account manager from supplier/vendor. FSP should have an account executive involved to deal with defining scope as well as requirements.

Based on this finding, the researcher echoes that the customer is not inclined to whom they consume the service from, whether one uses 3rd party vendor, customers are interested in the service that they receive. Customers do not differentiate between the financial service provider and its suppliers. Therefore, when the financial service provider and its partners have an integral relationship then this is even more difficult to differentiate.

5.1.2.2.1.3 FSP upskilling clause with suppliers and vendors

Findings show that suppliers like to own the intellectual property in order to safeguard the future business, hence reluctant to train the internal staff. Literature argues that organizations need to continually introduce supplier development programs to maintain high-performance and reliable supply bases to sustain their profitability (Modi and Mabert, 2007). Today’s complex business environment allows companies to use all available resources to remain competitive. Moreover, the quality and price of a product or service on the market is not only a function of the company's resources, but also of the supply network that provides inputs to the company. However, the findings dispute literature because suppliers and vendors tend to be cautious to do skills transfer due to the fear of losing business. Although,

some organizations are interested in acquiring those skills as it is not their core competencies, they rather use this suppliers and vendors to absorb graduates into graduates' programmes.

The findings further show that retention strategies are in place; however, it is always difficult to implement due to factors ranging from money, exploring alternative careers, keeping staff challenged and providing opportunity for growth. The FSP identified the recycling of staff within the financial services industry as a common occurrence. The FSP adds that, with the alternative opportunities for staff (international opportunities, prospects with OEMs, new roles, etc.) it is increasingly difficult to retain them.

The retention of employees relates to an organization's ability to retain its workforce. However, literature states that many views the retention of employees as part of the efforts made by employers to retain their staff, efforts could relate to financial rewards. In this context, retention is not the outcome, but the techniques organization applies (Allen, 2008). The retention of employees can be characterized by a simple statistic (for example, a retention rate of 60% typically implies 60% for the time being with the organization).

The findings show that the FSP and literature look at the retention of employees slightly different. Literature put emphasises on the importance of techniques applied to enforce retention not just have strategies in place, the how part is an important factor. Additionally, the researcher suggests that a distinction should be made between low-level and top-level staff, and attempts at retentions for important, high performing workers should be targeted.

5.1.2.2.1.4 What the FSP would do differently or change when dealing with vendors and suppliers'

Findings show that FSP leadership believes that short term contracts are the way to go if one is to get desired benefits from a supplier. However, this is not always achievable as it is dependent on the nature of work to be done. On the flip side long term contracts require critical assessment and day-to-day type of managing. This is because the financial service provider might be stuck with non-performing and non-delivery company for longer period due to the long-term contract. This creates issues and introduces a lot of legal procedures to get rid of supplier by the time the organisation realises that this is not working, thus shorter contracts are best.

Literature provides mixed reaction towards long term vs short-term contracts. Earl (1996), argues that uncertainty involving IT precludes having a long-term contract. Klepper and Jones (1998) argue that long-term contracts enable the provider to learn about the customer and for both to establish trust. Short-term contracts yield cost savings (Lacity and Willcocks, 1998) while Lee et al., (2004) say the reverse. However, the finding differs with literature because long term contracts are preferred for smaller tasks and are easier to manage while long term contracts require some day-to-day management which introduces complexity.

5.1.2.2.2 Technological Context

5.1.2.2.2.1 FSP supplier and vendor competencies

The findings show that there are capabilities the financial service provider cannot do without. For the FSP the drive is to insource skills that are critical as per strategy. It insources skills like software engineering and data science, as it cannot do without these. The FSP believes it is better to outsource areas the strategy doesn't deem critical at all level of the organisation, example fixing and replacing printers.

Literature argues that suppliers and vendors such as technology suppliers have a relatively small knowledge of the banking environment and that their more commercial off-the-shelf solutions will not assist traditional banks in unravelling their legacy architectures (Megargel et al., 2018). Literature shows that technology vendors offer off the shelve products with limited banking knowledge especially with regards to legacy architecture. The FSP has a number of legacy systems and rely on the vendor capabilities. Operations within the FSP require a diversity of skills, especially as skills are evolving, and new ones are required increasingly. Therefore, FSP leaders should have an ongoing conversation with teams about skilling and re-skilling.,

5.1.2.2.2.2 FSP supplier and vendor challenges

The findings reveal that there are three challenges identified while working with suppliers, first they tend to over sell their capability like what they can do vs what they cannot do. Secondly, they tend to have high staff turnover which turn to introduce longevity problems. Lastly the quality of the work is sometimes questionable since suppliers tend to subcontract some works to other 3rd parties.

A challenge is “a new or difficult task that tests somebody’s ability and skill” (Hornby et al., 1974). Suppliers/vendors problems offer different aspects that test the partnership, skills and abilities of the parties. This problem may have negative project outcome (Pannirselvam and Manually, 2011). Such conflicts between the FSP and the vendor occur during participation and may prevents the FSP from achieving the desired objectives, as claimed by Cata and Raghavan (2006). The origins of these obstacles differ, such as the absence of contractual artefacts (Mani and Barua, 2015) or good management practices and processes (King and Torkzadeh 2008; Rottman and Lacity 2009).

Literature bears similarity with the study findings with regards to capability which talks to suppliers/vendors skills. Furthermore, literature looks into challenges beyond what the findings outlines. Literature expands to elements such as contracts, good management practices and processes and so forth as challenges that FSPs will face if not discussed or planned ahead when dealing with third party.

It may be challenging to manage a relationship with a service provider if they have not gotten it right at inception. Clarifying expectations is a critical step, where you make clear what you want. Once expectations are understood, objective review models are required to evaluate and select 3rd parties. The FSP describes that once the contract has been entered into, proper governance forums to ensure compliance and accountability is put in place.

5.1.2.2.2.3 FSP legacy systems compared to newer organisations new technology

The findings suggest that older financial service providers, such as this one, are in tough economy times as compared to newer financial service providers because older services providers tend to have a lot of legacy systems. Newer financial service providers are at an advantage because they are making use of the new technology which doesn’t easily break, and skills are available to deploy such innovation quicker. Older technology skills are scarce as people are retiring while some are leaving due to the challenges within these environments. Re-skilling of older professionals is a challenge. The only factor that sets this financial service provider apart from others is that they have a large customer base, reputation and financial muscle to deal with challenges around innovations.

Literature argues that legacy core banking systems, inflexible to reform, are at the heart of the issue. Replacing an existing core banking system on a live bank will be

equivalent to carrying out a heart transplant on a runner during a race (Megargel et al., 2018). Moreover, for pre-digital companies, digital transformation is a systemic process of business transformation that is made possible by information systems (IS) followed by fundamental economic and technological changes at both organizational and industrial level (Venkatraman, 1994; Crowston and Myers 2004; Besson and Rowe, 2012). The finding suggests that reason for legacy system is due to the fact that the FSP has been around for years. Managing such systems comes with people and skills challenges. Literature vigorously state that legacy systems may hinder digital business due to lack of flexibility for legacy systems to integrate with newer systems.

5.1.2.2.3 Environmental Context

5.1.2.2.3.1 FSP suppliers and vendors selection criteria

The finding highlights factors such as cost, performance, budget as well as number of defects as core pillars when selecting a vendor or 3rd party to work with. These criteria help eradicate issues of costs, longer turnaround times, out of budget and defective products. Additionally, all these criteria have thresholds that must be met otherwise there are penalties imposed if vendor or 3rd party is found to be on the other side of defined criteria. Factors such as local presence and track record play a role in the selection of vendors; however, he processes is driven from procurement perspective. However, within the South African political construct whereby Broad Based Black Economic Empowerment (BEEE) targets must be driven, most of the OEM's (Original Equipment Manufacturer) must find local partners to be able to fit into the country's political requirements.

According to Gencer and Gurpinar (2007), the selection of suppliers is an initial step in the development of product operations and is vital to companies who want to achieve success under the strict market conditions of today. On the other hand, Shen and Yu, (2013) state that vendor efficiency is one of the most important capabilities for the supply chain. Literature suggests that suppliers/vendors selection is more of a step of product operations combined with capabilities which are deemed critical to the organization's survival. The findings contradict this as more emphasis is put on detailed requirements to be met through the FSP process. Broad Based Black Economic Empowerment (BEEE) requirements are context based on FSPs

operating in South Africa. Additionally, the findings show less emphasis of capabilities in the process as literature suggests. The findings show that the FSP is obsessed with supplier/vendor geographical location and cost of the service rather than on the vendor/supplier capabilities.

OLAs and SLAs are used to manage expectations with suppliers on various products and services they deliver. The OLAs and SLAs are deemed to be very detailed to the level of defining who does what when, how and what happens if not done because this help clarify things from on set. However, OLAs and SLAs do not mean you will not have a bad experience. This can still happen. The idea is to ensure that suppliers know they are a partner not just completing a transaction with the financial service provider.

5.1.2.2.3.2 FSP leadership Influence with regards to insourcing and outsourcing

Findings show that leadership has limited influence as there are procurement processes to be followed and they do not want to hinder the process. Leadership will only check who is on the financial services provider's book then if there is a company known to have certain competencies required, it will be recommended. However, the identified supplier still needs to go through the procurement process and meet all required like all other bidding suppliers.

Additionally, findings show that part of the core leadership role is to ensure that all bidding suppliers adhere to process and meet the defined requirements. There are no favours for the sake of getting the project as this may derail projects because of supplier mismatch. Therefore, all participating suppliers will have to meet the criteria defined. Procurement is at the heart of all these processes.

Hirschheim and Lacity (2000) stress the need to extend back sourcing research to complement existing outsourcing awareness. Many company leaders also face problems with vendor relationships (Deloitte, 2015, p. 3). According to the accounting firm Deloitte (2015), lack of flexibility, internal acceptance, low quality and lack of expertise are the key barriers to outsourcing and the primary justification for moving to another solution. Hartman et al. (2017) continue to say that the knowledge of the back-sourcing mechanism and related factors is insufficient. On this basis, it is assumed that the same applies to insourcing.

Literature explicitly state that there is limited research within the insourcing and outsourcing processes organizations embark on. Therefore, leadership influence regarding outsourcing and insourcing research seem to be under development. The findings put emphasis on the procurement process rather than leadership influence when coming to outsourcing and insourcing journey. Literature and findings bear similarity when coming to challenges leaders face with regarding to outsourcing and insourcing.

The findings show that leadership influence is limited when suppliers or 3rd parties are required to deliver certain capabilities. Leadership cannot influence on who gets business as this process is factually driven and business value proposition is at the heart of this decisions.

5.1.2.2.3.3 OLAs and SLAs with suppliers and vendors

Findings highlight that suppliers thrive when they are tasked to deliver standard, simple and straight forward type of tasks that are not complex but tailored to the financial services required. The delivery time is quicker if it is an off-the-shelf product. However, if the requirement is to do something far complex like developing a new software, things get complicated, from requirements collection to deployment of the product. Issues of quality, cost and time arises when the FSP embark on such a project and the only way is to hold these suppliers accountable through service level agreements (SLA) and operations level agreements (OLA). Literature review outlines that service level agreements have been in place since the 1960s, in the same way that quality management systems have begun, and that production has spread to different industries (Hiles and Hon, 2016). Moreover, the use of SLAs and OLAs has now expanded through to the public sector. SLAs and OLAs are products of the unhappiness of IT services and the absence of objective metrics to determine service quality. SLAs and OLAs outlines each internal support group's obligations towards other support groups, including the mechanism and timetable for providing their services. The goal is to provide a simple, descriptive, and observable overview of the relationship between the internal support and the service provider.

Findings further extend that management of service levels are critical in 3rd party relations. In the financial service provider where systems need to be available 24/7, this level of customer experience performance requirements is passed on to partners. For example, mobile applications are common in the financial service provider and customers have become expectant.

Therefore, literature and findings are aligned in a sense that they both argue that SLAs and OLAs are metrics to determine service quality. However, literature goes further than the findings by stating that SLAs and OLAs require a clear definition of service boundaries as well as service responsibilities from supplier and vendor.

It is important that as part of contracting upfront, the exit arrangements are also included, if not then it may be difficult to hold the contactor accountable. Unless there is further contracting, there might be less incentive for the partner to oblige. Transition from one contract to another is costly and also present risk.

5.1.2.2.3.4 FSP supplier and vendor geographical preference

Finding highlight that there are various factors that prompt FSP choice of supplier since the FSP is a crossborder and an international financial service provider. However, thing like the size of the firm, the present location helps if issues arise. For example, IBM Company operates globally and locally, so this would be the kind of suppliers the FSP is keen to work with, for size and presence.

Third-party risk management market report highlight that North America has many leading players in the industry that offer innovative solutions to all vertical industries in the regions (Cunningham, 2006). In addition, the regional scope and strategic investments, alliances and significant research and development programs lead to the strong deployment of affective solutions. The report suggests that most of the leading suppliers and vendors have global footprint, which is what the finding suggests, as a method to ensure that operation in different part of the world where FSP operates is smooth.

5.1.3 Interpretation of Theme three: Determine how digital transformation should manifest for South Africa Financial Service Providers

This section conceptualizes how digital transformation should manifest in South African financial service providers. The conceptualization is informed by the interpretation of findings, literature and underpinned by the Organizational, Technology, and Environmental contexts of the financial service provider.

Figure 13 below, is a high-level bird's view of the framework for digital transformation for South African Financial Service Providers. It is worth noting that the conceptualized framework is actually the recommendations the thesis makes to

practice and theory, informed by the interpretation of the study findings and literature.

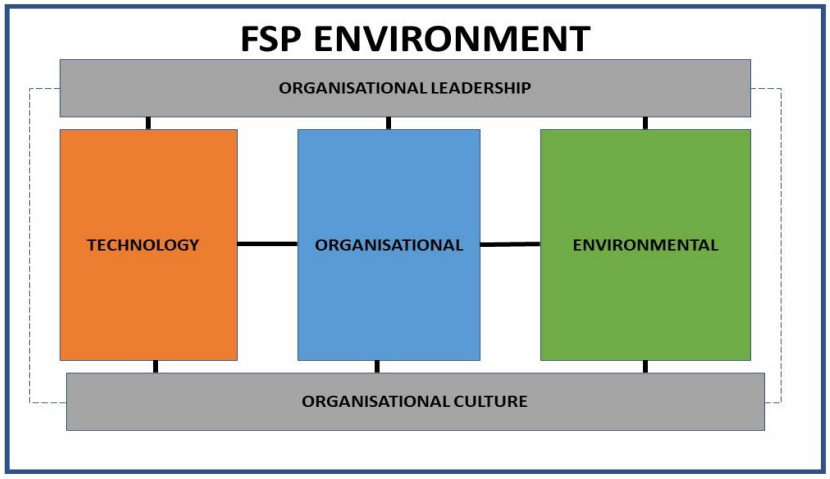

Figure 13: Highlevel digital transformation framework for South African financial services provider

The following characterizes and describes the recommendations making up the high-level framework

Table 13: Recommended elements for Digital Transformation

Critical Factors	Elements
Organisation Leadership	Role of leadership Client focus Employee engagement Employee development and training/Coaching
Organisational Culture	Micro managing Changes from leadership perspective Changing mind-set Collaboration opportunity Alignment to objectives Autonomy Information sharing Visibility of vision
Technology	FSP Skills and Competencies FSP Measure performance Digitisation Banking platforms Cloud Computing Artificial intelligence Design thinking Data privacy and security Digital currencies and blockchain technology Technical Skills development Cybersecurity Technology adoption Enterprise technology System Integration
Organisational	FSP People FSP Description FSP Strategy

	FSP Leadership FSP Structure FSP Digital transformation FSP Level Digitization FSP Business activities Value creation model Partnership Change Management Business activities and outputs Global disruption Regulations Financial inclusion Infrastructure development Financial Outcome Impact FSP Performance indicators (Net promoter score (NPS) and Client satisfaction index (CSI)
Environment	FSP Risks, FSP Competition FSP Compliance, FSP External laws FSP Fines and penalties Politics, Economics Rapid urbanization and youthful population Governance. Operational Culture Enterprise risk management (ERM) Technology Risk

5.2 STUDY RECOMMENDATIONS

The preceding table gives the factors and elements for digital transformation in South African financial service providers. The following discusses these as the study and thesis recommendations:

a) Organisation Leadership

Organizational FSP leadership should play a critical role in influencing the direction of the digital transformation. The success for digital transformation will have to be driven with a sound leadership. Therefore, FSP leaders should combine market understanding and position to drive economic aspirations, be forward thinkers and ethical with honesty.

b) Organisational Culture

Organizational culture affects how people communicate, the sense in which information is produced, the resistance they may have to changes, and eventually how they share (or how they don't share) information. There is diversity in South African culture, therefore, necessary to create a positive social and psychological environment within the financial service provider in order to drive the transformation

A positive FSP culture should reflect in shareholders, board members, leadership and employees' in order to have shared values, beliefs and ideals. At the end of the day digital transformation requires a culture that allows employees to buy into FSP strategy and executing it through the right leadership. In other words, the FSP Leadership should drive and cultivate things like vision, principles, traditions, structures, symbols and language, perceptions, the environment, attitudes and behaviours as part of the necessary culture for the transformation.

c) Technology

Technology has a number of impacts, all contributing to the development of advanced digital business. For the FSP, technology should comprise of emerging technologies, techniques, systems, skills, methods and processes used in the achievement of objectives, through the digital transformation in a financial services provider.

d) Organisational

The organisational context relates to what characterises the financial service provider including its resource dependencies. The strategies anchored, by a corporate vision and goals, should be implemented driven by the size of the financial service provider and how far it needs to expand. This should drive the need to digitally transform.

e) Environment

The environmental context relates to the environment in which the FSP conducts its business, which includes but not limited to the competitors, the industry and the government.External environment factors such as government regulations, legislations and competition tribunals and internal factors such as compliance and policies should be used as catalysts for digital transformation.

f) South African Context

The argument is that what works and how it works in other countries, notably i.e. developed countries, does not necessarily work as expected in South Africa. For example, a number of South African businesses, such as FSPs, service a variety of customers who live in rural, urban and suburb areas. However, rural area customers have limited technological accessibility as compare to urban and suburbs customers.

Consequently, access to FSP services should be enhanced through digital technology. There have been many developments in establishing digital transformation over past two decades in the “Western World”. Within South Africa, this has been even more of a challenge, due to issues of infrastructure, language, cultural diversity and political backdrops should be considered. Politically, requirements like the Broad Based Black Economic Empowerment (BEEE) are unique to South Africa and therefore should influence and be influenced by the transformation.

g) Organizational Documents

They should be a cohesion and synergy between what the organizational documents say and what the operational experience. Activities and operations should, for the most part, follow what the financial service provider sets out to do on paper. Employees should read and implement what the FSP organizational documents state. Employees should not rely heavily on their experiences and knowledge against the FSP’s written strategies and operations.

The digital transformation framework in South African financial service providers is given next.

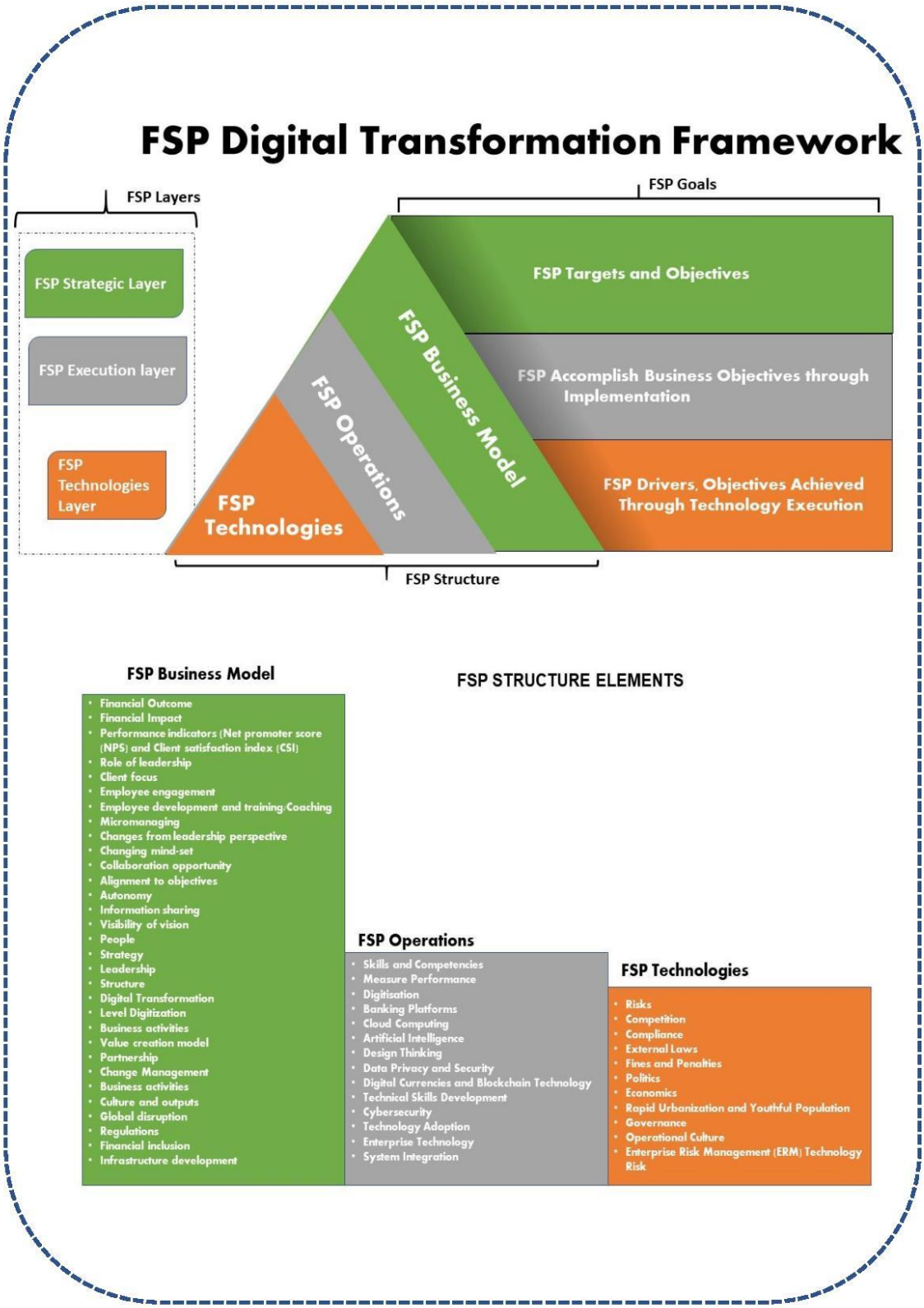

Figure 14. A Digital Transformation Framework for South African Financial Service Providers

5.3 SUMMARY OF CHAPTER 5

This chapter gave the interpretation of findings. The interpretations of were provided per theme and subthemes, and a theme is synonymous with a study objective. The interpretations entailed the study finding understood against the existing literature and the theoretical lenses. Theoretical and practical recommendations were then given. The recommendations are the bases for the framework for digital transformation in South African financial service providers. The next chapter reflects on the research journey by evaluating and concluding the thesis.

6 CHAPTER SIX: EVALUATION OF THE RESEARCH, THESIS CONTRIBUTIONS, AND CONCLUSION

6.0 INTRODUCTION

This previous chapter interpreted the study findings. The interpretations of findings were provided per theme and subthemes where a theme is synonymous with a study objective. The interpretations entailed the study findings understood against the, existing literature and the theoretical lenses. The chapter reflects on the research journey by evaluating the study, giving the contributions, and concluding the thesis. Myers and Klein (2011) outlined evaluation principles specific to information systems interpretive studies. Such guidelines concentrate on skepticism, perception, generalization, contextualization, dialogical reasoning, communication between the subjects and researchers as well as the hermeneutic circle.

The next section evaluates the research through the intended goal and objectives. The research problem that motivated the study is recapped first. The study goal and objectives are discussed to evaluate to what extent they were achieved.

6.1 THE RESEARCH PROBLEM

The information systems business administration problem was that, although digital transformation is imperative if the South African Financial Service Providers are to have an edge and stay competitive, there is lack of the “know what” and the “know how” to digital transformation. Digital transformation is in its infancy stage, especially within South African Financial Service Providers. Therefore, there is lack of an appropriate theoretical and practical description of how digital transformation should happen, sensitive to and cognizant of the South African financial service provider context.

As the systematic review of literature has shown, for the most part, the existing frameworks for digital transformation were conceptualized with the western world context in mind. This then means that they may not necessarily be fully applicable to the South African context, which minimizes the chances of transformation success. To this point, the contextualized theoretical and practical knowledge gaps identified are what this thesis sought to address. The contribution of this thesis in addressing this key issues and knowledge gaps through the framework that is sensitive to the South African FSPs context.

6.1.1 Study goal

The goal of the research was to conceptualize a digital transformation framework for South African Financial Service Providers. This goal was achieved, and digital transformation framework for FSP is provided in the previous chapter

6.1.2 Primary Research Question

In line with the goal, the question driving the study was *How should digital transformation manifest for South African Financial Service Providers?*

Using the IT capability model, Resource dependency theory and the Technological, organizational and environmental framework as theoretical lenses, this complex question was addressed. And the framework for how digital transformation should manifest in South African financial service providers is shown discussed in the previous chapter.

6.1.3 Study objectives

The first objective was to analyze business strategies and how financial service providers conduct their business, understanding how FSPs conduct business required analyzing the business processes, the organizational structure, the technological and environmental contexts.

The second objective was to analyze financial service provider's IT capability and subsequent resource dependency. The study findings show that digital transformation is dependent on and influenced by the FSP's information technology capability and resource dependency on suppliers, vendors and other relevant third parties. IT capability relates to IT strategy, IT processes, Metrics, IT organization, skills, structure and the know what and know how to digital transformation.

The third objective was to analyze how technology, organizational, and environmental contexts may influence digital transformation, it is worth noting that context help create a unique nature. The digital transformation in other environments around the world would not necessarily bear same experience as South African experiences, Politics, compliances, culture, language, and environmental risks, to name a few, are some of the factors and contexts which make South African unique to other parts of the world.

The fourth and final objective was to determine how digital transformation should manifest for South Africa Financial Service Providers. The determination on ways to improve and transform a financial service provider digitally was done from achieving

the first three study objectives. Ways of doing digital transformation sensitive to South African context are shown and given in the framework

6.2 STUDY LIMITATIONS

The goal of this study was to conceptualize a digital transformation framework for financial service providers, in the context of a South Africa.

The initial data collection program involved executives from various FSPs in order to collect profound quality data. The prospective participants constantly modified times and cancelled meetings, so the analysis could only cover eight cases. . Access to organizational documents was also a difficult task. Sensitive documents such as the risk reports, financial reports, and annual performance-plan templates which could have helped paint a real FSP life, were not granted. The granted documents, interviews, and observations did provide the necessary insight though.

The other limitation lies in the time frame for the study. The study was cross-sectional and therefore collected empirical evidence that showed how and what was at the time. Although not a limitation that affects the findings of the study, a longitudinal study would provide evidence over an extended period of time.

The other limitation lies in the fact that this was a case study of a financial service provider. Although a multi-case study of several financial service providers would be ideal for analysing varied FSPs, the case study allowed for a profound analysis of several service provider business units, the eight case units. The eight case units provided rich data about a financial service provider.

6.3 RECOMMENDATIONS FOR FUTURE RESEARCH

- Future research should take each element of the framework and analyze its influence and role in the financial service provider digital transformation journey.
- Future research could analysis financial service provider documents to get a real-life picture towards digital transformation.

- Future research validate framework quantitatively to strengthen the study findings, prove its generalization capability, and make it attractive to a wide audience.
- This was a cross-sectional study of a financial service provider. Future research could do a longitudinal study.
- This was a case study of a financial service provider. Future study could do a multi-case study of several financial service providers.

6.4 THESIS CONTRIBUTIONS

This section highlights the doctorateness of the thesis by providing the contributions thereof. The contributions are four folds, namely theoretical, practical, methodological, and contextual.

6.4.1 Theoretical

The theoretical contribution of the thesis is in the digital transformation framework for South African financial service providers. The systematic review of literature has shown knowledge gaps on the what and the how digital transformation should manifest in the context of South African financial service providers. The related studies and frameworks were mostly underpinned by business models or a single theoretical framework. This thesis triangulated three theoretical frameworks, namely the Resource dependency theory, the IT capability model, and the Technology, organizational, and environmental framework. These theories were used as lenses in the collection and analysis of data, which helped provide rich findings that could inform the theoretical knowledge base for digital transformation in financial service providers. The theoretical knowledge gap identified in the introductory chapter has been bridged. There are new theoretical elements added to the digital transformation literature.

6.4.2 Practical

The practical contribution of this thesis is in the framework for how digital transformation should practically manifest in South African financial service providers. The framework shows the practical elements to be considered and to be cognizant of if the financial service provider wants to transform to digital business. The practical value is in describing local compliance, regulations, legislations and challenges relevant to South African financial service providers and digital

transformation contexts. The practical knowledge gaps identified in the introductory chapter are now bridged.

6.4.3 Methodological

Most of the existing digital transformation studies and literature follows a positivistic philosophical stance where numbers are used to explain the casual relationships amongst constructs. The present study followed an interpretivist philosophical stance where rich data described the practical influence of elements for the digital transformation phenomenon. A case study research strategy allowed for a profound understanding of the transformation phenomenon in its real-life context. The know-what and the know-how of digital transformation is now provided. That is, the thesis has established the interpretivist philosophical stance and the case study strategy as an appropriate and an alternative way to understanding the digital transformation in financial service providers.

6.4.4 Contextual

The thesis acknowledges that how and what works in other countries in Europe, North America and the East does not always work as is in a developing country like South Africa. Financial service providers and South Africa are unique. The political, cultural and environmental contexts are different. For example, there is diversity of cultures, diversity in educational and social backgrounds in South Africa, and therefore, digital transformation and financial service provision ought to be sensitive to that uniqueness. This thesis has bridged the contextual knowledge gap identified in the introductory chapter.

6.5 CONCLUSION

The thesis shows a research journey embarked on to address four business administration key issues. These four issues, namely theoretical, practical, methodological and contextual knowledge gaps have now been bridged. The business administration information systems problem was that, although digital transformation is imperative if the South African financial service providers are to have an edge and stay competitive, there was inadequate “know what” and “know how” to digital transformation, in this digital era. Digital transformation is in its infancy stage, especially within the South African financial service providers. There was lack of an appropriate theoretical and practical description of how digital transformation should happen, sensitive to and cognizant of the South African financial service provider context.

As the systematic review of literature has shown, for the most part, the existing frameworks for digital transformation were conceptualized with the western world context in mind. This then meant that they may not necessarily be fully applicable to the South African context, which minimizes the chances of transformation success. To this point, the contextualized theoretical and practical knowledge gaps identified are what this thesis addressed. That is, the contribution of this thesis is in addressing these key issues and knowledge gaps through the framework that is sensitive to the South African financial service provider context.

PEER-REVIEWED PUBLICATIONS FROM THE THESIS

Michael Makgale Modiba, Ray M Kekwaletswe. (Volume. 5 Issue. 5, May - 2020), "Technological, Organizational and Environmental Framework for Digital Transformation in South African Financial Service Providers". *International Journal of Innovative Science and Research Technology (IJISRT). www.ijisrt.com. ISSN - 2456-2165, PP :- 180-196.*

Michael Makgale Modiba, Prof Ray .M Kekwaletswe, Moroka Dominic Komati .(2020). IT Capability Framework for Digital Transformation in South African Financial Service Providers. *International Journal of Engineering Trends and Technology, 10(2), 24-39.*

Michael Makgale Modiba, Prof Ray .M Kekwaletswe .(2020). Resource Dependency Framework for Digital Transformation in South African Financial Service Providers. *International Journal of Computer Trends and Technology, 68(4),107-125.*

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APPENDIX A: ETHICS APPROVAL

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Economic and Management Sciences Research
Ethics Committee (EMS-REC)
Tel: 018 299-1427
Email: Bennie.Linde@nwu.ac.za

15 November 2019

Prof R Kekwaletswe
Per e-mail
Dear Prof Kekwaletswe

EMS-REC FEEDBACK: 15112019
Student: Modiba, MM (33647062)(NWU-01416-19-A4)
Applicant: Prof R Kekwaletswe – PhD in Business Management

Your ethics application on, *A digital transformation framework for medium enterprises in South Africa*, that served on the EMS-REC Ad Hoc Business School meeting of 15 November 2019, refers.

Outcome:

Approved as a minimal risk study. A number NWU-01416-19-A4 is given for three years of ethics clearance.

Kind regards,

Prof Bennie Linde
Chairperson: Economic and Management Sciences Research Ethics Committee (EMS-REC)
Potchefstroom Campus

APPENDIX B: INFORMATION LEAFLET AND INFOMRED CONSENT

FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES

SCHOOL OF BUSINESS

INFORMATION LEAFLET AND INFORMED CONSENT

PROJECT TITLE: **A DIGITAL TRANSFORMATION FRAMEWORK FOR MEDIUM ENTERPRISES IN SOUTH AFRICA**

Primary investigator: Mr MM Modiba, MTech (Information Networks)
Study promoter: Prof Ray M Kekwaletswe, PhD: Information Systems

Dear Potential Research Participant,

You are invited to participate in a study that forms part of my formal doctoral studies. This information leaflet will help you to decide if you would like to participate. Before you agree to take part, you should fully understand what is involved. You should not agree to take part unless you are completely satisfied with all aspects of the study.

WHAT IS THE STUDY ALL ABOUT?

The proposed study addresses the insufficient literature regarding South African Medium Enterprises and the digital transformation phenomenon. In this era, digital transformation is considered important to assist Medium Enterprises in South Africa in their digital business and responsive to customers as well as stakeholder needs. The study is necessary due to the fact that, digital transformation is in its infancy stage; therefore, no known best practices for it, especially with regards to South African Medium Enterprises.
This being a doctoral study in business administration, the study bridges the knowledge gaps against the limited research into digital transformation of Medium Enterprises in the context of South Africa. The study uses IT capability model, resource dependency theory and the technological, organizational and environmental theory as lenses underpinning the study. These theories will serve as lenses to deeply understand what and how South African Medium Enterprises experience the digital transformation. The goal of this study is to conceptualize a digital transformation framework for Medium Enterprises in South Africa.

WHAT WILL YOU BE REQUIRED TO DO IN THE STUDY?

If you decide to take part in the study, you will be required to do the following:

- To sign this informed consent form
- Participant will be interviewed regarding their experience on the information system capability, resource dependency and technology, organizational and environmental activities and usage in a context of digital transformation. Representing the diverse population, participant with varied background (age, experience, position, gender and qualifications). The interview might consist of +- 20 questions should not take more than

90 minutes to discuss.

- 3 to 6 participants at the firm will participate in interview who are knowledgeable about the information system capability, resource dependency and technology, organizational and environmental internal and external activities. You will be required to provide your opinions and/or insights of the study theme during the discussion that will last for approximately 15 to 20 minutes. Note that the interviews discussions will be audio- recorded / video-recorded.
  .

WHAT ARE THE POTENTIAL BENEFITS THAT MAY COME FROM THE STUDY?

The benefits of participating in this study are:

The value will be in framework contextualised, digital transformation will be understood better in the context of South Africa. Additionally, how medium enterprises can conduct their business using digital transformation.

WILL YOU RECEIVE ANY FINANCIAL COMPENSATION OR INCENTIVE FOR PARTICIPATING IN THE STUDY?

Participants will not receive any financial compensation or incentive for participating in the study.

You will not be financially compensated for participation in the study; however a sponsor

will
provide five branded coffee mug with the participating company logo and a designer cap to each research participant.

WHAT ARE YOUR RIGHTS AS A PARTICIPANT IN THIS STUDY?

- Your participation in this study is entirely voluntary. You have the right to withdraw at any stage without any penalty or future disadvantage whatsoever. You don't even have to provide the reason/s for your decision.
- Protection from harm (emotional and physical) - The questioned asked will be to gather participants' views, experiences and opinions about organizational level or understanding of digital transformation. Participants will not be asked potentially sensitive, incriminating, confidential or personal questions about themselves. That is, participants or his/her family/community will not be at risk or be adversely affected by their participation in the research project, including any form of cultural, social or financial risk/harm.

HOW WILL CONFIDENTIALITY AND ANONYMITY BE ENSURED IN THE STUDY?

- All information obtained during the course of this study is strictly confidential. The study data will be coded so that it will not be linked to your name. All the data sheets that have been collected will be stored in a secure place. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. The information received during the project will only be used for research purposes and will not be released for any employment-related performance evaluation, promotion and/or disciplinary purposes.
- All the data that you provide during the study will be handled confidentially.This means that access to your data will be strictly limited to the researcher, the supervisors of the study, data coders, translators, field workers, members of the research ethics committee and/or the designated examiners (appointed by North West University). Also, your data and personal information will be kept and stored in a confidential format that will only be accessible to the researcher. Any information that is obtained in connection with this

study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law.

- Confidentiality of data will be maintained - in other words your identity will only be known to the researcher. I will remove/mask all identifying data on transcriptions and final report documents (e.g. thesis and journal articles).Thus, your identity will not be revealed during or after the study, even when the study is published or used in any format. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law.
- Only the researcher and the supervisors will have access to the interviews data and recordings. Your answers will be totally anonymous and your identity will not be revealed under any circumstance. Also, nobody outside the study panel and/or research ethics committee will be able to connect any answer to you in any recognisable way. The results of this study might be published in a scientific journal and/or presented at scientific meetings, but again without revealing the identity of any research participant. Documents and recording will be stored in a safe place for three years, after which they will be destroyed.
- Generally speaking, the researcher can assure you that he/she will keep private everything you tell him/her or communicate for the study during the interview. However, there are times where a researcher cannot keep things private or confidential. The researcher cannot keep things private or confidential when:
  - The researcher learns that a child or a vulnerable adult has been abused;
  - The researcher learns that a person plans to hurt him or herself;
  - The researcher finds out that a person plans to hurt someone else.

IS THE RESEARCHER QUALIFIED TO CARRY OUT THE STUDY?

The researcher comes from the same geographical region as you (participants). This means that he/she deeply understands your cultural context and can fluently speak the local languages. The researcher has a master's degree and is familiar the processes and conducts to be observed when carrying out a study.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

Not yet, this document forms part of the ethical clearance approval and will be submitted for purposes. Only the proposal was approved on 4th July 2019, at proposal defence with comments and those comments have been addressed.

WHO CAN YOU CONTACT FOR ADDITIONAL INFORMATION REGARDING THE STUDY?

The primary investigator, Mr Michael Makgale Modiba, can be contacted during office hours at Tel (011) 636 6778, or on his cellular phone at 082 -799 5523. The study promoter, Prof RM Kekwaletswe, can be contacted during office hours at 082 685-2903. Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the NWU Research Ethics Committee.

DECLARATION: CONFLICT OF INTEREST

This research study is not funded by any institution, however the researcher applied for part-time bursary at North University – so far researcher carries cost for this research.

A FINAL WORD

Your co-operation and participation in the study will be greatly appreciated. Please sign the informed consent below if you agree to participate in the study. In such a case, you will receive a copy of the signed informed consent from the researcher.

PARTICITIPANTS

Names and sensitive information of the participants **will not be** published as discussed with participants, all information remains confidential and private.

CONSENT

I hereby confirm that I have been adequately informed by the researcher about the nature, conduct, benefits and risks of the study. I have also received, read and understood the above written information. I am aware that the results of the study will be anonymously processed into a research report. I understand that my participation is voluntary and that I may, at any stage, without prejudice, withdraw my consent and participation in the study. I had sufficient opportunity to ask questions and of my own free will declare myself prepared to participate in the study.

Research participant's name: _____ (Please print)

Research participant's signature: _____

Date: _____

Researcher's name: Michael Makgale Modiba (Please print)

Researcher's signature: _____

Date: _____

VERBAL CONSENT

(Applicable when participants cannot read or write)

I hereby declare that I have read and explained the contents of the information sheet to the research participant. The nature and purpose of the study were explained, as well as the possible risks and benefits of the study. The research participant has clearly indicated that he/she is aware of the right to withdraw from the study at any time, for any reason and without jeopardizing his/her relationship with the research team. I hereby certify that the research participant has verbally agreed to participate in this study.

Research participant's name: _____ (Please print)

Researcher's name: _____ (Please print)

Researcher's signature: _____

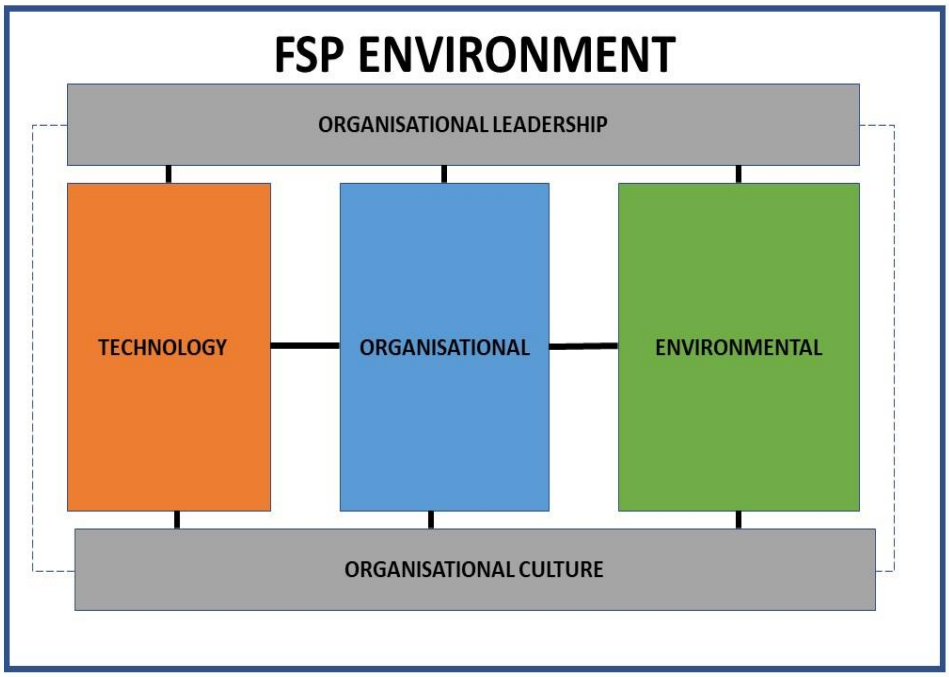
Date: _____

APPENDIX C: SAMPLE OF INTERVIEW GUIDE AND ORIGIN OF QUESTIONS

Interview Questions CIO's, senior managers, middle managers and variety of IT specialists	**Theoretical Framework or Model**	**Elements used**
1. Describe to me what your business unit really does? 2. Describe you unit's business strategy (and also IT strategy, if applicable) 3. How do you measure/gauge your performance within your unit? 4. In your view how would you improve performance or the business processes?? 5. Describe the IT/business infrastructure within your unit? 6. What are the skills and competences required to make your unit functional/operate?	**IT Capability Model**	• IT Strategy • IT Processes and Metrics • Infrastructure • IT Organization (Skills, Structure and Knowledge)
1. Are in of your business processes dependent on external suppliers/vendors? Which are those? Describe how you work with suppliers (third party)? Which vendors are those? International/local? 2. How do you ensure they do what is expected? Any service level agreements? 3. What criteria do you use to select/source suppliers? 4. Describe the influence of leadership with respect to sourcing and outsourcing decisions? 5. What are the limitation do you have as a leader around insourcing and outsourcing decisions and working with third parties? 6. What are the challenges and issues working with third	**Resource Dependency Theory**	• Organizational Effectiveness • Organizational Environment • Constraints • Interdependent agents: - Outcome Interdependence - Behaviour Interdependence

parties?		
1. How many people do you have in your unit? Describe the different roles and positions? 2. Describe the competition within your industry and how does (the role etc.) your unit ensure that the bank remains competitive 3. How are the external laws/acts affecting your unit? which laws/acts are those? 4. How do you ensure compliance with these laws/acts? 5. How do you work around these laws/acts? 6. How do you ensure your unit is complaint to the act/unit? 7. Describe the possible risks within or identifiable your unit? 8. Describe the role of leadership in ensuring the unit is compliant?	**Technological, Organizational and Environmental Theory**	• Technology (Equipment and Processes) • Organization (Characteristics and resources of the firm, size, degree of centralization, degree of formalization, amount of slack resources, and linkages among employees) • External Task Environment (includes the size and structure of the industry, the medium enterprises competitors, the macroeconomic context, and the regulatory environment)

APPENDIX D: BIRD'S EYEVIEW OF DIGITAL TRANSFORMATION FRAMEWORK FOR SOUTH AFRICAN FINANCIAL SERVICE PROVIDERS



APPENDIX E: A DIGITAL TRANSFORMATION FRAMEWORK FOR SOUTH AFRICAN FINANCIAL SERVICE PROVIDERS