

The Enablers and Hinderances of Digital Transformation in a South African Corporate Bank

Jared Pillay

Student number: 2288443

Supervisor: Dr Manessah Alagbaoso

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ABSTRACT

The success of many firms in the age of the fourth industrial revolution depends on the astuteness and pace of their response to digital transformation (DT). DT is a business phenomenon that is yet to be fully understood across industries and sectors. In the banking industry, most research pertaining to DT has focused on retail banking. There is very little research about DT in corporate banks and no research about it in a South African corporate bank, to the best of the researcher's knowledge.

The purpose of this research study was to assess DT in a South African corporate bank (referred to as "CIB") by focusing on the following objectives: assessing the DT journey of CIB, assessing the digital maturity level of CIB, and investigating the enablers and hinderances of DT in CIB. The study adopted a qualitative research design and used a case study strategy of enquiry. Twelve participants that comprised executives, leaders, and employees of the bank were purposively selected and interviewed to generate rich data.

The research findings showed that CIB is a complex environment with customer segments, products, and services that exhibit different characteristics related to volume and variation. CIB has achieved much progress regarding DT in a relatively short while. However, there are hinderances to DT that emanate from an imbalance in top-down and bottom-up strategies, the absence of a unifying digital vision, a conservative approach to innovation, misalignment with the greater banking group, and a lack of consistent basic digital knowledge.

At a high level, this study recommends that CIB considers the elements of strategy and vision, people and culture, process and governance, and technology capabilities that are discussed at length in this research report to formulate a unified business strategy and vision for DT amongst other recommendations.

The complexity of corporate banking means that DT will most likely have boundaries because of the necessity of physical engagement, and the requirement for human cognitive abilities, creativity, and ingenuity is likely to remain in this environment for longer than in most other sectors and industries.

KEYWORDS

Digitalisation, Digital Transformation, Digital Maturity, Digital Strategy, Digital Vision, Corporate Bank.

TABLE OF CONTENTS

List of Tables.....	viii
List of Figures	ix
List of Abbreviations and Acronyms.....	x
CHAPTER 1. INTRODUCTION.....	1
1.1 STATEMENT OF PURPOSE	1
1.2 BACKGROUND OF THE STUDY	1
1.3 RESEARCH PROBLEM	4
1.4 RESEARCH OBJECTIVES.....	7
1.5 RATIONALE.....	8
1.6 DELIMITATIONS OF THE STUDY.....	8
1.7 DEFINITION OF TERMS	9
1.8 ASSUMPTIONS	10
1.9 CHAPTER OUTLINE	11
CHAPTER 2. LITERATURE REVIEW	13
2.1 INTRODUCTION	13
2.2 BACKGROUND.....	13
2.2.1 CORPORATE BANKING DYNAMICS	15
2.2.2 FINTECHS	16
2.2.3 DIGITAL TECHNOLOGIES.....	16
2.2.4 THE IMPORTANCE OF DATA	17
2.2.5 DIGITAL TRANSFORMATION KEY CONSIDERATIONS.....	18
2.3 THEORETICAL FRAMEWORK FOR DIGITAL TRANSFORMATION.....	19
2.4 STRATEGY AND VISION	21
2.4.1 DIGITAL STRATEGY	21
2.4.2 DIGITAL FOCUS	23
2.4.3 INVESTMENT	24
2.5 PEOPLE AND CULTURE.....	26
2.5.1 DIGITAL SKILLS.....	26
2.5.2 LEADERSHIP	27
2.5.3 CULTURE	29
2.6 PROCESS AND GOVERNANCE	30
2.6.1 DIGITAL INNOVATION.....	30
2.6.2 CHANGE MANAGEMENT.....	31
2.6.3 GOVERNANCE	32
2.7 TECHNOLOGY AND CAPABILITIES	34
2.7.1 DISRUPTIVE TECHNOLOGY ENABLERS	34
2.7.2 PLATFORM ARCHITECTURE AND BUSINESS MODELS	35
2.7.3 DIGITAL SERVICE MASTERY	36

2.8	THEORETICAL FRAMEWORK OF DIGITAL MATURITY	37
2.8.1	BEGINNERS.....	39
2.8.2	FASHIONISTAS.....	39
2.8.3	CONSERVATIVES	39
2.8.4	DIGITAL MASTERS.....	40
2.9	CONCEPTUAL FRAMEWORK	42
2.10	CONCLUSION OF LITERATURE REVIEW	42
2.11	RESEARCH QUESTIONS.....	44

CHAPTER 3. RESEARCH METHODOLOGY.....45

3.1	RESEARCH APPROACH	45
3.2	RESEARCH DESIGN	46
3.3	POPULATION AND SAMPLE.....	48
3.3.1	POPULATION	48
3.3.2	SAMPLE AND SAMPLING METHOD	49
3.4	DATA-COLLECTION METHODS	49
3.5	THE RESEARCH INSTRUMENT	49
3.6	PROCEDURE FOR DATA COLLECTION	51
3.7	DATA-ANALYSIS STRATEGIES AND INTERPRETATION	51
3.8	POSSIBLE LIMITATIONS AND CHALLENGES OF THE STUDY	52
3.9	QUALITY ASSURANCE.....	53
3.9.1	TRANSFERABILITY	53
3.9.2	CREDIBILITY	53
3.9.3	DEPENDABILITY	54
3.10	ETHICAL CONSIDERATIONS.....	55

CHAPTER 4. FINDINGS.....56

4.1	INTRODUCTION	56
4.1.1	RESEARCH QUESTIONS.....	59
4.2	WHAT IS THE NATURE OF DIGITAL TRANSFORMATION IN A SOUTH AFRICAN CORPORATE BANK?	59
4.2.1	AMBIDEXTERITY	65
4.2.2	COMPETITOR THREATS	72
4.2.3	CHALLENGES	74
4.3	WHAT IS THE DIGITAL MATURITY OF THE SOUTH AFRICAN CORPORATE BANK?.....	75
4.3.1	DIGITAL CAPABILITIES	76
4.3.2	LEADERSHIP CAPABILITIES	84
4.4	WHAT ARE THE ENABLERS OF DIGITAL TRANSFORMATION IN A SOUTH AFRICAN CORPORATE BANK?	93
4.4.1	STRATEGY AND VISION.....	93
4.4.2	PEOPLE AND CULTURE.....	103
4.4.3	PROCESS AND GOVERNANCE	105
4.4.4	TECHNOLOGY AND CAPABILITIES	107
4.5	WHAT ARE THE HINDERANCES OF DIGITAL TRANSFORMATION IN A SOUTH AFRICAN CORPORATE BANK?	110

4.5.1	STRATEGY AND VISION.....	110
4.5.2	PEOPLE AND CULTURE.....	116
4.5.3	PROCESS AND GOVERNANCE	125
4.5.4	TECHNOLOGY AND CAPABILITIES	128
4.6	CONCLUSION	130

CHAPTER 5. DISCUSSION.....132

5.1	INTRODUCTION	132
5.2	WHAT IS THE NATURE OF DIGITAL TRANSFORMATION IN A SOUTH AFRICAN CORPORATE BANK?	132
5.3	WHAT IS THE DIGITAL MATURITY OF THE SOUTH AFRICAN CORPORATE BANK?.....	140
5.3.1	DIGITAL CAPABILITIES	141
5.3.2	LEADERSHIP CAPABILITIES	144
5.4	ASSESSING THE DIGITAL MATURITY OF THE SOUTH AFRICAN CORPORATE BANK.....	148
5.5	WHAT ARE THE ENABLERS OF DIGITAL TRANSFORMATION IN A SOUTH AFRICAN CORPORATE BANK?	150
5.5.1	STRATEGY AND VISION.....	152
5.5.2	PEOPLE AND CULTURE.....	158
5.5.3	PROCESS AND GOVERNANCE	159
5.5.4	TECHNOLOGY AND CAPABILITY	161
5.6	WHAT ARE THE HINDERANCES OF DIGITAL TRANSFORMATION IN A SOUTH AFRICAN CORPORATE BANK?	163
5.6.1	STRATEGY AND VISION.....	166
5.6.2	PEOPLE AND CULTURE.....	168
5.6.3	PROCESS AND GOVERNANCE	175
5.6.4	TECHNOLOGY AND CAPABILITIES	176
5.7	CONCLUSION	178

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS183

6.1	INTRODUCTION	183
6.2	CONCLUSIONS REGARDING RESEARCH QUESTIONS	184
6.2.1	WHAT IS THE NATURE OF DIGITAL TRANSFORMATION IN A SOUTH AFRICAN CORPORATE BANK?	184
6.2.2	WHAT IS THE DIGITAL MATURITY LEVEL OF A SOUTH AFRICAN CORPORATE BANK? .	187
6.2.3	WHAT ARE THE ENABLERS OF DIGITAL TRANSFORMATION IN A SOUTH AFRICAN CORPORATE BANK?	193
6.2.4	WHAT ARE THE HINDERANCES OF DIGITAL TRANSFORMATION IN A SOUTH AFRICAN CORPORATE BANK?	197
6.3	CONTRIBUTIONS TO RESEARCH	201
6.4	RECOMMENDATIONS	202
6.5	SUGGESTIONS FOR FURTHER RESEARCH	205

REFERENCES	207
APPENDIX A: Interview schedule	213
APPENDIX B: Email invitation to participants	217
APPENDIX C: Participant information sheet.....	218
APPENDIX D: Consent form.....	220

List of Tables

Table 1: Key definitions of the study	9
Table 2: Factors to determine digital maturity (Capgemini Consulting, 2011; Westerman et al., 2014).....	41
Table 3: Data-analysis process, adapted from Creswell and Creswell (2018) .	52
Table 4: Factors to determine digital maturity (Capgemini Consulting, 2011; Westerman et al., 2014).....	76
Table 5: Key categories, themes, and sub-theme details related to the enablers of digital transformation.....	151
Table 6: Key categories, themes, and sub-theme details related to the hinderances of digital transformation	164
Table 7: Important insights about corporate banking and CIB	181
Table 8: Enablers of digital transformation	196
Table 9: Hinderedances of digital transformation	200

List of Figures

Figure 1: The Evans digital transformation theoretical framework (Evans, 2017)	20
Figure 2: Digital transformation strategy as a support to corporate strategy (Matt et al., 2015)	21
Figure 3: Westerman digital maturity quadrants (Westerman et al., 2014)	39
Figure 4: Conceptual framework	42
Figure 5: Categories, themes and sub-themes that emerged from data collected	57
Figure 6: Prevalence of categories, themes, and sub-themes (Treemap).....	58
Figure 7: Digital maturity of CIB (Westerman et al., 2014)	149

List of Abbreviations and Acronyms

4IR	Fourth Industrial Revolution
AI	Artificial Intelligence
API	Application Programming Interface
CAQDAS	Computer Aided Qualitative Data Analysis Software
CEO	Chief Executive Officer
CDO	Chief Digital Officer
CIB	Corporate and Institutional Bank
CRM	Customer Relationship Management
DT	Digital Transformation
Fintech	Financial technology company
IS	Information System
IT	Information Technology
KPI	Key Performance Indicator

CHAPTER 1. INTRODUCTION

1.1 Statement of purpose

The purpose of the case study described in this research report is to explore the hinderances and enablers of digital transformation (DT) in a South African corporate bank through the lived experience of a cross-section of its leaders and employees.

1.2 Background of the study

Industrial revolution can be described as the restructuring of economies and societies because of tectonic shifts in connectivity, automation, and productivity (Park, 2018; Schwab, 2016).

The first industrial revolution was spurred by the discovery of combustible fuels such as coal and petrol, the introduction of the steam engine, and the ensuing mechanical means (Park, 2018; Schwab, 2016). The second industrial revolution was prompted by the advent of electricity, which powered factories, enabling efficient assembly lines and mass production and resulting in a step change in productivity (Schwab, 2016). These developments played a pivotal role in the progress of transportation, which underpinned globalisation (Park, 2018). The third industrial revolution was characterised by computers and digital interfaces, such as the internet, which transformed the ways in which we communicate with each other, and the connectedness of machines (Park, 2018; Schwab, 2016).

The fourth industrial revolution (4IR) is a dramatic evolution from its predecessor and is largely based on digital technologies such as artificial intelligence (AI), machine learning, the internet of things, big data, and advanced robotics, to name a few (Park, 2018; Schwab, 2016). However, the true potential of these technologies emanates from the ability to integrate them in a solution, often resulting in an outcome greater than the sum of its parts that can lead to step changes in connectivity, automation, and productivity (Park, 2018; Schwab, 2016).

These step changes will have a vast impact on firms, and, as Schumpeter pointed out, the ability to organise and extract value through innovation, entrepreneurial ability, and new technologies will ensure the survival of the firm (Schumpeter, 1942). In 2014, the three largest companies in Silicon Valley, which is recognised as a technology frontier, had a market capitalisation of approximately 27 times more, with similar revenues and 10 times fewer employees, than the largest three companies in the city of Detroit in 1990 during the automotive boom (Schwab, 2016). This indicates the opportunities and threats of a quickly developing new paradigm in business driven by connectivity, automation, lower costs, and platform business models that enable rapid and huge scale for firms (Schwab, 2016).

Technological or digital disruption is a consequence of the rapid pace of change to economies, societies, and markets instigated by digital technologies (Schwab, 2016). Disruption is synonymous with born-digital companies that have changed the complexion of entire industries through platform business models. Examples of these are Amazon, Facebook, and Alphabet (Westerman et al., 2014).

For firms to maintain and generate new competitive advantages and achieve higher productivity, performance and profits, they need to embrace DT to comprehensively develop capabilities to exploit digital technologies in the way they deal with customers, execute business processes, and create and deliver value (Westerman et al., 2014).

DT can be considered to be “the sum total of all organisational change efforts in response to technological disruption. It results in marked change in the form and nature of the organisation, especially so that the organisation is improved” (Armstrong & Lee, 2021). Vial (2019) suggests that the objective of DT is to speed up the organisational changes within the firm that enable the firm to take advantage of data, advanced computing power, and new methods of communication and connectivity.

The pace of DT is not the same for all industries. The Digital Vortex is a global survey that measures firms’ investment, timing, means and results with respect to DT (Global Center for Digital Business, 2021). In the 2021 report, Financial

Services rounded off the top five industries ranked according to efforts recorded in pursuit of DT (Global Center for Digital Business, 2021). Financial services is the second most likely industry to be disrupted by digital trends (Harvard Business Review Analytic Services, 2017).

Firms, including corporate banks, are being impacted at the cross-roads of the digital-physical continuum, requiring them to be adept in both high-touch, personable experiences and high-tech sophisticated and capable virtual channels. The competitive environment requires corporate banks to continuously reassess their combinations of physical and virtual customer-facing channels to ensure that they are anticipating and meeting changing customer expectations (Pramanik et al., 2019). This unique set of circumstances poses a distinct challenge for pre-digital corporate banks, which are traditional corporate banks that began trading prior to the era of the 4IR, that intend to embark on DT.

Digital maturity is a measure of the adeptness of firms in generating leadership and digital capabilities for DT of business processes, customer-engagement methods, and business models (Westerman et al., 2014). To be able to adapt to the changing environment, firms need to consider their organisational capacity to build digital capabilities and specific leadership capabilities to deliver on DT (Westerman et al., 2014). A study by PWC Strategy& (2017) revealed that amongst most major South African banks, cost-to-income ratios exceeded 50 per cent, and DT and investment in IT solutions are seen as the most effective ways of reducing and controlling cost. In addition, the South African landscape is unique in that whilst certain sectors of public and business life may lag the developed world, South Africa has a stable and sophisticated banking industry that has acknowledged the potential of DT for general progress and to address many systemic societal challenges. A significant number of South African consumers have access to digital platforms (Jenkin & Naude, 2018) and, unlike most emerging market economies, the South African banking industry is not characterised by incessant state-ownership and direct fiddling (Jenkin & Naude, 2018; Lynn et al., 2020).

DT is not well understood and the failure rates for firms that have attempted some form of it are high (Souza-Zomer et al., 2020). McKinsey estimates failure rates

in the region of 70 per cent, with a possible reason for this being the myriad of DT frameworks that exist (El Safadi, 2021). Consensus and homogeneity are lacking regarding a unified DT framework, and specific industry and firm requirements could be one of the causes (Chanias et al., 2019; Krasonikolakis et al., 2020). In addition, many firms confound DT with adopting the latest technologies, when it is more about transforming people, their attitudes, and mindsets, to reimagine their businesses in a digital context where necessary (El Safadi, 2021).

Even when leaders know and understand the relevance of DT for their organisations, there is a dearth of well-structured information to justify DT as an integral part of business strategy, regarding the framework they should use, the potential risks or challenges, and the methods for setting objectives and measuring results (Morton & Palfreyman, 2022). Formulating a comprehensive DT framework capable of serving firms in various industries and situations, including corporate banks in South Africa, will improve DT success rates (El Safadi, 2021).

1.3 Research problem

The competitive landscape for banks, including corporate banks, is changing rapidly. Factors responsible for disruption within the industry include competition from non-banking financial institutions, greater regulatory intervention, increased capital requirements with sophisticated measurement and reporting techniques, ever-changing customer demands, commoditisation of products and services, and margin compression (Bemmann & Karthik, 2018; Deloitte, 2020). Banking is an industry with high barriers to entry, and a challenge in terms of market share could be gradual instead of immediate. The threat of eroding returns may only become apparent after a long period of time. Banks can choose to stay ahead of this curve by decisively adapting to the changing environment or they can adopt a wait and see approach, which could have negative consequences (Bemmann & Karthik, 2018; Deloitte, 2020).

Within the South African landscape, banks are making significant investments in digital technologies within front office, middle office, and back office to enhance customer and employee engagement and to extract cost efficiencies (Ernst & Young, 2022). Traditional banks are seeing rising competition from non-bank entities, such as private credit funds, insurance companies, retailers, and telecommunications providers. As a result, incumbents are turning to digital solutions to drive cost efficiencies, the integration of strategic partners into their supply chains to fulfil gaps in their offerings, and data analytics and insights to drive value creation and new methods of delivery (PWC Strategy&, 2017). Banks are implementing new technology platforms to extract maximum value from emerging technologies and to improve the integrity of cyber and IT operations (PWC Strategy&, 2017).

Banks in South Africa have a long history of incorporating technology into their operations, especially in the automation of processes (Coetzee, 2018). Having consistently deployed a level of technology, they may be unaware of the increased pace and possibilities offered by new technologies that will impact customer-engagement channels, business processes, and business models (Chanas et al., 2019). Intensifying this potential issue, many organisations mistake DT for converting analogue processes to digital processes and limit its scope to extracting cost savings and efficiencies (Krasonikolakis et al., 2020). Scanning their internal and external environments might identify such organisations as well-performing banks with no immediate pressure from their clients and other stakeholders (Chanas et al., 2019). However, digital technologies are rapidly changing customer expectations and being able to anticipate new customer expectations and reconfigure resources and capabilities to remain competitive in the digital era will be vital (Vial, 2019). All banks aspire to sustainability and longevity of their business models. This means that meeting the needs of stakeholders today whilst preparing for the future is crucial (Ukko et al., 2019). A factor that could impede the progress of DT within banks and industries such as healthcare is the high level of regulation, which includes data security and privacy considerations (Souza-Zomer et al., 2020).

Firms such as corporate banks usually have a higher frequency of human interaction with customers that fall mainly into the business-to-business category. These banks may experience a higher degree of complexity and variation in their products and services; for example, a combination of transaction volumes that are higher for trading activities and lower for lending activities. In comparison, firms such as retail banks generally have higher volumes and a higher degree of standardisation with respect to the business-to-customer environment and its transactions (Matt et al., 2015). As such, it would be of interest to observe the differences in approach to DT for a primarily business-to-business firm such as a corporate bank.

Retail banks have been the prime examples of banking firms used in academic research into DT and innovation to date (Krasonikolakis et al., 2020). This was confirmed by a survey of previous studies related to DT within banks undertaken by the researcher. One study identified in the survey focused on the impact of digital technologies by examining data from eight European retail banks and interviewing senior professionals using the grounded theory exploratory design (Krasonikolakis et al., 2020).

Another study was conducted on four large North American banks to examine their approaches to DT, which was achieved by analysing their public statements, categorising them into themes to unearth factors of DT and the intersections between factors (Pramanik et al., 2019). These large North American banks comprised far more than retail operations; however, many of the key words that surfaced and were expounded by the study related to retail banking.

A further study focused on digital workplace transformation in financial services by sending out a quantitative survey to managers of 79 financial institutions, which included banks and insurance companies in Bosnia and Herzegovina (Selimovic et al., 2021).

Lastly, a seminal work produced by Bemann and Karthik (2018) concentrated on the digital journey for investment banks in India and the ASEAN region (Indonesia, Malaysia, Philippines, Singapore, and Thailand).

These studies and others like them suggest that research undertaken in the field of DT within banks is skewed towards retail banks and, further to this, there is no focus on South African corporate banks. This represents a definite gap in the research domain with regard to the evaluation of DT in a South African corporate bank. It also establishes it as an under-researched area that will benefit from a qualitative study to unearth new information.

Summary of opportunities from DT in South African corporate banks:

- Generate new competitive advantages and achieve higher productivity, performance, and profits to improve customer engagement, business processes and value creation.
- Advantages gained from leveraging data resources, advanced computer power and new methods of communication and connectivity.

Summary of challenges that can benefit from DT in South African corporate banks:

- Meeting customer expectations of engaging via digital channels.
- Improving revenue and cost structures.
- Competing with non-banking financial institutions.
- Compliance with onerous and sophisticated regulation.

1.4 Research objectives

1. To assess the digital transformation journey of a South African corporate bank.
2. To assess the digital maturity level of a South African corporate bank.
3. To investigate the enablers and hinderances of digital transformation in a South African corporate bank.

1.5 Rationale

Studies that examine DT within banks generally focus on retail banks. Corporate banks are mainly business-to-business operations that have a higher degree of sophistication and complexity in their products and services and a greater requirement for face-to-face customer engagement than do retail banks. A corporate bank in South Africa provides a unique contextual background for assessing DT and its hinderances and enablers. Thus, a corporate bank forms the basis of this study.

By having conducted research in this situation, this study contributes to future academic research that pursues consensus in the form of a comprehensive DT framework by adding its findings to other studies pertaining to different industries, sectors, and cases. If such a comprehensive framework is possible, it will be a welcome guide for any practitioner that is responsible for implementing DT to improve a firm's value proposition for customers and to create additional value for stakeholders.

In a regulated environment such as the South African banking sector (Jenkin & Naude, 2018), a DT framework will assist policy makers to identify areas for intervention and to measure compliance with policies.

1.6 Delimitations of the study

In scope

The focus of this study is on the hinderances and enablers of DT and digital maturity in a South African corporate bank.

Out of scope

The study does not cover other corporate banks, other types of banks, or geographies besides the selected South African corporate bank.

The study does not extend to the customers of the subject bank.

The study excludes practical recommendations for areas such as, but not limited to, the following:

- Treatment of privacy and data
- Policy, governance, and ethics related to DT
- Impact on labour from DT
- Change management frameworks for DT
- Investment decision theory for selecting new technologies
- New technologies

1.7 Definition of terms

Table 1: Key definitions of the study

Term	Definition
Digitisation	Digitisation refers to the process of converting analogue information such as text, pictures, or sound into a binary or digital format that can be processed by a computer (Armstrong & Lee, 2021; Bloomberg, 2018).
Digitalisation	Digitalisation refers to the wholistic process of change where digital technologies can improve business models and interactions between people (Armstrong & Lee, 2021; Bloomberg, 2018; Gartner, 2022).
Digital transformation	Digital transformation deals with a comprehensive approach to the transformation of products and services, business processes, customer experiences, business models, and organisational design to leverage digital technologies (Matt et al., 2015).

Digital maturity	Digital maturity is the level at which a firm can generate leadership and digital capabilities to support superior performance through digital transformation (Westerman et al., 2014).
Digital strategy	Digital strategy can be described as developing organisational readiness to leverage digital resources and capabilities that are not confined to information technology (IT), for digital transformation in support of the firm's corporate strategy and to realise additional value for stakeholders (Bharadwaj et al., 2013; Matt et al., 2015; Pramanik et al., 2019)
Digital vision	Digital vision describes the focus of digital transformation and how it will improve all aspects of the firm, including client experiences, business processes, and its business models. It also concerns where in comparison to its peers the firm aims to rank in terms of its digital and leadership capabilities (Morton & Palfreyman, 2022; Westerman, Bonnet, & McAfee, 2014).

1.8 Assumptions

- The South African corporate bank can benefit from DT.
- Participants have a reasonable understanding of DT and the impact it has on the South African corporate bank.

1.9 Chapter outline

Chapter 1

This chapter provides the purpose and background of the research project, articulates the research problem, outlines the research objectives, justifies the significance of the research, lists its delimitations, and provides a list of key definitions.

Chapter 2

This chapter deals with the literature review conducted as part of the study. It provides a detailed background of the literature related to DT, unpacks theoretical models for DT and digital maturity, and defines the research questions for the study.

Chapter 3

In this chapter, the research methodology for the study is set out in detail. It describes the research approach, research design, data-collection method, the population and sample, the research instrument, procedure for data collection, the data-analysis strategy, possible limitations of the study, quality-assurance mechanisms, and ethical considerations of the study.

Chapter 4

This chapter presents the findings from the interviews conducted with 12 interview participants, who were employees of the South African corporate bank that formed the subject of the study. The main categories, themes and sub-themes that emerged from the study are presented with the research questions in mind.

Chapter 5

The findings from the research study pertaining to DT in a South African corporate bank and its digital maturity are discussed in relation to the literature reviewed for the study in this chapter.

Chapter 6

In this chapter, the conclusions in response to the research questions are presented and recommendations are made on the basis of these conclusions. Further to this, the contributions of this research project to research and suggestions for further research are presented.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

The locus of this study is around DT, with the study investigating hinderances and enablers of DT in a South African corporate bank. This chapter provides a detailed background of the concept of DT, describes its importance, and provides key thoughts on the subject by examining previous research.

The chapter then considers the Evans digital transformation framework (Evans, 2017) as a theoretical framework for the study. A thorough examination of the Evans digital transformation framework (Evans, 2017) is undertaken, with each of the subsections of the framework discussed and various sources of mostly academic literature synthesised to produce corroborating views related to the subsections. This forms the basis of the study and highlights the evaluation categories and themes required to assess DT in the South African corporate bank.

The Westerman digital maturity model (Westerman et al., 2014) is then explained. This model is used to assess the digital maturity of the South African corporate bank.

Finally, a conceptual model is presented that illustrates the fundamental categories and themes emanating from the literature review that serve as a guide for the field work of the study in order to meet the research objectives.

2.2 Background

DT deals with a comprehensive approach to the transformation of products and services, processes, customer experiences and business models, and organisational readiness to leverage digital technologies (Matt et al., 2015). DT improves the connection of people, things, and information (Ellstrom et al., 2022). Firms must take into account many important considerations when deciding to embark on a journey of DT. These considerations might include the current state of technology within the firm and within its broader industry and competitor

environment; relevance of products, services and business models; industry-specific digital requirements from customers; its effectiveness in enabling the firm to continue to compete and grow; the firm's organisational readiness for DT; and changes in regulation (Ko et al., 2021; Pramanik et al., 2019; Vial, 2019).

Firms can become stagnant over time when they lose their awareness of and readiness to respond to changes in their environment. This issue can be intensified by the prolific digital technologies that have exacerbated the fast pace of change, catalysed globalisation of businesses, and introduced further volatility, uncertainty, ambiguity, and complexity into the operating environment (Setia et al., 2013; Souza-Zomer et al., 2020; Teichert, 2019). Firms rely on their entrepreneurial capability to scan internal and external environments and to react to market changes by reorganising resources and by deploying new capabilities and existing capabilities in new ways. Increasingly, digital capabilities and the leadership required to integrate them into business operations are being described as vital for meeting current-day challenges (Ellstrom et al., 2022; Westerman et al., 2014). Evaluating public statements from banks reveals that DT is close to the top of the agenda (Pramanik et al., 2019). Organisational strategies are being reworked to represent a dovetailing of business, IT, and digital strategies to deliver step changes in productivity and profits (Bharadwaj et al., 2013).

DT will manifest differently amongst industry participants and as a result it has the potential to be disruptive of industries (Kretschmer & Khashabi, 2020). The strategic agility of firms in sensing and adapting to changes is key to perpetuating or improving a firm's competitive advantages and building new core competencies (Morton & Palfreyman, 2022; Pramanik et al., 2019). Innovation and entrepreneurial capabilities are the hallmark of organisations that are successful over long periods of time (Morton & Palfreyman, 2022). For a firm to continue to win, it requires strategies that are flexible enough to serve the current requirements of the firm and its stakeholders whilst continuously developing resources and capabilities for differentiation in the future, which could be human or technological (Ukko et al., 2019).

This duality requires strong leadership and long-term investment horizons. DT occurs when the entire firm is in step, using a combination of technologies across functions to drive innovation and extract maximum value from its operations, products, and services (Pramanik et al., 2019). The ability of incumbent firms to respond to changing customer preferences and to generate improved performance by leveraging digital technologies defines a firm's digital maturity (Ellstrom et al., 2022). As a firm embraces DT and improves in digital maturity, it has the potential to catalyse broader innovation across the firm and improve its value proposition for customers (Vial, 2019).

DT affects the ability to compete and can be used by corporate banks in particular ways. These are outlined in the sections that follow.

2.2.1 *Corporate banking dynamics*

A corporate bank may deal with companies as its clients; however, it is the leaders who manage and/or own these companies that engage with the bank and make decisions. As the next generation of leaders emerges on the customer side, the expectations of these leaders regarding products and services are going to be influenced by their use of digital technologies. Digitally led products and services are becoming synonymous with transparent pricing structures, speed, and convenience, all of which influence customers' expectations. As digital technologies lower switching costs, clients may become more price inelastic. Whilst incumbents in the past may have relied on loyalty, disruptors will push the convenience and interoperability of products and services to attract these clients (Krasnikolakis et al., 2020).

Industries such as banking rely on high barriers to entry, such as regulation and high capital requirements, as a buffer from potential competitors (Krasnikolakis et al., 2020). However, present-day regulators, aware of the capabilities of new technologies, are using them to level the playing field for new entrants and to increase competition within markets. For example, regulators might remove information asymmetries in the market and improve access to critical payments' infrastructure for the benefit of new entrants and, ultimately, customers

(Krasnikolakis et al., 2020). This may result in new competitors entering the market that do not resemble the incumbent banks.

As mentioned in Chapter 1, the South African banking industry has not been averse to using technology which was initially to transform processes, drive cost savings and efficiencies. They have made sizeable investments to improve operations and customer service within front-office, middle-office and back-office (Ernst & Young, 2022; PWC Strategy&, 2017).

2.2.2 Fintechs

Fintechs can be defined as new financial practices that use technology to improve financial products and services (Schueffel, 2016). Fintechs, although not as dominant as may once have been thought, can disrupt the business models of traditional banks. This is sometimes achieved by homing in on a section of the customer journey and delivering it in a much more thoughtful and convenient format using digital technologies. In the process, Fintechs compete for share of wallet (Bemmann & Karthik, 2018). Fintechs can cause disintermediation within value chains when they create direct marketing channels and reduce costs for the customer (Vial, 2019). Whilst Fintechs can be a threat, they may also represent an opportunity for collaboration with traditional banks when they can leverage each other's strengths. The introduction of born-digital competitors such as Fintechs can serve as a motivation for incumbent firms to embark on a journey of DT (Krasnikolakis et al., 2020).

2.2.3 Digital technologies

Digital technologies and interfaces provide firms with data-gathering opportunities that can lead to the creation of data assets. Through analytics, valuable insights can inform capabilities for identifying profitable customer segments, personalised customer experiences, improving efficiencies and refining or redefining value capture and delivery methods (Setia et al., 2013; Vial, 2019). Digital technologies enable the flow of information within the organisation and with its partners that creates ecosystem and network effects (Kretschmer &

Khashabi, 2020). The connectivity and flow of information form the backbone of the flexible and adaptive capabilities required for continuous improvement. The quality of information influences firms' response times to changing customer preferences, encourages knowledge sharing within the organisation, and improves the adoption of digital interfaces by employees (Setia et al., 2013).

2.2.4 *The importance of data*

Leveraging data to remain in sync with customers can have broader positive effects on the customer-centric and customer-service culture of the firm. As firms pioneer new digital frontiers, they reap the rewards of information-driven, connected organisations that exemplify efficient communication networks, and that culminate in formidable competencies to sense and respond to the changing business landscape (Setia et al., 2013). Fast and convenient access to accurate information is an important factor for employee engagement and can affect a firm's ability to attract and retain premium talent (Pramanik et al., 2019).

Armed with data, firms are informed in ways that allow them to explore newly formed connections between functions and cross-selling initiatives and to expose new bundles or configurations of products and services through digitally enabled business models. It is no longer feasible for firms to control all aspects of the value chain. Creating capabilities for external connectivity, information flow, and communication allows a firm to augment its operations with external partners' products and services to fill gaps within its own offering. This frees it to focus on high-value customer-centric activities instead. Investing in data-driven capabilities to exploit the abundance of information, especially within knowledge enterprises such as corporate banks, can increase the frequency of product launches, optimise client engagement, and substantially improve decision making up and down the firm (Bharadwaj et al., 2013). Firms that develop capabilities to take advantage of data, information and knowledge create conditions for employees to sense and seize entrepreneurial opportunities and reorganise resources much faster (Souza-Zomer et al., 2020).

2.2.5 *Digital transformation key considerations*

A possible blind spot for firms exists when they focus on digitisation efforts, converting analogue information into digital form. This narrow focus means that they miss the effects of digitalisation or DT, which encompass a broader set of changes, including transforming customer experiences, products and services, business processes and business models to optimise the gains from digitisation (Armstrong & Lee, 2021; Krasonikolakis et al., 2020). Firms that use digitalisation to develop a formidable offence and defence, in competitive terms, can observe improvements in all areas of performance, including profitability (Ukko et al., 2019).

DT extends beyond automation; it involves confronting products, services, and business models with appropriate challenges underpinned by digital technology (Matt et al., 2015). Firms that are digitally transforming will expand their digital strategies, which underpin business or corporate strategy, to be far more than focused on efficiency, cost-cutting, and productivity gains, all of which appear on the production side. They will also see DT as a means to transform the customer-side of their businesses by taking their existing products to new markets and discovering new products empowered by digital business models. For them, DT also has the potential to be an important differentiator in the marketplace (Bharadwaj et al., 2013; Pramanik et al., 2019;).

When trying to convert digital forays into business and financial improvement, it is not sufficient to focus only on digitising operations or on quick or easy wins. Firms should also consider transformational strategies that identify and strengthen the thread between information flow, customer engagement, products, and services (Setia et al., 2013; Ukko et al., 2019). The fast pace of change observed in the business environment fuelled by digital technology may sometimes require a radical shift in the firm's strategy and capabilities rather than an episodic or incremental approach (Ellstrom et al., 2022).

DT is not limited to IT; in fact, it is far more about people (Bharadwaj et al., 2013). IT departments, although crucial, should not be expected to deliver DT agendas. For incumbent firms, IT departments are normally consumed by managing IT

infrastructure and architecture that can be fraught with issues brought about by legacy systems and poor interoperability (Ellstrom et al., 2022). Furthermore, IT strategy, which traditionally focused on maintaining a stable technology environment, and digital strategy are not the same, with the latter being an all-encompassing approach that is directly connected to business objectives such as the improvement of customer experiences, processes, products and services, business models and profitability. Reducing the distance between IT and business areas and maximising cross-functional collaboration between the two to drive digital innovation is an imperative of DT.

By addressing the silos between IT and business, the firm creates opportunities for both areas to trade best practices. Business areas benefit from the technical know-how, design, and agile principles of IT to deliver products and services. In turn, IT benefits from the sensing capabilities of business areas in terms of customer expectations to aid in the selection, architecture, and investment decisions related to information systems (IS). Business leaders should develop an awareness of the IT domain and, in the same way, IT leaders should develop an understanding of the business environment. The potential exists for firms to turn this collaborative intersection into a competitive advantage (Ko et al., 2021; Pramanik et al., 2019).

2.3 Theoretical framework for digital transformation

DT is currently an important business topic because of the growth pressures that firms face and the fast pace of change in the business environment brought about by digital technologies, hypercompetitive or disruptive markets, and dynamic customer demands. There are various models competing to integrate, consolidate, and synthesise the factors responsible for DT. However, homogeneity and generalisability with respect to a DT framework are still elusive.

Enterprises that fall into categories such as manufacturing and services, business-to-customer and business-to-business, high volume and low volume, high variation, and low variation all have different perceptions and requirements

of DT. These are confounded further by unique industry characteristics and customer requirements.

Within the financial services sector, retail banks and corporate banks seek different approaches to and outcomes from DT. This makes choosing a DT framework crucial.

The selection criteria for the digital framework used in this study were informed by a review of DT and maturity frameworks as presented by Teichert (2019) and Thordsen et al. (2020). These authors highlighted the following factors as useful for evaluating digital frameworks: validity, observation, generalisability, theory-based interpretation, extrapolation and implications. A consideration of these factors led the researcher to choose the Evans digital transformation framework as most suitable for this study (Evans, 2017). The Evans digital transformation framework is a peer-reviewed and academically cited framework that suits business-to-business applications, although it may be argued that it has broader generalisability and is more grounded in strategy than in technology.

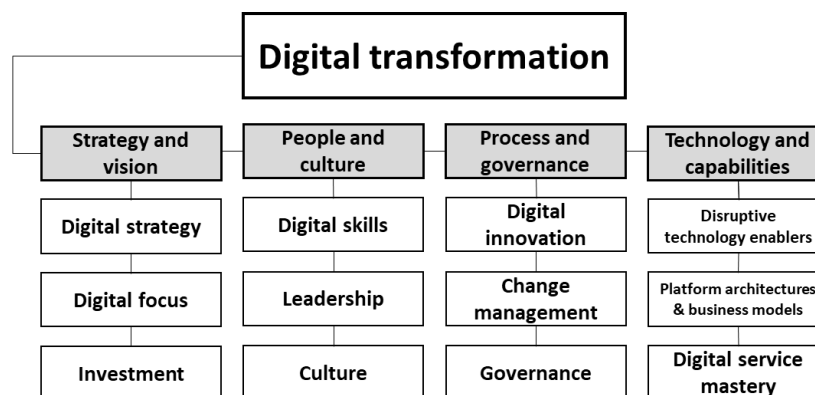


Figure 1: The Evans digital transformation theoretical framework (Evans, 2017)

Each of the four pillars of the Evans digital transformation theoretical framework is discussed below.

2.4 Strategy and vision

2.4.1 Digital strategy

At the root of DT is the formulation of a digital strategy to coordinate, prioritise, and implement firm-wide DT (Chanias et al., 2019; Matt et al., 2015). Digital strategy can be described as developing organisational readiness to leverage digital resources and capabilities, not confined to IT, for DT in support of additional value creation and, ultimately, to realise the firm's corporate strategy (Bharadwaj et al., 2013; Matt et al., 2015; Pramanik et al., 2019). Digital strategy serves as a guide for firms that intend to capitalise on digital technologies (Pramanik et al., 2019).

Digital strategy supports corporate strategy and is not merely a function of it (Bharadwaj et al., 2013; Matt et al., 2015).

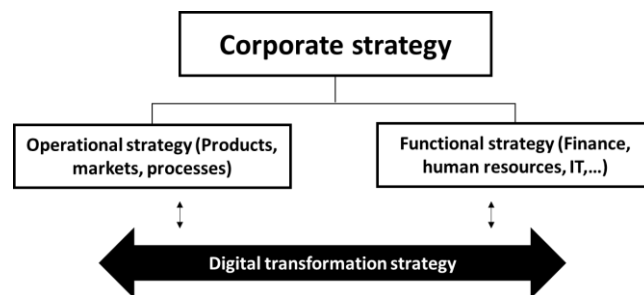


Figure 2: Digital transformation strategy as a support to corporate strategy (Matt et al., 2015)

Digital strategy and business strategy are not separate entities. Rather, they are deployed in support of each other to achieve the desired objectives set out in the firm's corporate strategy (Bharadwaj et al., 2013; Chanias et al., 2019).

Fundamental to digital strategy is the development of capabilities for competitive advantage in the digital era (Setia et al., 2013). The scope of digital strategy can include policy and governance guidelines that encourage experimentation, inform technology choices, and define rules for collaboration, outsourcing, investment, cybersecurity, and data privacy. Digital strategy prioritises customer and business activities, not the technologies themselves (Chanias et al., 2019).

Digital strategy extends to all aspects of the firm, including improving customer relationships, business processes, and business models (Chanias et al., 2019; Setia et al., 2013; Morton & Palfreyman, 2022). General strategic priorities that can be pursued with digital strategy include creating new products or services, and new product or service bundles; optimising the mix of online and face-to-face customer-engagement channels; capturing end-to-end views of customers and processes; and building core infrastructure that will support future technological enhancements (Chanias et al., 2019). Digital strategy has the power to transform business models by establishing new links in the value chain and by taking the firm to new markets (Ebert & Duarte, 2018).

Digital strategy incorporates an assessment of the firm's business models around value creation and delivery. It optimises the bricks-and-clicks concept of marketing, which refers to the mix of personal engagement and digital channels to serve customers, and advances strategic partnerships with customers, government, competitors, and other stakeholders. DT is not representative of an end-state; instead, it requires continuous learning and improvement in response to a dynamic environment (Vial, 2019; Souza-Zomer et al., 2020). Firms that extract advantages from digital strategy have the organisational capacity to sense changes in the market and reconfigure resources accordingly to address them. This becomes a cultural trait of these firms (Morton & Palfreyman, 2022).

According to Bharadwaj et al. (2013), firms can focus on the following four areas when developing their digital strategy: the *scope* of the digital strategy, the *scale* of the digital strategy, the *agility* of the digital strategy in terms of implementation, and the *sources* of business-value creation. As part of setting the scope, a firm will consider the relevance of digitalisation to its industry or to a particular business within its portfolio (Ko et al., 2021). It will consider internal and external environments in the context of technology, competitor activity and organisational readiness to implement DT (Mithas et al., 2013). Scale would involve considering the level of integration between processes, functions, products, services, and business models that the firm wishes to pursue (Pramanik et al., 2019). Scale would also account for the calibration and combination of technologies such as

AI, big data analytics and distributed ledgers to support the firm's business strategy (Matt et al., 2015).

In terms of agility of implementation, there are natural interdependencies between business units within a firm, and DT in a particular business area will have consequences for other areas. Therefore, DT by nature should occur in some shape or form across the firm (Kretschmer & Khashabi, 2020). Firms also need to decide on and describe their financial commitment to DT (Souza-Zomer et al., 2020). Sources of business value can arise from digitalisation of business processes, customer engagement channels and business models (Bharadwaj et al., 2013).

When a firm formulates its digital strategy, it could be worthwhile observing approaches in adjacent or parallel industries and other geographies for inspiration. As an example, in the same way as banking encounters a higher degree of regulation so does healthcare. This represents an opportunity for cross-industry learning when addressing pressing issues such as privacy and data protection (Morton & Palfreyman, 2022).

2.4.2 *Digital focus*

Mature firms, in the business sense, that operate in stable markets need to be acutely aware of the threat of subtle, unanticipated changes that can occur in customer behaviour and the competitor landscape. Firms should hasten to reduce the gap between their capabilities and customer expectations (Ellstrom et al., 2022; Pramanik et al., 2019). Customer demands have been transformed by their use of digital technologies, with customers becoming conditioned to faster, more precise, more convenient, simpler, and, in some cases, more sophisticated products and services. With the advent of social media, customers communicate back to firms, providing real-time feedback that can influence other customers positively or negatively. Customer experiences should be designed from the customer's perspective and not only based on the firm's processes, capabilities, or rules (Evans, 2017; Westerman et al., 2014).

When a firm is able to package its products and services conveniently, communicate effectively, and create transparency by using digital channels, customers are dissuaded from switching to another firm because of the possibility of encountering lower standards (Westerman et al., 2014).

Pre-digital firms might choose to adopt the vision of becoming a digital leader in their industry, which would guide their decisions, employees, and investments (Chanas et al., 2019). DT requires a clear and well-communicated vision that describes how it will transform most, if not all, aspects of the firm, including client experiences, business processes, and its business models (Morton & Palfreyman, 2022). Becoming a technology leader in its industry can be a source of competitive advantage for a firm; however, creating new technology standards as a first mover can present risks. Depending on its context, a firm will decide whether it becomes a technology leader in its industry or relies on established standards to improve business practices (Matt et al., 2015).

2.4.3 Investment

Since the advent of the 4IR, banks have intensified their investments in data centres, technology platforms, and software applications. Technologies synonymous with the 4IR such as big data analytics, AI and the blockchain are being explored with the intention of improving business performance and creating inimitable resources and capabilities (Krasnikolakis et al., 2020).

Banks may prefer to approach DT in an incremental fashion or take a radical approach, depending on their strategy, appetite, and objectives (Chanas et al., 2019). A firm's ability to use existing resources or dynamic capabilities to drive digital innovation and to find the medium between high-touch and high-tech customer-engagement channels is called "ambidexterity". Mastering ambidexterity is vital for firms that serve customers in both the physical and digital spheres (Vial, 2019).

Investments in DT may not always stand up to standard investment scrutiny in terms of visibility or measurement of results, especially in financial terms. Investment decisions around DT demand leaders with a reliable vision and

adequate competencies (Krasonikolakis et al., 2020). Key decision makers that lack digital competencies can put a firm at a distinct disadvantage in capitalising on DT (Souza-Zomer et al., 2020).

Executives may opt to invest in short-term projects that are less complex and lower risk and where the outcomes are easier to measure. This, of course, may be to the detriment of truly transformational initiatives that have the potential to produce immense growth and increase the gap between the firm and its competitors (Krasonikolakis et al., 2020). When firms plan their digital strategy, they are making long-term investment decisions regarding technology architecture and its modularity to support different combinations of current and forward-looking technologies (Vial, 2019). Legacy systems that are embedded deep within existing information systems' architecture and are incapable of interoperability with newer technologies add to the challenge of modernisation efforts. In certain circumstances, a total overhaul of a firm's IT architecture may be warranted for successful DT (Ellstrom et al., 2022).

Selecting and investing in new technologies have the potential for significant value creation; however, there are also undeniable risks, including financial risks. Firms that possess digitally savvy leaders and employees can reduce these risks and boost profits by knowledgeably investing in new technologies (Ko et al., 2021; Souza-Zomer et al., 2020). To assist the selection and investment process, firms should scan the market to identify technologies that have the potential to meet their digital requirements and evaluate the options according to testimonials or demonstrations that will lead to a shortlist. From there, they should conduct proof-of-concept tests with the candidate technology, map its alignment with current architecture, and develop change-management plans to ensure appropriate acceptance and adoption. When a solution is a success in one area of the firm, it can be implemented in other areas where there is a similar need (Morton & Palfreyman, 2022). Firms may also consider investing in strategic tech-based acquisitions to gain certain resources, skills, and capabilities (Souza-Zomer et al., 2020).

Where possible, banks can utilise software-as-a-service or consumption models to minimise risks that may emanate from technology obsolescence and to

improve return on investment (Krasonikolakis et al., 2020). In a dynamic marketplace, it is imperative for firms to have the option of scaling up or throttling back IT services, which is a selling point of cloud services (Bharadwaj et al., 2013).

Investing in digital technologies should be tied as much as possible to unlocking business and financial performance (Ukko et al., 2019; Ellstrom et al., 2022). Initiatives that are conducive to digitalisation, are more permanent in nature, and are time sensitive should be prioritised when making investment decisions. If a process is not directly linked to differentiation and does not have a proven digital solution, it is advisable to delay investing in its transformation (Kretschmer & Khashabi, 2020).

2.5 People and culture

2.5.1 *Digital skills*

DT is aided by employees when they buy in to its vision, goals, and purpose (Krasonikolakis et al., 2020). The risk of DT and, indeed, project failure increases when users are alienated from the development process (Morton & Palfreyman, 2022).

Employing sufficiently skilled employees in the digital setting could be the preeminent challenge facing firms that intend to engage in DT (Ellstrom et al., 2022; Ebert & Duarte, 2018). Skills' shortages in the areas of cloud solutions, 4IR, and mobile technologies are a global phenomenon and banks in South Africa are not immune to this issue (Jenkin & Naude, 2018). Hybrid roles and reskilling are likely to grow in popularity to meet these challenges. New characteristics will be demanded from existing roles; for example, software engineers will be required to perform roles that require higher levels of communication, emotional intelligence, and empathy (Ebert & Duarte, 2018).

Many firms delay, avoid, or attempt a watered-down version of DT because they lack the experience and skills required. IT departments of pre-digital firms may be fully occupied with implementing and maintaining IT architecture and not have

sufficient capacity for DT on a broad scale within the organisation. Internal IT and digital skills can be supplemented by employing external service providers and taking advantage of cloud services. In addition, innovation ecosystems with thinktanks such as universities and technology providers can be formed to co-create solutions using open-source platforms (Chanias et al., 2019; Ko et al., 2021; Pramanik et al., 2019; Souza-Zomer et al., 2020).

DT will require a review of a firm's approach to recruitment, skills, mergers and acquisitions, reward structures, and the firm's learning and development programmes to advance digital literacy (El Safadi, 2021). A firm that succeeds at DT will also benefit from the elevation of the firm's corporate brand that comes with it, which will assist with talent acquisition (Kretschmer & Khashabi, 2020).

Employees are at the coalface of business processes and customer interactions; this means that they are knowledgeable actors who are a valuable source of digital-innovation ideas. Platforms or opportunities for employees to communicate their digital-innovation ideas with decision makers are necessary to realise opportunities (Chanias et al., 2019).

2.5.2 Leadership

A firm's executive leadership, with the support of the board, is responsible for formulating, communicating, and being the driving force of the firm's digital strategy and digital vision. Top-down approaches are effective for formulating and communicating the strategy, and for ensuring that the firm stays on course. Naturally, there needs to be consultation with the broader firm. Bottom-up approaches are beneficial for driving digital innovation and business improvement. Leaders create the framework for DT that includes the infrastructure that supports the digital strategy and invite the rest of the firm to operationalise it (Chanias et al., 2019; Westerman et al., 2014).

Strong leadership is an important antecedent of successful DT and strategic renewal (Ellstrom et al., 2022; Morton & Palfreyman, 2022; Ukko et al., 2019). Leaders with a relevant grasp of digital technologies and a clear vision for digital enhancements are imperative for a firm's DT (Ukko et al., 2019; Kane et al.,

2019). Leadership in this context can be described as being able to use DT to support and improve business strategy, engage employees in DT, and develop employee skillsets to take advantage of digital technologies. Leaders are able to implement organisational design changes that are conducive to DT, communicate the digital strategy and vision, and create the infrastructure and support for DT (Ukko et al., 2019). Leaders drive innovation and product development and influence the mindsets of employees in favour of organisational progress (Ko et al., 2021). Leaders that are capable of managing a flexible business strategy and taking calculated risks are invaluable to firms in the digital era (Ko et al., 2021).

Firms and divisions that esteem digital strategy as having a significant bearing on the future of new and existing products and services might choose to appoint a chief digital officer (CDO) to drive the digital strategy formulation and implementation, and to coordinate all aspects of such a task. Most often, this leader is responsible for inculcating a digital mindset across the firm and integrating the digital vision, resources, people, processes, and business models into the divisions. The CDO is responsible for building trust with employees and customers around the technologies implemented. Included in this leader's mandate is to ensure that new technologies are introduced at appropriate intervals to avoid digital fatigue and with appropriate change management to maximise adoption and return on investment (Vial, 2019). In general, leaders' key performance indicators (KPIs) might include DT targets to ensure alignment with the business strategy (Chanias et al., 2019).

The board of the firm should be stocked with adequate skills and experience for it to be a proponent and sponsor of DT (Chanias et al., 2019). Board members can be effective in supporting executives when they need to sacrifice short-term profits to invest in long-term digital infrastructure (Krasonikolakis et al., 2020). Boards have a fiduciary duty to anticipate and consider the impacts of digital business models on the sustainability of the firm (Ko et al., 2020).

2.5.3 Culture

Cross-functional collaboration, both internally with respect to team orientation and externally with partners, can produce fresh perspectives and improve problem-solving capabilities, especially in homogenous environments (Vial, 2019). Banks have traditionally favoured end-to-end control of their products, services, and distribution channels. However, integrating strategic partners into a bank's value chain can strengthen its value proposition without diluting customer relationships. By leveraging external networks and partnerships, banks can direct efforts towards improving high-value customer interactions, service delivery speed, and customer retention (Krasonikolakis, Tsarbopoulos, & Teck-Yong, 2020)

A culture of open communication, innovation, appropriate risk-taking, experimentation, and empowered, data-driven decision making is fertile ground for DT (Vial, 2019; Teichert, 2019). Access to information has the potential to improve customer centricity, which is an important cultural trait for banks (Setia et al., 2013; Teichert, 2019). A culture of continuous learning is a good foundation for DT and business longevity (Teichert, 2019).

Micro-level practices that break down digital strategy into its various components can be effective in improving traction (Chanas et al., 2019). Conversely, the entrenchment of traditional micro-level every-day practices may also create inertia and resistance to innovation and the adoption of new technologies. A reluctance to change the way things have always been done can be a formidable opponent to DT. To overcome this, leaders can reinforce the benefits of change through effective communication of the vision for DT (Vial, 2019).

Firms that are conservative in nature can be reluctant to enter the domain of DT (Chanas et al., 2019). Most firms develop path dependencies around existing customer relationships and processes that are efficient but often rigid. In these situations, it is difficult for firms to reimagine customer engagement and reconfigure resources and capabilities to leverage new technologies (Vial, 2019). To succeed with DT in this instance, firms will require new micro-level practices

around people, processes, and organisational structure that promote innovation, experimentation, and appropriate risk taking (Souza-Zomer et al., 2020).

Not all initiatives will prove to be successful, and capacity for experimentation and failure within the culture will help to encourage innovation (Chanas et al., 2019). Iterative deployment of initiatives using pilot projects, proofs of concept, and simulations will help to mitigate risks (Pramanik et al., 2019). Banks operate in highly regulated environments, which could lead to avoidance behaviour when it comes to failure and experimentation for DT. Prone to adopting a risk-management culture, some banks may have limited appetite for business risks and large, long-term investments in digital initiatives, especially if these will affect near-term profits. This represents a horizon dilemma, when long-term success is compromised by esteeming short-term targets, which is doubly prevalent when executives serve for a finite period (Krasnikolakis et al., 2020).

2.6 Process and governance

2.6.1 *Digital innovation*

Digital innovation can present new opportunities for revenue by exploiting data assets, creating platform and network effects, re-bundling products and services, and adding new markets. In certain situations, the transformation of existing business models through digital innovation may lead to the creation of entirely new businesses or ventures. Embracing digital innovation and developing new business models require strong tenets regarding vision, leadership, and governance (Matt et al., 2015; Westerman et al., 2014).

Firms may choose to set up an incubator, accelerator or laboratory that is separate from IT to create the impetus for digital innovation. Typically, these structures are not encumbered by traditional IT mandates; they benefit from cross-functional representation and are free to experiment in semi-controlled environments to reduce investment risk. They are particularly useful as an outlet for creativity in environments characterised by a shortage of time and resources.

To give these structures the best chance of succeeding, they should be adequately resourced from a human, financial, and infrastructure perspective (Chanas et al., 2019). Creating multidisciplinary competence networks that include internal and external actors can be a catalyst for digital innovation, especially for pre-digital firms that may not consider themselves to be digital experts and need to develop new characteristics for the digital age (Vial, 2019). If this approach is favoured by the firm, it will decide if employees are seconded to these networks on a full-time basis or if this initiative will be appended to their current roles. When employees perform dual mandates this can hinder their focus, negatively affecting implementation timeframes and the success of the initiatives.

2.6.2 *Change management*

Dealing with the organisational, cultural, and structural changes required to succeed with DT can be a challenge (Krasnikolakis et al., 2020).

Organisational design should lend itself to agile decision making through decentralisation of business units, which encourages agency and empowers teams and individual actors for DT (Chanas et al., 2019; Ko et al., 2021). Hierarchical structures may not be conducive to DT as they tend to slow down decision making and adaptation (Krasnikolakis et al., 2020). Environments that are characterised by command-and-control hierarchical structures may be conducive for rigid, task-driven operations; however, they do not suit businesses that require collaboration, agility, and flexibility in responding to changing customer demands (Souza-Zomer et al., 2020).

Firms that embark on DT should carefully consider their change-management practices and organisational capacity to accept change and adopt technologies. Resistance from managers, employees, and departments that are protecting their own interests can be expected, and plans for alignment, such as workshops and learning programmes, can be outlined in the digital strategy. One of the main reasons attributed to poorly executed or unsuccessful DT is the lack of consideration given to alignment amongst stakeholders. This can be addressed with a comprehensive communication plan (Chanas et al., 2019).

2.6.3 Governance

One approach to a technology governance framework can involve the four pillars of decision-making structures, alignment processes, communication processes, and monitoring. Decision-making structures in this context are the units within the firm that are responsible for making IT decisions, which include IT architecture, performance, and investment decisions. Technology governance may be a central function, or it may assume a decentralised approach that gives certain permissions to individual business units. Alignment processes are crucial to digital strategy and address one of the main issues of IT strategy, which is supporting business outcomes. This pillar governs the relationship between IT and business and the prioritisation of projects. Communication is crucial to creating a general awareness amongst stakeholders of IT governance and policy principles. It is the backbone of transparency and trust in the IT function and keeps stakeholders current on the progress of IT projects. Monitoring is necessary for measuring progress, providing an opportunity for course correction if an initiative is not delivering the expected outcomes, and maintaining accountability against a predetermined set of milestones (Juiz & Gomez, 2021).

Overbearing governance frameworks that institute unnecessary layers of committees and approval protocols can hinder a firm's ability to innovate and its agility in responding to market changes (Morton & Palfreyman, 2022).

As much as possible, firms should standardise core IT infrastructure to maximise opportunities for interoperability, reusability, efficiency and cost management (Bharadwaj et al., 2013; Ebert & Duarte, 2018). Governance stop gaps should prevent resources that exist within the firm from being outsourced (Ellstrom et al., 2022). Where banks embark on open banking platforms, they need to develop protocols for external engagement to protect their environments (Lynn et al., 2020).

Digital and IT resource allocation within the firm is a governance issue that must be addressed in the digital strategy (Ellstrom et al., 2022). Firms may choose to allocate resources from the centre through a hub-and-spoke model or choose to give individual business units that autonomy. The latter option has the potential

for waste and duplication, and, if chosen, should be preceded by effective governance and investment protocols. Firms should have clear guidelines for distributing resources and prioritising projects for successful DT (Ellstrom et al., 2022).

Misalignment between IT and business teams that operate in siloes can be observed from time to time in pre-digital organisations. To counter this problem, firms can second business representatives to lead IT projects that are related to business outcomes, and IT representatives can be present when business challenges are being discussed to highlight possible digital solutions. This has the potential to be a significant catalyst for digital innovation. An antecedent to this would be creating skillsets that straddle the two arenas and crafting learning programmes to enable a general digital literacy amongst business teams and business awareness amongst IT teams (Vial, 2019; Ko et al., 2021).

IT's ability to manage infrastructure and IT's ability to contribute to achieving business objectives require different skillsets and focus. The former is characteristic of stability and predictability, and the latter requires flexibility and agility. Firms may choose to deploy bimodal IT governance streams that address these two areas separately (Ko et al., 2021). This can also be described as a standard mode for traditional IT and a disruptive mode for transformational IT (Ebert & Duarte, 2018).

Implementing the latest technologies will require additional governance protocols because these technologies may not have been rigorously tested and could pose unknown risks. For example, AI is innately capable of reinforcing incorrect stereotypes (Vial, 2019).

2.7 Technology and capabilities

2.7.1 *Disruptive technology enablers*

Disruptive technologies such as AI, big data analytics and blockchain, to name a few, have the potential to transform the banking industry by impacting customer expectations, the competitive landscape, and value creation (Jenkin & Naude, 2018). The power of these technologies lies primarily in their ability to generate large tracts of data that can be turned into exclusive value for firms. Many firms know the value of data and are aware of its origins within the firm; however, they may lack the will to invest in disruptive technologies that can convert data into significant business value. This could allow competitors, especially for firms operating in the knowledge economy, to move ahead by capitalising on data (Bharadwaj et al., 2013).

According to Setia et al. (2013), the quality of data systems can be measured in terms of the four characteristics of completeness, accuracy, format, and currency. Access to information has the potential to improve customer centricity and personalisation. For corporate banks, processes have a higher degree of sophistication, complexity, and variation. Therefore, the ability to analyse legitimate external sources of data and unstructured data presents tremendous opportunity (Setia et al., 2013). Timely information can expose flawed customer processes, improve decision making, and prevent losses from errors (Kretschmer & Khashabi, 2020).

As a firm develops data and information-exploitation capabilities and connects people, products, and services, the business strategy transforms digitally. In return, the firm has a better vantage point for observing complex patterns between clients, products, services, and processes that can be utilised to create unique partnerships and bundles (Setia et al., 2013). Quality information illuminates profitable client segments, informs marketing and client acquisition strategies, and has the potential to induce scale through precise marketing intelligence (Bharadwaj et al., 2013).

Another requirement for taking advantage of disruptive technologies is the configuration and creation of dynamic capabilities. “Dynamic capabilities” refers to a firm’s ability to assess and reconfigure its resources to respond to a continuously changing environment. Dynamic capabilities have the unique characteristic of being adaptable to different market conditions (Teece, 2007). “Dynamic capabilities” in the digital sense refers to digital resources that remain valuable in changing digital landscapes (Souza-Zomer et al., 2020).

Sensing changes in customer demands and competitor behaviour and having the organisational capacity to react to these changes by rearranging existing resources or using old methods in new ways create dynamic capabilities. These capabilities are crucial for disruptive environments that are characterised by continuous change. Continuous learning and continuous development of resources such as digital skillsets and software applications are crucial for perpetuating the success of the firm. Dynamic capabilities allow the firm to take an emergent approach to strategy, informing and being informed by its environment (Ellstrom et al., 2022; Teece, 2007).

2.7.2 Platform architecture and business models

Many firms place greater emphasis on extracting value from new technologies than on extracting value from transforming their business models through digital innovation that can lead to new sources of revenue (Teichert, 2019).

Open banking is premised on the platform concept, which comprises an ecosystem of banks, customers, IT developers, information and data, and business functions (Monitor Deloitte, 2018). Open banking has the potential for increasing competition by streamlining customer-delivery channels and reducing upfront capital expenditure. Application Programming Interfaces (APIs) that allow banks’ systems and customers’ systems to communicate via a single interface lend themselves to a multi-bank environment that benefits the customer. Cloud technologies usually form the backbone of open banking APIs and platform ecosystems (Lynn et al., 2020).

Open banking platforms allow banks to procure services as well as to provide services that generate revenue. Whilst Fintechs may be a threat to incumbent banks, open banking provides a way for them to work together with banks and play to their strengths (Lynn et al., 2020). For example, banks can rely on Fintechs to provide operational capabilities such as client onboarding, freeing them to focus on high-value customer touchpoints that generate higher margins. Conversely, Fintechs can benefit from the trusted brand, captive client base, regulatory know-how, and acquisition capabilities of traditional banks while delivering pieces of the customer journey much more efficiently and cost effectively than traditional banks could.

Platform ecosystems have the potential to create new revenue streams by exploiting strategic partnerships to deliver configurations of products and services that were not possible, in locations that incumbent banks could never reach on their own, and to achieve higher degrees of scale. Open banking relies on strong IT architecture that enables platform capabilities.

2.7.3 *Digital service mastery*

Customer demands and expectations of their experiences when engaging with banks are being changed and influenced by their use of digital technologies. Firms that plan to create a differentiated digital experience for customers will need to think far beyond websites and mobile apps. However, it can be a challenge to introduce digital channels into efficient and often rigid existing delivery models (Vial, 2019). Digital channels have the potential to force firms to make changes to traditional business processes that can be uncomfortable. For example, a corporate bank might have a turnaround time of a couple of weeks to provide the outcome regarding a credit application. However, influenced by digital technologies, customers are expecting faster, newer ways of decision making and shorter turnaround times (Evans, 2017; Westerman et al., 2014).

The task is made more difficult for firms that need to maintain a balance between digital channels and face-to-face channels for customer sets with different preferences. A firm might draw up customer journey maps that are based on the voice of the customer to help decide which client preferences it will serve and

pilot new channels prior to broadscale rollout. It is also not as simple as throwing out the old and issuing in the new for customer-engagement channels. Sometimes a balance needs to be struck between industry and customer requirements, and the firm's client value proposition (Westerman et al., 2014).

Digital channels can provide the firm with avenues for distributing new product bundles and reaching new customers or markets. They have the inherent ability to provide valuable data that can be used to generate personalised experiences for segments of customers. This data also gives the firm an opportunity to create a single end-to-end view of the customer that assists with sales' efforts and with illuminating complex patterns or possible relationships within the client base that can be commercialised (Matt et al., 2015; Westerman et al., 2014).

Ultimately, the firm's organisational capacity to respond and adapt to the changes that it senses from customers and competitors will be determined by the strength of its digital capabilities and resources to plan and execute its responses. The clock speed of these responses may rely on DevOps principles, which refers to a combination of cultural traits and tools to improve agility, and the ability to flex IT infrastructure in real-time through consumption-as-a-service models (Evans, 2017).

2.8 Theoretical framework of digital maturity

The level at which a firm can generate leadership and digital capabilities to support superior performance related to profit, productivity, and performance through DT is referred to as "digital maturity" (Westerman et al., 2014). DT and digital maturity differ in that the latter is a quantification of the current state in terms of leadership and digital capabilities, whilst providing an estimate of the depth of these capabilities required to realise an envisaged improved digital state. This quantification is crucial as it provides a benchmark against which to measure digital-transformation efforts (Teichert, 2019). Digital masters produce greater profits than their competitors by leaning on these capabilities to deliver unique customer experiences, optimum business processes, and integrated value creation and value delivery propositions through updated business models. Firms

that have attained digital mastery succeed in turning leadership and digital resources into dynamic capabilities that hold their value in an ever-changing digital and technology landscape.

Digital technologies and capabilities may possess immense potential for firms; as a result, digital maturity models that aim to evaluate and guide a firm's capacity to leverage them have become popular. There are many industry contributions to the field of digital maturity that have not undergone the rigour of academic scrutiny and there are several academic contributions also. Consensus and homogeneity in the field are still elusive and most models lack generalisability in that they only appeal to a narrow set of situations (Teichert, 2019).

Far more academic literature exists in the field of DT than studies related to digital maturity. In addition, generalisability is still of concern, with many more research papers focused on digital maturity within manufacturing than services' businesses. There is also a vast array of factors that the different models propose for measuring digital maturity (Teichert, 2019).

The digital-transformation journey should include periodically taking stock of a firm's digital maturity (Pramanik et al., 2019). This study utilises the Westerman digital maturity model (Westerman et al., 2014), which was ranked third out of 17 models studied by Thordsen et al. (2020). These authors performed an academic assessment of 17 models in terms of validity, observation, generalisability, theory-based interpretation, extrapolation, and implications. This model is favoured for its generalisability and applicability to a South African corporate bank.

In Figure 3 below, digital maturity is categorised along four levels and evaluated according to the two dimensions of leadership and digital capabilities. The four levels are fashionistas, digital masters, beginners, and conservatives (Westerman et al., 2014). These four levels are explored below.

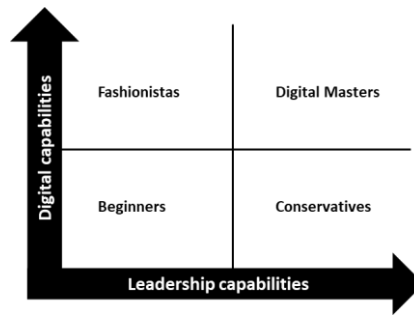


Figure 3: Westerman digital maturity quadrants (Westerman et al., 2014)

2.8.1 *Beginners*

Beginners are firms that do not aspire to set new technology benchmarks in their industry. Instead, they avoid the risks associated with being the first mover when adopting new technologies. They take a wait and see approach before changing their posture. They tend to immediately dismiss new technologies as being unnecessary for their businesses and they lack leadership competencies to leverage them. Therefore, they lag their competitors in performance (Westerman et al., 2014).

2.8.2 *Fashionistas*

Fashionistas can be described as firms that are overzealous for the latest and greatest technologies; however, they lack the organisational capacity to extract potential from them. Fashionistas can be identified by a deficit of digital leadership, digital governance protocols, investment frameworks and coordination, and interoperability of systems, which can also be identified by fragmented customer views and processes (Westerman et al., 2014).

2.8.3 *Conservatives*

Conservatives possess digital leadership capabilities. However, their strong aversion to risk prevents them from taking advantage of digital capabilities. They are generally characterised by extensive governance protocols that are a drag on decisions for DT and are conscious of sacrificing profits and time to invest for the

future. Culturally, they assign much more weight to the potential risks than to the potential benefits of digital innovation (Westerman et al., 2014).

2.8.4 Digital masters

Digital masters are better than their competitors at overcoming challenges and extracting value related to digital innovation. Their leaders have strong business and digital competencies that allow them to develop difficult-to-replicate competitive advantages using digital resources. These firms have the entrepreneurial ability to observe complex patterns between clients, products, and services. Importantly, they also have the digital capabilities to act on these patterns. Financial commitment to digital progress is common amongst these firms and their governance and investment frameworks are set up for maximising performance whilst sufficiently mitigating risks.

Applying the Westerman digital maturity model

Technology investments are a significant component of South African banks' strategies. Focus areas include digital customer channels, back-office operations such as client onboarding, and cost containment (Ernst & Young, 2022). South Africa represents the highest potential in Africa for digital maturity, and digitalisation of the banking sector is well underway (Jenkin & Naude, 2018). However, as the report *The Digital Vortex* shows, digital maturity and transformation efforts differ across industries and even within industries (Global Center for Digital Business, 2021).

The Westerman digital maturity model (Westerman et al., 2014) provides a tool for assessing the digital maturity of the South African corporate bank. The characteristics of the corporate bank can be compared to the digital capabilities and leadership capabilities identified in the model, which are set out in Table 2 below, with the research findings and analysis determining the level of each of these factors in the bank. The digital maturity of the South African corporate bank can be plotted on a graph such as the one shown in Figure 3 above (Capgemini Consulting, 2011).

Table 2: Factors to determine digital maturity (Capgemini Consulting, 2011; Westerman et al., 2014)

Digital capabilities	• Advancement or sophistication of its digital capabilities indicated by the use of disruptive technologies such as cloud services, AI, big data analytics and blockchain • Use of digital channels • Use of data analytics • Transformation of business models using digital technologies; platform business models • Assessing IT-business alignment • Digital skills
Leadership capabilities	• Leadership characteristics to support digital transformation • Strength and visibility of its digital vision and strategy • Governance protocols • Cultural traits to support digital transformation • Investment commitment to digital transformation • Change-management procedures

2.9 Conceptual framework

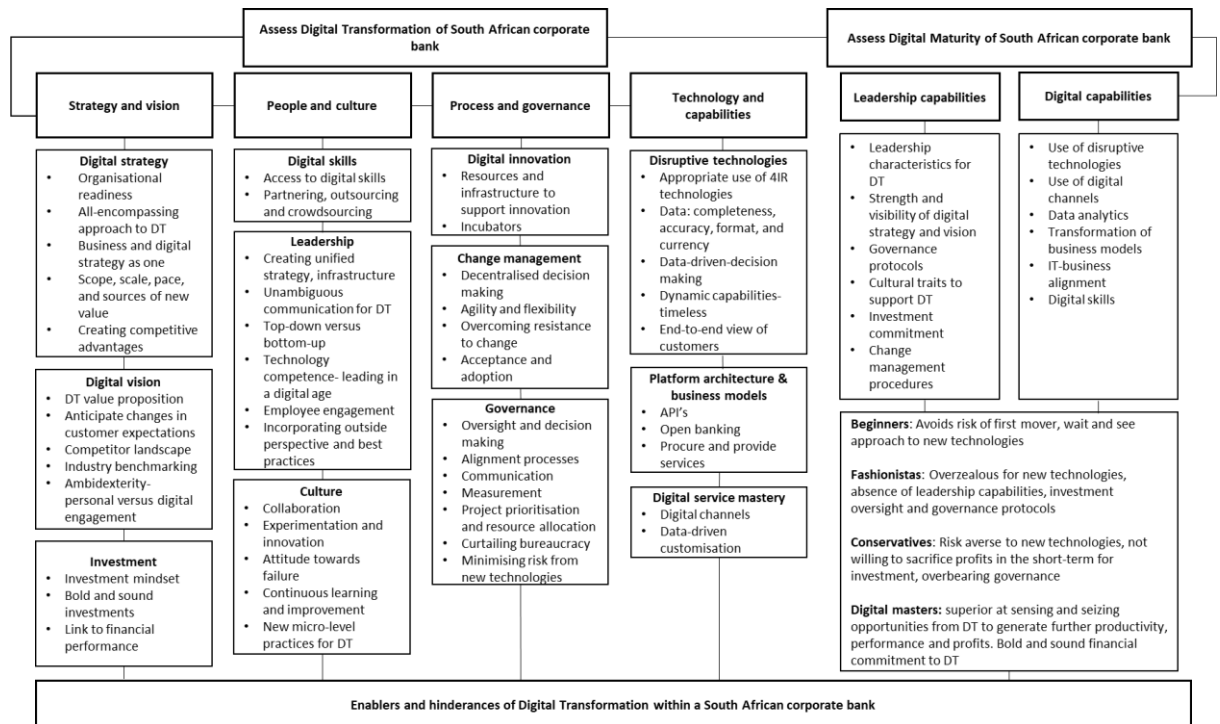


Figure 4: Conceptual framework

2.10 Conclusion of literature review

DT is an ongoing process with no end-state. It is a lifelong commitment by the firm that requires continuous feedback loops, continuous innovation, and continuous learning (Chanas et al., 2019). Timing and extent of digital-transformation initiatives will be guided by the firm's overall strategy, industry characteristics, advent of disruptive technologies, and, most importantly, customer requirements (Evans, 2017). Firms will prioritise projects differently, choosing a transformational approach for some and an incremental approach for others. This asymmetry presents opportunities for leapfrogging competitors and creating competitive advantages.

The South African corporate bank operates in a context that is characterised by business-to-business customers, extensive regulations, and a stable market. This could affect its timing, extent, and prioritisation of digital-transformation initiatives.

When firms embark on transformational change, this change is always accompanied by risks and challenges. However, there are no greater challenges within the digital domain than inherent risks associated with privacy, data protection, and cybersecurity. Collaborating with willing regulators to ensure sustainable outcomes that do not stifle innovation meant for society's benefit can be invaluable (Vial, 2019; Krasonikolakis et al., 2020).

DT may be difficult to measure in fiscal terms; however, the calculated and collective changes it introduces to client experiences, business processes, and business models will most likely result in an uptick in financial performance (Ukko et al., 2019). Possible non-financial measures of DT are the leadership and digital capabilities that a firm develops to support digital innovation (Ko et al., 2021). Another possible measure is industry benchmarking, which involves comparing digital capabilities and financial performance relative to those of competitors as an indicator of digital maturity (Pramanik et al., 2019). Other tangible improvements that could arise from digitalisation may be observed in sales and productivity, client onboarding, innovation capabilities, cybersecurity, speed of execution, and reducing risk events or errors (Pramanik et al., 2019; Matt et al., 2015).

Ultimately, firms that engage in DT and pursue digital maturity are committing leaders, employees, and financial resources to a firm-wide strategic renewal. This renewal takes place by exploring the intersection of its different business models; rethinking products and services; emphasising strategic external partnerships with stakeholders, which include clients and competitors; and inviting internal and external contemplation of its digital and leadership capabilities (Ebert & Duarte, 2018).

The literature review undertaken in this chapter has shown that there are many different aspects to consider about DT and their applications are dependant on the context of the firm. This study has established that DT in the context of a South African corporate bank is a gap in research. This has led to the research questions presented in the following section.

2.11 Research questions

1. What is the nature of digital transformation in a South African corporate bank?
2. What is the digital maturity level of a South African corporate bank?
3. What are the enablers of digital transformation in a South African corporate bank?
4. What are the hinderances of digital transformation in a South African corporate bank?

CHAPTER 3. RESEARCH METHODOLOGY

This chapter details the process for gathering data, analysing it, and generating findings. This research project used a qualitative study approach and made use of a case study design as the strategy of enquiry. The setting for this study was a single South African corporate bank (CIB).

The chapter begins by examining the research approach and design and then looks at the data-collection methods and study sample. Purposive sampling generated a list of 12 participants, from which data was gathered through semi-structured interviews. Participants comprised executives, managers, and other employees of CIB. Taking a thematic deductive approach, the study collected data according to the conceptual framework presented in Chapter 2 and aimed to test its validity, in this way adding to the body of knowledge about DT and digital maturity. As these phenomena are not fully understood, it was believed that they would benefit from being observed in the unique context of CIB (cf. Evans, 2017; Teichert, 2019; Thordsen et al., 2020).

The chapter outlines the data-collection procedure and data-analysis strategies and instruments. An interview schedule was drawn up and followed for the semi-structured interviews, which were audio recorded. Interviews took place in person, on a one-on-one basis. Interviews were transcribed by the researcher and categorised thematically using the Computer Aided Qualitative Data Analysis Software (CAQDAS) Nvivo program. This was crucial to analysing the data to obtain the findings of the research study. Finally, as outlined in the rest of this chapter, steps were taken to ensure the transferability, credibility, and dependability of the research project.

3.1 Research approach

The qualitative approach was chosen for this study as the areas of DT and digital maturity still lack fully fledged theoretical frameworks against which cause and effect relationships and known or visible outcomes may be tested through a quantitative approach. The literature review did not yield any specific studies on these business phenomena located in a South African corporate bank. Thus, this

represents an under-researched area with the potential for unearthing unknown factors from unstructured data and generating rich insights from the participants. This approach provides a rich description of the locality in terms of the study topic and allows for flexibility in the analysis and findings, which suits phenomena that are still being understood (Barbour, 2010).

The qualitative approach is the most suitable research approach for a study that explores a gap between the theoretical foundations of a complex human or business phenomenon and contextual or real-life experiences. The approach relies on an emergent process of questioning that is shaped by the participants' views, collecting rich data in the natural environment where the phenomenon occurs, and using the deductive process to determine whether the data matches the conceptual framework that supports the study (Creswell & Creswell, 2018; Smith & Bowers-Brown, 2010).

This qualitative study explores DT in the natural setting of CIB using the case study strategy of enquiry. In-depth data collection and exploration within this setting was conducted with the aim of contributing research about DT in a corporate bank (cf. Bloor & Wood, 2006).

3.2 Research design

This study made use of the case study strategy of enquiry as it explored DT in CIB, which formed the bounded system of the study. The exploratory case study strategy was chosen as this strategy has the ability to provide an acute description of these business phenomena in the natural setting, leading to unique insights and new discoveries. DT is still being understood and at this stage is considered a complex subject for experimental or survey research (Bloor & Wood, 2006).

Case studies produce valuable insights that can be fed back into the setting and contribute content to future research that will pursue a generalisable theory regarding the phenomena being studied (Creswell & Creswell, 2018), in this case business phenomena.

CIB was part of a greater banking and investment group that operated primarily in South Africa and the United Kingdom. In South Africa, CIB operated alongside a private bank and wealth manager. CIB offered advisory, lending, trade and risk management, investment, and research services to corporate and institutional clients in the listed and unlisted segments.

Categories, themes, and sub-themes were guided by the literature review and captured in the conceptual framework outlined in Chapter 2. Data was classified according to this framework and noteworthy and prevalent sub-themes that emerged from the data itself (cf. Bloor & Wood, 2006).

A potential disadvantage of the case study design is that it can produce very specific information that is valid only in the context of the setting and that cannot be extrapolated for broader use (Bloor & Wood, 2006). The subject in this case was a large corporate bank that was part of a global banking group operating in dynamic global markets. This increased the potential of the case study producing information that can be generalised for the benefit of a wider audience; however, this was not an objective of this study.

In terms of the potential influence of the researcher in the case study design, at the time of the study, the researcher was an employee at CIB that formed the basis of the case study and had occupied various roles in the bank over a 13-year period. However, all his experience had been in frontline deal-making roles with no direct connection to the IT and digital domains. As a result, the researcher did not envisage any significant negative implications from studying a site, in relation to a topic that was not directly related to his day-to-day role, where he was a participant (cf. Creswell & Creswell, 2018). The researcher ensured that his business perspective contributed positively to the data-gathering, analysis, interpretation, and findings sections of the study (cf. Barbour, 2010). The researcher chose the title of this study because he had an interest in the potential ways in which the findings of such a study could benefit CIB (cf. Barbour, 2010). The researcher acknowledges that, in the ordinary course of his role, he has limited information related to DT within the setting. Through this in-depth process of discovery, he endeavoured to keep an open mind so as not to overlook or

neglect key pieces of information (cf. Creswell & Creswell, 2018; Smith & Bowers-Brown, 2010).

To avoid bias, the researcher performed a comparative analysis between the content generated from the semi-structured interviews and the literature review as set out in Chapter 2. In addition, the CAQDAS software Nvivo was used to arrange the data thematically according to the conceptual framework, adding a layer of objectivity to the data analysis. Lastly, the research supervisor reviewed the research for any bias. The researcher chose to discard the method of member checking, as this method has the potential to unnecessarily alter outcomes in favour of members' personal interests and as conducting a secondary interview with participants to check interpretations was not practical for this study (cf. Morse, 2015).

Being a practitioner and researcher provided the advantage of access to participants, many of whom were high-ranking executives within the setting (cf. Smith & Bowers-Brown, 2010).

3.3 Population and sample

One of the advantages of qualitative research is being able to purposefully choose a population and sample that the researcher deems to have the necessary attributes that will benefit the study and that will provide a diversity of perspectives. Employees of CIB were perceived to be knowledgeable actors who understood the successes and shortcomings within the setting, including DT, and could suggest ways of growing and improving (cf. Barbour, 2010; Chantias et al., 2019).

3.3.1 Population

The population selected for this study consisted of senior executives, managers and other employees of CIB that was under study.

3.3.2 *Sample and sampling method*

Purposive sampling was used for the appropriate selection of a diverse and meaningful list of participants that were perceived by the researcher to have the greatest potential impact on the objectives, analysis, and findings of this study. This sampling method was used with the aim of yielding rich insights and opportunities to draw comparisons and examine divergent views.

Participants comprised 12 select individuals from CIB who occupied executive, managerial, and employee roles. Participants came from various backgrounds in terms of experience and qualifications and were representative of the business, IT, operations, and digital areas within CIB.

The researcher limited the number of participants to 12, to allow for a focus on the depth and quality of the interviews and to produce detailed analysis and findings from the data (cf. Smith & Bowers-Brown, 2010).

3.4 Data-collection methods

Data was collected through 12 semi-structured, one-on-one, face-to-face interviews with selected participants. This was conducive to bringing to light the potential unknowns about DT in CIB.

The emergent nature of semi-structured interviews allowed the research to be shaped by the fieldwork and to unearth new factors that were beneficial to this research project. Participants were appropriately selected to provide a diverse range of perspectives (cf. Creswell & Creswell, 2018; Bloor & Wood, 2006).

The interviews were audio-recorded electronically. Interviews were conducted privately in meeting rooms located on the premises of CIB.

3.5 The research instrument

The semi-structured interview was used as the data-collection method for this research study. DT is not well understood within the context of a South African corporate bank. The flexibility provided by the semi-structured interview as a

research instrument created the conditions for obtaining unique insights and new discoveries and for meaning to surface with respect to the phenomena under study (cf. Creswell & Creswell, 2018; Wilkinson & Birmingham, 2003). The option of emergent questioning within semi-structured interviews ensured maximum value was ascribed to participants' views and helped to curtail the researcher's own agenda from surfacing (cf. Creswell & Creswell, 2018). The researcher was not an experienced interviewer for research purposes and benefitted from the guidance of a semi-structured interview method and interview schedule.

The interview schedule, which is included under Appendix A, was designed around six key themes informed by the literature review and conceptual framework presented in Chapter 2. Each theme had a main question, which was designed to allow the participant freedom to share their experiences and insights. However, within each theme there were key points that needed to be methodically addressed, and follow-up questions served to guide the participant in addressing points. They also helped the researcher to deal with partial answers. The interview schedule provides the themes, main questions, follow-up questions, and the sequence that was roughly followed.

Interviews began with a brief introduction of the interviewer, the research objectives, and the participant. The interviewer avoided unnecessary note taking during the interview to afford the participant the appropriate amount of attention, to show interest in the responses, and to take an emergent approach. Interviews were audio recorded to ensure the reliability of the data and to aid in the transcription process required for data analysis.

Following the advice of Wilkinson and Birmingham (2003), interview questions were tested with the research supervisor to examine the flow, structure, and validity of the questions.

3.6 Procedure for data collection

The researcher obtained permission from the Head of the Corporate Bank to undertake research and interviews within the corporate bank. The 12 selected participants were sent an email explaining the research and inviting them to participate in it. Interviews were conducted on a face-to-face basis on the premises of CIB. Interviews were 75 minutes on average in duration. To ensure reliability, two separate electronic devices were used to audio record the interviews. The recordings were then appropriately indexed and saved on the researcher's personal computer, which was password protected. Participants were documented and denoted by alphanumeric identification to ensure their anonymity.

A sample of the invitation that was sent to the participants is contained under Appendix B.

The researcher's personal thoughts on the interviews were recorded by hand on the interview schedules that were printed for each interview (cf. Creswell & Creswell, 2018).

3.7 Data-analysis strategies and interpretation

Following the qualitative research approach of this study, the semi-structured interviews yielded rich and dense data that described the DT within the setting. Data analysis involved the deductive thematic approach to investigate whether the data validated the conceptual framework used in the study. The process detailed in Table 3 below was followed to analyse and present the data from the semi-structured interviews.

Data analysis took place in parallel with the interviews being conducted. This provided the option of modifying the interview schedule to optimise the data-gathering process. Interview transcripts were scanned by the researcher to truncate irrelevant information (cf. Creswell & Creswell, 2018).

Table 3: Data-analysis process, adapted from Creswell and Creswell (2018)

Step 1: Interviews are transcribed into word format from the audio recordings. The reliability and validity of the transcripts are verified by selecting key words used by the participants in the audio recordings and locating them within the transcripts. This helps to curtail omissions and errors (cf. Bloor & Wood, 2006). Field notes are handwritten on separate interview schedules for each interview.
Step 2: The researcher familiarises himself with the information, to make sense of it against the literature review, and to assess its general usefulness in meeting the research objectives.
Step 3: Data is coded via the CAQDAS software, Nvivo.
Step 4: Data is classified into categories, themes and sub-themes that form the basis of the findings. This is guided by the study's conceptual framework. Attention is given to the commonality and divergence of perspectives from participants. The voice of the participants will produce meaning in terms of digital transformation and digital maturity in a South African bank.
Step 5: A treemap displays and summarises the key categories, themes and sub-themes (See Figure 6).

3.8 Possible limitations and challenges of the study

These are a list of the possible limitations that could have affected the outcome of the study:

- Participants who adopted a rosy view not congruent with reality; this could be portrayed to protect personal interests

- Participants who were enthusiastic about certain technologies or projects they were involved in without appreciating the broad nature of DT
- Time constraints emanating from the busy schedules of the participants
- Homogenous thinking across a representative sample in a single case study
- The inadvertent omission of participants with the requisite characteristics for this study topic
- The potential for case studies to generate findings for narrow application

3.9 Quality Assurance

The legitimacy of a research study depends on the steps taken to ensure and maintain the quality of the research (Creswell & Creswell, 2018). These steps are described in the next section.

3.9.1 *Transferability*

Case studies offer the benefit of in-depth exploration of a concept within a bounded natural setting that can produce rich data and descriptions that promote an understanding of the concept within the setting (Bloor & Wood, 2006). However, the case study is not a tool that lends itself naturally to generalisability.

This study ensured transferability by using a semi-structured interview schedule, which would benefit any researcher who wished to replicate the study in the same or another setting. In accordance with Morse (2015), the questions and the sequence in which they were asked were made available (see Appendix A). However, it must be noted that deduction within qualitative studies, and specifically within case studies, relies on the context of the setting (Morse, 2015).

3.9.2 *Credibility*

Several steps were taken to ensure the credibility of the study. An extensive literature review was undertaken, as set out in Chapter 2, which served as a backdrop against which to evaluate the findings gathered from the semi-

structured interviews. In addition, converging themes or views from participants served to further validate and establish the findings against the study's conceptual framework. Persistent observation did not benefit this study as the subject matter did not deal with sensitive information or issues of a personal nature (cf. Morse, 2015).

The sample size and representativeness were considered as sufficient for a semi-structured interview to generate a fair degree of saturation (cf. Barbour, 2010). Having undertaken a comprehensive literature review of the phenomenon under study, the researcher was deemed sufficiently qualified to choose a purposive and representative sample with the necessary characteristics to meet the research objectives.

The researcher was a participant in the setting. He strove to maintain neutrality and an open mind so as not to overlook key information and neglect what could be opposing information if he had a preconceived notion of what the research should yield, which he did not. The sample was chosen on the basis of characteristics required to contribute to the richness and success of the study. Interview questions were scanned by the researcher for bias and were also tested by the research supervisor for this.

3.9.3 *Dependability*

The study aimed at achieving dependability by publishing the details surrounding the setting of the semi-structured interviews and outlining the steps taken, which could be used to evaluate the process. Interviews were audio recorded, and field notes were taken to document any variations to the interview process. This formed an audit trail of the data-gathering process (cf. Morse, 2015).

3.10 Ethical considerations

The following ethical considerations were applied:

- The name of the corporate bank and the names of the participants were anonymised to uphold privacy and confidentiality, with participants assigned an alphanumeric identification.
- Participants consented to the interviews by way of a signed consent form acknowledging that the research was explained to them and that they understand their rights.
- Transcript and audio recordings of each interview were labelled according to the alphanumeric identification assigned to the relevant participant to ensure the anonymity of the participants. Permission to record interviews was obtained from participants by way of written consent.
- Data from the interview process was stored on the personal computer of the researcher, which was password protected and can only be accessed by him. This data will be stored for a minimum of three years. Its important to note that information obtained is not deemed to be of a personal nature.
- Interview questions were designed so that they did not refer to information of a personal or sensitive nature.

CHAPTER 4. FINDINGS

4.1 Introduction

This chapter presents the findings from the interviews conducted with participants, referred to as “the data”, in the light of the research questions. As part of the fieldwork for this research, interviews were conducted with 12 participants who were senior employees at a South African corporate bank (CIB), which was the single setting for this case study. Each participant was asked a series of questions from an interview schedule that was formulated to take into consideration the research questions that this research study aims to answer and the conceptual framework detailed in Chapter 2 and based on the Evans digital transformation framework (Evans, 2017) and the Westerman digital maturity model (Westerman et al., 2014).

The data was processed using the CAQDAS Nvivo program. Approximately 14 hours of interview recordings were generated, which produced a large volume of data. This data was coded under categories, themes, and sub-themes that were informed by the conceptual framework and noteworthy and prevalent data generated from the interviews.

CIB is part of a greater banking group that includes private banking, and wealth and investment divisions. Whilst CIB is not the largest in its market, it is still a sizeable and significant operator. CIB comprises approximately 20 different business units that operate autonomously to an extent, according to the study participants. CIB has a high calibre of staff, the majority of whom have an undergraduate university degree as a minimum qualification. This speaks to the nature, complexity, and sophistication of its operations. The design of this study was based on maintaining the anonymity of CIB and the interview participants.

The following four overarching categories emanating from the conceptual framework were used to guide the research process: Strategy and Vision, People and Culture, Process and Governance, and Technology and Capabilities. Further to this, key themes informed by the conceptual framework and belonging to the four overarching categories were used. Lastly, prevalent sub-themes were

identified from analysing and coding the responses of the interview participants. Figure 5 and Figure 6, below, present the categories, themes, and sub-themes, as well as the most prevalent of each, based on the frequency of references derived from the coding process using Nvivo. The categories, themes, and sub-themes that are noteworthy, or prevalent, or both, and relate to the research questions are presented in the remainder of this chapter.

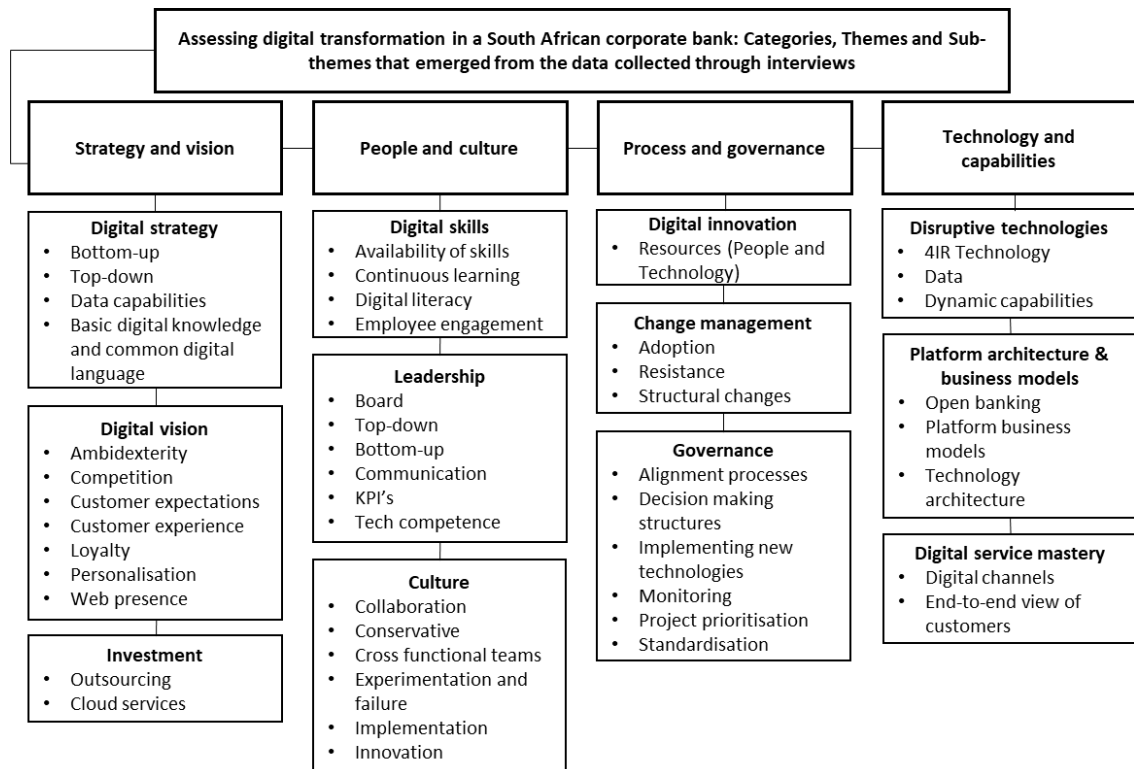


Figure 5: Categories, themes and sub-themes that emerged from data collected

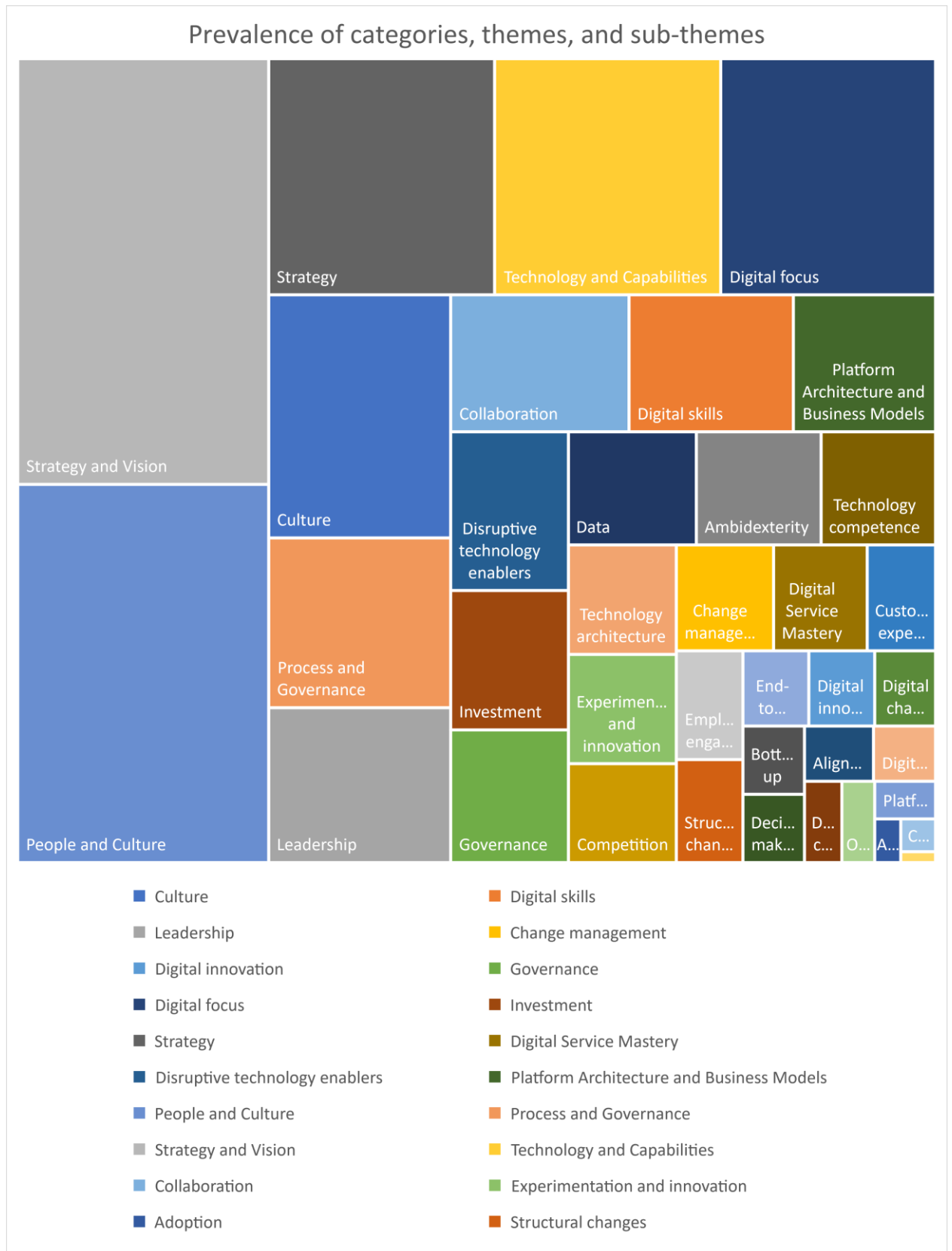


Figure 6: Prevalence of categories, themes, and sub-themes (Treemap)

The research questions that emerged from Chapter 2 have been included below for ease of reference.

4.1.1 Research questions

1. What is the nature of digital transformation in a South African corporate bank?
2. What is the digital maturity level of a South African corporate bank?
3. What are the enablers of digital transformation in a South African corporate bank?
4. What are the hinderances of digital transformation in a South African corporate bank?

4.2 What is the nature of digital transformation in a South African corporate bank?

This section focuses on describing the nature of DT within CIB. From the interview questions posed to participants to decipher the nature of DT, the key and noteworthy sub-themes that emerged were the history of DT within the banking industry, the shared responsibility for it, the planning of it, the nature of products and services dealt with under the theme of ambidexterity, threats from competitors, and impending challenges. These are addressed in the paragraphs below, with the meaning of each sub-theme explained and evidence provided by way of verbatim quotations from the interview participants.

To allow the researcher to develop an understanding of the nature of DT within CIB, participants provided insights into the history of DT within the site and its sector. It is important to highlight that DT and the adoption of technologies are not something new for the bank. This influences the scope and scale of DT in today's terms, both negatively by having to overcome legacy issues related to technology, and positively with the advantage of digital capacity having been built over time. Whilst there was a realisation that DT is not new, there was an acknowledgement from participants that DT catalysed by technologies that are

synonymous with the 4IR has the potential to be more disruptive and demands a quicker response, which justifies a relook at strategies and priorities.

“Digital transformation is not anything new if you really look at it. A lot of corporate bank stuff was manual 20-30 years ago, but if you look at it, it’s been going through many stages of digital transformation from the first time you introduced [Microsoft] Excel into the business, to when you started producing systems, to automation.” (Participant 05)

“There is an acceptance that it forms part of the strategy. There are more people every day that recognises its importance, so I think it is not that it is coming, it is that we are on the journey.” (Participant 01)

“From a CIB perspective, if we do [look at it] operationally, we started about 13 years ago. Majority of the operational space and support areas were manual. We decided to automate, digitise.” (Participant 08)

“Digital transformation in my mind is an evolution. It’s an evolution of the world that we live in which has predominantly been very much manually driven and facilitated to now properly leveraging off technology... Technology as an enabler, technology as a means of enhancing what we would have ordinarily achieved through traditional means and then using technology to essentially get efficiencies right, technology to scale, technology to essentially enable the implementation of strategy.” (Participant 12)

“It is how you transform through technology in your offering, whether it be in your products, your efficiencies internally, in your reporting, in your capability generally, and that’s how I see digital transformation. I think you get to leverage it in terms of growth, strategic growth, how you position yourself through technology. And there are many banks as you know which are purely digital, like Tyme Bank, etc. So, it’s one avenue, I think if you’re nimble around it, because you have to be dynamic in the digital transformation. Technology changes often.” (Participant 10)

CIB has adopted an all-encompassing approach to DT and because it is part of a greater banking group, it also depends on DT throughout the group. DT is seen as a shared responsibility across all business units and departments in CIB. DT includes the transformation of core systems, customer channels, processes, business models, employee engagement, and the customer experience. By leveraging DT, human capital is released to focus on sophisticated and complicated activities that are maximally value additive from the bank's and customers' perspectives. DT is a tool for businesses within the corporate bank to achieve scale in terms of process throughput and customer volumes. An emphasis is placed on the value of data that DT is fundamental to, and that it is a competitive advantage for CIB, which operates largely in the knowledge economy.

“End-to-end is vital. If you can't get it right end-to-end it will be very much a standalone experience and ultimately the client will suffer. If we do not do it from start to finish, we get half a solution, and you do not get the benefit.” (Participant 08)

“Digital transformation is across not just the firm or CIB but across the whole world, unless you're a pure tech company, digital transformation has always been in the hands of a few technologists.” (Participant 05)

“Digital transformation would mean, heavy host systems and how we transform that, channels with which clients and employees of the bank engage with the banking system, so, its channels. Whether that be web, mobile, API. I would say digital transformation is around processes, so how does a process look, can you streamline processes. Look, you can't put technology into a bad process. So, look at your process and look at ways to add technology. It's through your marketing, through your sales, it's how your salespeople interact, it's their KPIs [Key Performance Indicators]. It is data as well, your AI, all those things. If you could drive a digitisation strategy, it's about automation and getting your customers self-sufficient, that would change the dynamics of the business completely and it might allow you to ramp up the number of transactions that you can do from a volume perspective. You could utilise it to scale.” (Participant 02)

“When I think digital transformation, there is a client facing aspect to that. There are digital channels through which you engage with a client. That’s one aspect. Under the collective noun of digital transformation, you have the digitisation of business processes, which comes with the obvious set of benefits; efficiency allows you to scale, automating repetitive tasks, human capital focuses on the type of activities where they need to apply their mind, not just ticking a button.” (Participant 04)

“The challenge we have in digitalising businesses are not necessarily the front-line businesses, it translates into Operations, Credit, everything. We have already as a bank evolved immensely in risk management and the use of our information and the ability to manage through that.” (Participant 10)

“I do not see digital transformation as a standalone, but I see it essentially as just being interposed on already pre-existing processes in order to make them better.” (Participant 12)

CIB is reliant on DT throughout the greater banking group for its own efforts towards it. There are DT-related differences in scope, scale, structure, and pace between the two that sometimes cause friction.

“It’s a CIB initiative we are trying to push hard for it but what are we reliant on. We are reliant on a client database, reliant on a core banking system, reliant on a card system. Now to get that going, that sits in private bank. The speed at which those [a banking group IT team that exists outside the corporate bank] teams can move at, it’s not like what we can move [at] because they have structured those teams to move at a certain pace around a private banking model. CIB, if something goes down for two seconds, it’s too long. In banking, it can go down for an hour it’s fine. CIB projects, everything must be quick and fast while banking projects may not be as quick and fast.” (Participant 05)

“Look, I think there’s massive appetite for, for collaboration, like we do a lot of work with digital [a banking group IT team that exists outside the corporate bank] and sometimes that process is super frustrating in terms

of, you know, getting access to resources in terms of output, etc.”
(Participant 06)

“We would always have a tech and a business person together in a project [in corporate bank]. It becomes more tricky when you when you deal with big group [banking group] issues, so you would have central services IT [a banking group IT team that exists outside the corporate bank] which is further away from business. It's further away from the corporate bank, further away from the private bank. So, there are things there that get evaluated, prioritised in the IT community with less business input.”
(Participant 07)

“So, we have areas in the Group that are called Digital [a banking group IT team that exists outside the corporate bank]. And there's a digital team in Group IT. But essentially, they are just looking at the client digital experience. Such as website, mobile. I do not think it's unique to us, we have so many products across many different business units, you will always have some friction in between.” (Participant 09)

DT is inextricably linked to the strategic use of data in CIB.

“Digital transformation in a nutshell is automating your business to a level where not only your employees but your customers have access to real time data and information interrelated into your business.” (Participant 03)

“We want to use data as a competitive advantage. And we believe that we should embrace digitisation. Those are the only two statements. Then it becomes micro strategies.” (Participant 07)

“So, think everything and also the data piece is quite important because it gives you a feedback loop about how things are going and it's a measurement piece as well. It informs strategy also. Now the digitising of something, it also asks what information should the data, or you should be capturing that will be useful. For example, you know people say we've got rich data, fantastic data but it's all over the place and how do we use it. And there's a lot of digital transformation around that and we want to put

all our data in one place, right, all our data across all our business units in one place, in one language, that different units can abstract data. This is also digital transformation when it comes to data.” (Participant 02)

DT touches many interconnected business units and departments, as echoed by a few of the participants. Considering this interconnectedness, DT often initiated in one process or area will trigger a need for it elsewhere to be effective. This further validates the requirement for an end-to-end or systems-thinking approach to it. It involves the transformation of operations, products, businesses, and customer channels. Typically, DT would occur simultaneously across the areas, albeit to various extents. Many participants highlighted the importance of digital technologies to transform manual processes.

“There are so many different levels of digital transformation happening at the same time. Different in my view but all moving to the same end goal. Efficiency, less friction, all those things. Now that can be in the operational space, it can be in the product or business enablement space, or it can be in the client space.” (Participant 08)

“So, there’s digitisation, about things that were manual that you’ve made digital, and you capture that in a digital sense and now because it exists in a digital world, it opens up a whole new world with digital processes and technology that you can use.” (Participant 02)

“There are various parts of the business which have been automated over time. If you look at the next push, which is how you target the actual customer base properly.” (Participant 05)

“So, I suppose it’s just the digitisation of businesses and traditionally, businesses were very manual and people heavy and where possible I see it as the digitisation of businesses.” (Participant 06)

“So, I think about things like; we used to have clients call in to do EFT’s, to do FX trades. Clients can now access them via an app, via a digital platform and they can execute the trades themselves. One is about delivering products to clients in a different way, in a digital way they can

access it. Digital transformation in your internal processes, how you do things, where you were doing things on a manual, repetitive process, whether you can automate things like that.” (Participant 07)

“Majority of the operational space and support areas were manual. We decided to automate, digitise.” (Participant 08)

“Taking whatever is analogue and making it whatever is online. So, it’s mostly going from human driven processes through to automated and computer driven processes, that includes everything from the client engaging with us through to us reporting to the regulator and everything in between, the full spectrum.” (Participant 09)

Findings related to ambidexterity and accounting for the different types of customers, products, and services that CIB serves and offers respectively are important to understand the nature of DT. Within these types are complexities related to volume and variation. The following section presents key sub-themes about ambidexterity in understanding the nature of DT in CIB.

4.2.1 Ambidexterity

CIB exhibits different levels of volumes and variation across its client and products sets that influences the nature of DT. CIB places a distinct emphasis on customer relationships and personal engagement with customers, which influences its approach to DT. The nature of certain products and services requires a high level of personal engagement, which is seen as a competitive advantage for those areas. CIB strives to be excellent in both physical and digital channels for customer engagement, which can be different from retail banks’ objectives.

“I think this is very much the corporate bank [name], it is that we want to have very good digital or tech capabilities, but we still want human interaction. So, one has the ability to interact with people and deal with them in a human way. Because that’s our differentiator. So, we want to have the best digital and the best tech enablement, but we want to have

the human touch. We do not want to lose that. We are not a mainstream retail bank so there are clients that prefer to deal on a digital basis and there are clients that prefer to deal on a face-to-face basis. You want to be able to do both. Our clients expect top, top service. They do not want a bot to tell them what's wrong. More and more, clients access products in the digital way. So, you've got to have that capability. You've got to have it." (Participant 07)

Lending businesses within CIB are very much oriented around personal engagement, that is in line with customer expectations.

"I'm certainly in the work that tends to be more on the structured, almost more consulting type of spectrum, you can't take away personal interactions and one on ones and understanding in context and that type of thing." (Participant 01)

"Lending, you've got a whole team of lending consultants here [corporate bank]. Digital transformation of the lending businesses is always going to be tough. So, you go there, how you going to give the client a differentiated experience. You still want to go see him, you still want to show him the love. You still want to be there, toe to toe selling. That's not going to change significantly." (Participant 09)

"You need the consultants in my team to go out there, walk around, understand the business, speak to the people, use the [customer's] management accounts but then also through interaction build something that's very customised to the business [customer's business]. It's definitely more high-value, lower-volume and it requires a bit more [of a] personal touch. We can't have a digital offering, where you tick what you want, untick this, add this, add this, that won't work." (Participant 11)

The corporate bank has a combination of high-value and low-volume transactions and low-value and high-volume transactions that warrant different approaches when it comes to DT. Customisation or personalisation for complex and sophisticated products is the norm, even in the analogue sense. For certain high-value and low-volume transactions, customers expect personal interaction.

However, digitalisation is seen as a necessity for high-volume activities, providing the ability to reach scale, control costs and ensure a convenient customer experience. CIB incubates and grows retail businesses that have high-volume business models in business transactional banking, insurance, and private client stockbroking. When considering the retail environment within financial services, products and services are seldom concluded with the customer without detailed explanations owing to their general complexity.

“Let’s look at high versus low volume, the higher volume businesses that you run, even from a digital perspective, the more the customer expectation needs to fit into the process and the product because you can’t deviate from the process. There’s just too much volume. Digitisation, and the way that digitisation is from my perspective is being used at the moment, is to aid higher volume activity that is to make that higher volume activity easier to manage. I do not think we good enough and utilise digitisation enough in the lower volume space where we possibly can use it to enrich the discussion around what is it that we are doing, whether it is on the research side or whatever. It’s just because it’s so low volume you can deal with the inefficiencies of the system, and you can almost get the system to change every single night for your need, so I do not think we are really conceptualising well enough how to use it at that end of the spectrum.” (Participant 01)

“Even in the treasury risk management space, let me start with that, there’s structured derivative type transactions that is on a risk management hedging type basis. Which are more lumpy and less frequent and then others that are more operational in nature such as executing FX [Foreign Exchange], vanilla FX or even vanilla liquidity and money market. In the context of these two business, one is lumpy transactions, less frequent, sizeable transactions where clients rely very heavily on the human interaction. In fact, they want very little interaction from a digital perspective in that field. However, I move into the other part of the treasury business which is execution of FX or execution of vanilla money market transactions where the volumes are high; we have evolved from a very

manual interaction and we are still in the evolution from a very manual interaction with clients, where clients had to call through for transactions and we are moving towards a world, and are already in that transition, where clients are interacting with us in a digital aspect.” (Participant 02)

CIB has a combination of retail, corporate and institutional customers, and product segments.

“So, both the businesses I’m involved in are retail businesses, which means it’s higher-volume, lower-value. There’s two pieces to it. So, the one piece is, digitising processes that were traditionally manual and when they were manual, it meant that they were more expensive. They were beholden to human involvement. They were not necessarily scalable. Subject to inconsistencies. Effectively, we’ve used digitisation or automation to effectively try and make those businesses more scalable in that space. So, that’s the one piece. And then the other piece is that because we are building retail businesses, the engagement with the client using digital channels is also very important. I suppose in the back end of the business in terms of making processes more scalable and then the front end of the business in terms of opening up new channels of engagement with clients and new ways to service clients. It’s always a little tricky putting financial products in with an ecommerce lens because it’s very different investing in something versus buying a new pair of shoes or a new tennis racket. Most people understand what shoes do and tennis rackets do, but the majority of people out there are not experts on financial services, on financial products.” (Participant 06)

“It’s always difficult in the CIB context to think about the user experience and the digital transformation of the user experience because we deal in wholesale tickets, we deal in some of the businesses in high-value, low-frequency, some businesses, it’s high-value or low-value and high-frequency. And those two problems, you solve slightly differently but again even for the low frequency businesses it’s [digital transformation] very important.” (Participant 09)

The construct of digital channels for retail business models can differ from that required for traditional corporate bank business models. Retail digital channels require that attention is given to the comprehensive client experience, whilst certain corporate bank digital channels only require providing an API that allows the client to access products and services whilst making use of their own front-end. This is necessary in a sector that is characterised by customers with multiple banking relationships.

“There are digital channels through which you engage with a client. There is rightfully a lot of focus on having the appropriate digital channels for different client segments because the objective is not to have a single digital channel ... There’s a big focus on appropriate digital channels for different segments.” (Participant 04)

“It’s a digital channel to deliver value to a client and I agree with that but in this case it’s retail and you can think about [that] very differently when you think about your other CIB businesses or clients. Other CIB clients trade with us a lot, and they will trade with us via an API [Application Programming Interface] and we give them no front end. Here you have to give them a front end, provide trust and a brand, there’s a whole lot of things to create that ecosystem of value in a digital channel. It is a different business model and I just want to caveat it that it is different to our other CIB client segments.” (Participant 09)

“So, for digital, each business unit owns the digital transformation insofar as being as operationally efficient as possible. The digital transformation of the client experience sits in the digital channels. And the channel should own how we want to deliver that to the client. We are not as mature on a channel view across everything as we could be.” (Participant 09)

Customers in the corporate banking sector are generally multi-banked and products are easily commoditised. The differentiator for corporate banks is seldom the product itself.

“In the CIB context, we’ve always assumed our clients are multi-banked in most cases. Even if I have a look at the strategy for transactional banking,

you sign up a client initially as a secondary bank, it's very rare for a corporate transactional banking client to sign up with you and on day one move all of their activity across.” (Participant 04)

“I'm sure that banking to a degree has become commoditised, I'm not naïve to believe that our clients are not multi-banked, so how do we set ourselves apart and what is our unique offering? And I do not imagine that it will only be because of technology or [our] digital offering.” (Participant 10)

CIB has coined the terms “high-touch” and “high-tech” to describe its approach to dealing with the complexity of client expectations, product values, and volumes that characterise its various businesses. This entails a level of ambidexterity in delivering both superior personal-engagement channels and digital channels to customers as required. Having a combination of high-volume and low-volume businesses creates opportunities to share learnings between digitally intensive businesses and traditional high-touch businesses that have perfected client service. Customers expect personal engagement for certain products and services.

“You know we talk high-touch, high-tech, now high-tech, so the way I'd like to view it is we are a high-touch team, a high-touch financial institution, we will remain that. It's important to know who you are and what's your brand, what's your culture, and what makes you different. Now we are a high-touch organisation. It is enabled through technology in getting to our clients...

“So, let's look at, talking from a banking perspective, so let's look at where technology makes it easy for clients to interact with banking products. There are certain places where it does and others where it is less so, for example, advisory, whether it's corporate finance advisory, it's difficult to interact with that financial institution digitally to get that kind of advisory. So that's a very high-touch sort of environment.” (Participant 02)

“I still think within the majority of customers and this environment they still want that personal touch in terms of solutions. Digital as a source of

information I think is critical but not for problem resolution [lending]. I think clients prefer that face-to-face interaction in terms of getting something resolved and dealing with those issues and knowing they have someone that they can contact.” (Participant 03)

“The positioning of the bank for the existing client segments is high-touch, high-tech. Our competitive advantage in most of our segments traditionally has been our service. We do not have unique products, if you come up with something clever, in six months other banks would have something similar. There’s a realisation that we can extend that human-to-human service with an appropriate high-tech supporting platform. In that segment, example, high-net-worth or big corporate, [that] we have a close relationship with, I do not think that the expectation is that the client will no longer leverage the human interface, it will be the human interface combined with the digital interface. The focus is more on, there are certain things where a client would prefer to do things themselves digitally. That’s where you put the power back in the hand of the client.” (Participant 04)

“Business online, that was a bold step for us. It wasn’t a bold step out in the market. We never had a CIB digital offering. It was a big step for the group. Because they just went, that’s not the way we do business, we’ve never done it like this. We [are] seeing the benefit of it coming through now. They are signing up clients, they [customers] want to come to [bank name], they want that service and the combination of high-tech, high-touch in that space, if we didn’t take that jump we would’ve never been able to offer that.” (Participant 08)

“We really are high touch, it’s not just about data.” (Participant 10)

Findings related to the competitor landscape regarding DT are fundamental for understanding the nature of DT within CIB. In the next section, findings that speak to competition and that relate to data, size of the corporate bank, and differentiation are presented.

4.2.2 Competitor threats

The ability of CIB to leverage data is viewed as a competitive advantage. Ignoring the DT of certain products or services leaves CIB vulnerable to competitors that may attract customers through a single digital product through which they can gain access to customers' valuable data environments. There is an acknowledgement that CIB may be trailing its competitors in certain aspects when it comes to DT, which could place it at a disadvantage when it comes to competing effectively in the data arena.

"I think there's going to come a point where we are saying we are actually exposing ourselves, our clients, by having another bank offer one product, at a digitised level, we are exposing ourselves because that bank is now slowly infiltrating. It's an interesting question to me because it's almost a question of allowing the other bank to get their hands on the data and allowing another bank to now understand that client more because they understand the client's data. I think it is something that needs to be thought about and we might have to widen our offering to play offence more than defence which is very interesting to me because it's not the way the group has positioned itself and thought in the past..." (Participant 01)

This was a participant's view about how CIB stacks up to competitors:

"So, your question was how do we position, how do I think we [are] positioned compared to competitors. I definitely think that we are behind. I definitely think that there is an acknowledgement to catch up and that acknowledgement to catch up is driven as much to gain new business as it is to play defence with regards to clients that we already have because the acknowledgement is there that digitisation, that peak into your client's world, and access to data, data becomes incredibly important. Who has their hands on the data, that is becoming a competitive advantage..."

"And it's very interesting, we have had products that have come online, and it's enabled that; and it's becoming almost necessary. We thought we

were like innovative, giving our clients these products sort of online banking type of products in a CIB environment yet on the multi-banked transactions that I'm a part of, that is par for the course from the other banks. We were almost like taken aback that we thought we were going to be innovative, yet it was expected [by the client].” (Participant 01)

“I do not think we would be competitive if we were solely reliant on our digitisation in terms of delivering to customers. Yes, it is changing but not to the extent that some of the competitors are at.” (Participant 03)

CIB is smaller in size, in terms of balance sheet and client volumes, than some of its direct competitors. As a result, it was a slower adopter of technology in the past, as it could not justify the same high costs of technology that its competitors bore. But more positively, it currently has a lower burden when confronting legacy technology, which is an advantage. Being smaller also gives it the advantage of embracing DT quicker, benefitting from cleaner architecture and faster decision making. CIB lags its competitors in certain areas of DT and is ahead in others.

“The fact that we have less legacy compared to some of the players that had technology for many, many, years makes us relatively more nimble, and I say relatively, because it doesn't make us absolutely nimble in our legacy, we just have less legacy which I think gives us an advantage.” (Participant 02)

“It's difficult to say where we rank, because if you look at the big banks it's very easy for them to say go for the best, the biggest, whatever. For us we try find what is fit for purpose for us, based on our size and who we are targeting. Because of our size, we are probably on the tech forefront compared to some other banks ... In some of them we are market leaders, example, [the] trading environment, other people [competitors] would love to have our trading environment ... So, from a cleanliness of environment we are probably in a very good state which allows us to move very quickly. We've got the advantage of being small and having a very clean environment.” (Participant 05)

In the corporate banking sector, it is not uncommon for products and services to be commoditised, which exemplifies the importance of key differentiators such as premium service and innovative thinking. To reiterate an earlier point, there is an emphasis within CIB to serve the client exceptionally in both the physical and digital channels.

“There are elements of your offering that will be commoditised, and already are, that even as providers, absolutely digitally, you have to step back and look at your entire value proposition, the high human capital component, the very vanilla commoditised stuff, the less vanilla technology enabled stuff, and look at the entire ecosystem and say do you have something that’s very compelling to a client, and if that total value proposition is compelling then I think you have stickiness to the client.” (Participant 02)

4.2.3 Challenges

DT is not without its challenges. Many of the participants expressed critical views, suggesting that there are still areas within CIB that need attention. There were criticisms about the pace of DT, and responses that suggested that fragmentation may exist when transforming processes, where certain parts of the workflow are automated whilst others remain manual, which creates friction. DT does not represent an end-state, and, whilst much progress has been made, there is an acknowledgement that there is still much more to accomplish.

“We are not where we need to be yet. It is an ongoing process. In the past there was resistance to it [digital transformation]. Now I think there might be some resistance to the pace of it, the acceptance that it needs to happen is there.” (Participant 01)

“There’s a lot of manual processes still floating all over the place, it’s the case of how do you make those things better? It’s not one thing, example, a website or we’ve done some data here, it’s a case of how do you look at the whole thing holistically? ... you’re not interacting with one system to take the whole workflow through. From a digitisation viewpoint, how do

you automate that whole process to make it efficient so that you can scale?” (Participant 05)

“I worry when there’s Excel and you need to calculate and reconcile. [If] there’s a system where it is quick, accurate, readily available, meaningful, you can chop and change it quite quickly, slice and dice it, look at it this way, look at it that way. That is what I would like to see, that would make my job easier. And digitisation for our clients would be that they can see what’s going on.” (Participant 11)

The nature of DT within CIB is inextricably linked to industry characteristics and customer requirements. The banking industry, in general, has been a consistent adopter of technology for decades. However, the 4IR does represent a step change. The customers, competitors, products, and services that make up corporate banking are complex, as established earlier. Because personal engagement with customers is important in certain situations, CIB must often maintain dual or multiple focuses related to DT. Findings related to the digital maturity of CIB, and the enablers and hinderances of DT are presented in the following sections and assist to form a complete picture of DT in CIB.

4.3 What is the digital maturity of the South African corporate bank?

The Westerman digital maturity model (Westerman et al., 2014) can assist in determining the digital maturity of CIB. The details regarding the choice of the model and its implementation for the purposes of this study are presented in Chapter 2. Table 4 below, which is identical to Table 2 presented in Chapter 2, has been included for ease of reference. It summarises the characteristics put forward by the Westerman digital maturity model for assessing digital maturity. This section provides salient findings in respect of the characteristics outlined in the Westerman digital maturity model.

Table 4: Factors to determine digital maturity (Capgemini Consulting, 2011; Westerman et al., 2014)

Digital capabilities	• Advancement or sophistication of its digital capabilities indicated by the use of disruptive technologies such as cloud services, AI, big data analytics and blockchain • Use of digital channels • Use of data analytics • Transformation of business models using digital technologies; platform business models • Assessing IT-business alignment • Digital skills
Leadership capabilities	• Leadership characteristics to support digital transformation • Strength and visibility of its digital vision and strategy • Governance protocols • Cultural traits to support digital transformation • Investment commitment to digital transformation • Change-management procedures

4.3.1 Digital capabilities

The level at which a firm can generate digital capabilities to undertake DT is an indication of its digital maturity. Digital capabilities involve the appropriate use of disruptive technologies, such as big data analytics, AI, and block chain, to name a few. The use of digital channels to meet changing customer expectations, and the use of data analytics to create business value can also be considered to be key digital capabilities. Being able to develop and obtain digital skills, and align IT and business units, further exhibits a firm's ability to generate digital capabilities. A key differentiator between adopting technology and DT is the ability to use technology to transform business models and create new ones

(Westerman et al., 2014). Findings related to the digital capabilities of CIB are presented in the next section to determine digital maturity.

Disruptive technologies

CIB is building its technology architecture around cloud services and applications. It also makes use of big data analytics with solutions such as data lakes and the Enterprise Data Vault to bolster its data capabilities. AI is used to assess and monitor covenants for loans. Views from many participants suggested that a cautious approach is taken with new technologies. New technologies are selected if a clear purpose is established and if there is a demonstrable use case.

“I know that the transition to that architecture that sits within the Azure platform will enable a lot more use of big data technology and big data techniques. I know our data scientist has spoken to me about the use of AI and the training of AI to look for patterns and trends and the like, but there is a need to have data in a central location first. So, our transition to that certainly shows the organisation and CIB’s willingness to adopt future technologies.” (Participant 01)

“We’ve looked at artificial intelligence. We’ve brought it into some of our operational areas. For example, in MidOps [Middle Office], we use it to help us assess and monitor certain covenants.” (Participant 04)

CIB prefers platform architecture that brings with it the key characteristics of standardisation, interoperability, and modularity. This favours agility, cost savings, and scale.

“We are moving more into an Azure power apps world. You prefer a full stack developer that understands the full delivery rather than having a UI [User Interface] developer, and a VPN [Virtual Private Network developer], and a core DB [Database developer].” (Participant 05)

A sober mindset prevails when assessing and adopting new technologies. A use case must precede adoption.

“We had a speaker the other day that spoke about, he said he walks into businesses sometimes and then the businesses say I would like to AI [Artificial Intelligence] my business. And he says it’s the most stupid comment ever because what does it mean, what does artificial intelligence mean in a trading process? What does it mean in a lending business? It’s different for everybody. So, you got to get into it and unpack. These big statements for me is not the way business works. It works with individual analysis in each business.” (Participant 07)

Digital channels

CIB uses digital channels to engage with customers about various products and services. Digital channels are necessary to compete in certain markets, improve the customer experience, reduce cost, and enable scale. Digital channels are fundamental to high-volume business models.

“So, if you look at a digital channel, you need to see what advantage that digital channel gives you to compete. The benefit of a digital channel is it allows you to scale massively. So, if you take the FX [Foreign Exchange product] example, it’s a commoditised item and you [customer] just want the cheapest price, the digital channel allows you to compete very effectively, and it’s [cheapest price] not necessarily what the client is asking for, so [rather] to interface with liquidity providers and things like that.” (Participant 05)

“Effectively we’ve used digitisation or automation to effectively try and make those businesses more scalable in that space [retail businesses]. So that’s the one piece. And then the other piece is that because we are building retail businesses, the engagement with the client using digital channels is also very important so it’s come up in both those places.” (Participant 06)

Data analytics

The strategic use of data is a strategic objective for the greater banking group as well as for CIB. There is an emphasis on creating centralised data repositories, scrubbing data, and extracting meaningful insights from it to enhance products and services, assist with decision making, and enable it to become a competitive advantage for the firm. Most business units within CIB employ the services of a data analyst to assist with building individualised data capabilities; however, leaders may not have the knowledge to extract meaningful value from this function. Participants expressed a need to improve the data capabilities in CIB, and mentioned that this is currently a priority.

“Data still tends to live isolated, there is a lot of work being done at the moment to bring data to a centralised point which would make the usage thereof better. Quality of data also better than what it was in the past. Generally, a better appreciation for the fact that data needs to be put into a system accurately and timeously, not there yet.” (Participant 001)

“Data is something we invested in significantly in recent years. There was this realisation that we had to make access to data, democratise data, and to solve for data accessibility which was a project that ran for a few years. We put in place the Enterprise Data Vault. Coupled with a deliverance strategy to have embedded data analysts sitting within the different business units ... I think we have close to 15-20 embedded data analysts ... There’s a focus on data driven decision making.” (Participant 04)

“The central strategy would be, and then look at it, this is the [banking group] statement as we see data and digitisation. We want to use data as a competitive advantage.” (Participant 07)

“For us to deliver the value in the way we have has been very good. Data quantity, data quality, is as poor as we capture it in our source systems. There are some source systems we need to get better at. But data quality, I’m never a black and white type guy. It’s not like it’s in absolutes. Our data quality is good. Is it good enough? No. Can we do better? Yes.” (Participant 09)

Data is dependent on collaboration, and business strategy involves thinking about each business through a data lens.

“I want to talk data, a collaboration around data. In this day and age, when you talk technology, without the data piece you are missing a large component ... out of ten, four or five years ago we would’ve been a two [evaluating data capability]. We are currently a four and a half or five. Significant improvement over a short period of time. What will make this a success is having data in a uniform way all housed in one place like a data lake or something. And then having it accessible throughout the organisation with data specific individuals within business. You know when I mentioned, you got business, IT, tech, sales, you’ve got to have a data person there as well. Are you thinking about your business data first.”
(Participant 02)

Leaders may not necessarily have the knowledge or experience to extract value from embedded data analysts.

“So, I get the data analysts invoice and I’m paying it and it’s a lot of money, and I hear it when he says that it’s difficult to extract the information. He could tell me anything, I do not know if it’s difficult. I do not know if he sits around all day long and it’s super easy for all these different systems to talk to each other. I do not know that. I’m not qualified. It’s as mysterious and unknown to me as it is for me to go now and operate it. I’m paying every month, and nothing happens. And he’s got integrity, so I trust him.”
(Participant 11)

Business models

CIB has several businesses that exist in the business transactional banking, insurance, and stockbroking sectors that are based on business models that are inextricably linked to digital technologies and channels. These businesses would otherwise not be feasible. Participants’ views suggest that CIB is not pursuing digital business models because it is trendy, but rather because it is necessary.

“The insurance business is a platform business in the sense that it is a fully digitized business ... But effectively, probably the first in the world business where a client can do everything from coming onto online banking, all through the web page, or through the app can understand the products that are available, understand the pros and the cons, how they function, can do quick quotes, can do needs analysis, can go through underwriting, can get processed, can view their documentation, can update or change. Everything can happen digitally. So that’s very much a platform business.” (Participant 06)

“So, we actually now launching a new business [details modified as it pertains to proprietary concepts], which will be fully digital. The answer was first that we felt that it had to be very low cost, very easy to transact. Enable it to scale. That meant that it had to be digital. And it wasn’t like it had to be digital first, it had to be low cost, scalable, straight through processing, and then by implication, that means that it had to be digital, those are the examples.” (Participant 07)

“[Talking about business transactional banking] The upfront capital will always be hard, you’re building a brand, the product looks completely different. Yes, the underlying components are there, it has to add up to the rest of the market. But the numbers didn’t make sense to build a massive high-touch business. It had to be as slick as possible and that was digital.” (Participant 08)

IT-Business Alignment

Historically, IT and business were viewed and operated as separate units. However, in the last few years there has been a concerted effort to bring them together, as with all the other business units in CIB. Having both areas jointly pursuing business strategy is viewed as fundamental to success. Strong sentiments were expressed in support of this view of IT and business units working together; however, whilst IT may have better representation in management discussions, it needs to improve its visibility within business units to help identify opportunities for DT.

"It took us a while to get there, for the last five or six years we pretty much act as one. The problem is not, you do not go out there and specifically say you separate. But banking has always seen it as separate, and you grow up with that. Tech sits there, ops sits [sic] there and frontline is more important and all that stuff. That feel flows down, we did a lot of work and not only in frontline and we could not have asked for better leaders in that space that adopted the slow change but very much a part of the process." (Participant 08)

"We do not see it as IT and business. IT is part of the team, they get invited to offsites, they get invited to evenings out. They are part of the team." (Participant 09)

"The model we're trying to promote, so if you look at a project you want a core team that builds the project together which is ops, finance, business and whoever you need to build that project. They would work together on a daily basis to deliver whatever you need to do. They would understand what they are building as they go along. They would test the system, they would contribute to the system as it gets developed so it's not a surprise at the end of the day." (Participant 05)

There is a call for IT to improve its visibility on the floor and within business units to help identify opportunities for DT.

"If I think about technology, my focus is not that every day, my focus is to get money out the door and to solve financial problems for our clients. But I do not think we have enough people in the technology areas who understand what we do and can come up with creative and innovative solutions. They almost ask us, and we tell them. But we are not creative in that sense, we are focused on something else. I almost think that we need people to tell us what we need, wouldn't you like to see this and this and this. Someone who understands our business and then goes wouldn't it be great if you could see this, wouldn't it be helpful if you could see this, as opposed to waiting for us." (Participant 11)

Digital skills

CIB is taking advantage of several ways to access specialist skills in the IT domain. Besides being an aspirational employer, CIB has partnered with a specialist recruitment firm to crowdsource IT skills and solutions. CIB uses contractors in the project arena that can be characterised by flexible demand. However, views suggest that more permanent resources are required because of CIB's ongoing DT.

"You need to find a way into the local SA [South African]-based developer community. A partner has done a lot of work with us where we've partnered with them. That's almost more developer awareness and they've helped with starter kits, videos, regular events." (Participant 05)

"Difficult to find skills so you won't have all the skills that you need in your business. So, to go and outsource pieces of work and ask this house to do this or this house to do that, we do that. So, we do a bit of both." (Participant 07)

"From a[n] operations and digitalisation and frontline perspective we've got some of our applications that we use, we have the best team in South Africa. Internationally, people look for them. Python skills, very senior people. CIB is fortunate to have some great people in the team. You will always have churn, we go through some times when people go and start head hunting our people." (Participant 08)

Participants who were senior leaders questioned the mix of permanent and contract resources, stating that there is a need for more permanent resources.

"A good developer is worth three average developers. The benefit you get from strong people is almost exponential, not truly, but it sometimes feels like it is. There are cliches on the war on talent, and hard to find resources, some of it is true, we are an aspirational employer and if we identify five strong developers out in the market, there's a very good chance that at least one or two of them would want to come and work for us. We've had

decent success in the past year on bringing in stronger resources and upping the average. My sense on the floor today, we are a little bit too contractor heavy. In the past we have supplemented our permanent staff with contractors; that ratio should be a little more permanent than contract. Where we are 50/50 on the developer scale, I would be a little more comfortable with two thirds, one third. But we're working at it." (Participant 04)

"I do not know why we've decided to have these data analysts that consult to us that are not employees. Obviously, that's a decision that was made high up and they must have their reasons but one of the things that I find for myself is if you own shares in a company, you align the interest of the employees and the shareholders ... I'm not questioning anybody's integrity here, I'm just saying it is also in my data analyst's interest to take a long time to deliver something because that is how he gets paid; based on time, it's a timesheet. So, can I monitor when he works, no he works whenever, they do their stuff, they tell us things." (Participant 11)

This concludes the findings related to digital capabilities. The other component of assessing digital maturity is leadership capabilities that are specific to DT (Westerman et al., 2014). The following section presents these findings.

4.3.2 Leadership capabilities

Leadership capabilities for DT involve technology competence along with formulating and disseminating the digital strategy and vision; establishing effective governance protocols; and creating effective mindsets for investment, innovation, experimentation, change management and risk. In the following section, findings related to these characteristics are presented with a view to assessing digital maturity.

Leadership characteristics for digital transformation

Interview participants expressed that certain leaders are comfortable with DT whilst others may not be at the same level. This could be because of certain businesses being thrust into the digital realm where this has become a necessity, whilst for others, the same sense of urgency does not exist. Overall, the ability of leaders to take advantage of DT is inconsistent. Participants strongly suggested that while leaders are not required to become technology experts, they need a general level of technology competence to be able to identify opportunities from DT. This is especially valid in an environment that is characterised as bottom-up in terms of leadership and strategy, is dependent largely on teams and individual actors in order to advance, and where most leaders are financial-product specialists.

“Many of the leaders in certain of CIB are specialists in the particular offering to their clients. They run the nuts and bolts of the banking offering, so they are not tech individuals, it’s not their background ...

“In pockets, there are some leaders that I’ve met, and they think can technology really impact this particular business. So sometimes I think that there are varying degrees in which technology can affect certain businesses.” (Participant 02)

There can be leaders in CIB that are product specialists that do not necessarily have meaningful knowledge of DT.

“You will get leaders who are skilled and comfortable with using technology and digitisation as part of the workflow and what they are responsible for. They will use it, they will gravitate towards it, they will understand how those product sets make their lives easier, and then almost in contrast to that you get leaders who say this is the workflow, this is the way we’ve done it always, I do not want it to change.” (Participant 01)

“I just think that the vast majority of the leaders that run the different businesses are specifically chosen around their abilities and skills around that product set. I do not think as an organisation we’ve spent a lot of time upskilling them [this participant is a leader of a business] in the digital universe. I think that’s why we still find there’s a lot of manual intervention in doing things.” (Participant 03)

“Businesspeople do not necessarily understand the IT part well and what you can do. Some people do not understand the possibility of what you can do. You’ve got tech people who do not understand what you can do with the tech in a business context. What we’re desperately trying to do is bridge the gap.” (Participant 05)

Leaders are not meant to become technology experts; they need the awareness of DT and an entrepreneurial will to benefit from it.

“I think it’s less about the skill at that level, they have to tune in to the sense that they will listen to suggestions and to the people that this is their lives. They will put a problem statement out there, they will get the right people around the table. They will look at all the solutions, they want to get the best. Ultimately, we will work closely together ... there’s not a lot of technologists running businesses, it’s not the way we’ve built the bank.” (Participant 08)

Strength and visibility of digital strategy and vision

The greater banking group to which CIB belongs holds both digital initiatives and the strategic use of data amongst its highest strategic objectives. In an environment characterised as bottom-up in terms of leadership and business strategy, this has meant that each business unit needs to develop its own digital strategy as part of the business strategy and interrelated with the different types of products and services that the unit offers. When assessing the digital vision of CIB, participants mentioned that such a vision did not formally exist. However, most participants expressed clear views of their expectations from DT and how it could benefit customers in the future.

“The central strategy would be, and then look at it, this is the [banking group] statement as we see data and digitisation. We want use data as a competitive advantage. And we believe that we should embrace digitisation. Those are the only two statements. Then it becomes micro strategies. What does it mean? So, do we have CIB strategy about digitisation? We just put the flag out there. We would like each and every one of our business units to think about how they can use digitisation to enable, transform, improve, strengthen, differentiate the business. That’s it. And then you let the bottom-up approach happen.” (Participant 07)

“So, I have no idea [a senior leader about CIB’s digital vision].” (Participant 06)

“We never really sat down and decided as CIB this is where we want to go with digital.” (Participant 08)

“Not that I’m aware of. I think in terms of a strategy document, there is a lot of talk around but not defined across the board. It is more specific to certain projects or opportunities.” (Participant 03)

Governance protocols

There are levels of decision-making committees that provide oversight and alignment in terms of resource allocation, prioritisation of projects, and the adoption of new technologies. Approval procedures are designed to be as organic as possible to speed up decision making and minimise bureaucracy. Disputes are worked out amongst business units that may be competing with each for resources, with intervention from executives only when necessary.

“We’re not as formal as other banks in terms of saying this is what we’re going to do, this is not what we’re going to do. We’re very disciplined as a CIB Manco [management committee], there are several CIB Manco’s, there’s one which the Head of CIB runs, there’s an Ops [Operations] Manco, between all of them we’re quite aligned with what endeavours we

take on and what we do not take on. The governance there is very good ... And the same thing happens you do not want to put in technology that is untested especially in a banking environment that falls over.”
(Participant 05)

“There’s no specific ... business won’t always come up with what’s needed and tech won’t always come up with what’s needed. There is a balance between business will say this is a new opportunity, this is where we want to go from a strategic perspective, they will then sit down with their core team and decide this is what we want to focus on. We tend to not focus on not more than five key priorities in a business area.” (Participant 08)

“Governance for me, it runs in CIB, is run by our twice yearly budget process. Each of the businesses presents a budget, digital and or what you think about building in terms of digital, it’s all presented there. That for me is the governance, we have other governance processes once we want to build a project. Around making sure there is no duplication around tech, making sure there isn’t another area in the bank that has something we can use etc.” (Participant 09)

“From a governance perspective, CIB is fortunate they have something that has been working for them for the past four or five years. Business heads understand what is important and that helped. So, we do not dictate what needs to happen from a support, tech perspective and its inclusive. We scream, and shout and swear a lot, but we put it within the realm of maturity. It’s not overly governed, it can go wrong where it’s too difficult to get something through. It’s a commercial mindset, that’s the main thing.”
(Participant 08)

Projects that are related to regulatory requirements are the first priority; projects related to technology that has reached the end-of-life stage are next; and then projects that are related to business strategy or that present opportunities, or both, are looked at.

"It will be part of our normal project prioritisation process. So, we run a process that tech, IT, digital, all of that, and we evaluate in that process, some things you've got no choice, though. There's other regulatory requirements so that takes up so much capacity ... Then there are things that need to be replaced because they're at the end of life, not fit for purpose so you got to replace them, systems, processes going to replace them. That takes another set of capacity. And then you end up with the last piece which is really where you can make some decisions ... The first thing you really do not have a choice. Then you're in the third box where you say. What do we like to do? What would we like to invest and analyse? And that becomes a resource game. So, we would then say there's 20 potential things here, let's work out what [the] value proposition is, what the potential upside is, now that process happens in the Manco, in the business unit, in the IT community, everybody's involved in it. And then we end up with saying of the 20, we've chosen 5. And there are trade-offs, so some people are unhappy." (Participant 07)

Investment commitment to digital transformation

Investment in DT cannot be limitless. CIB has certain financial targets that it needs to achieve, and any investment will need to make sense considering those. Where there is a genuine requirement, funds will be approved for use to undertake initiatives related to DT. CIB runs a significant number of IT projects every year in terms of fiscal value and physical resources. As each business unit has a certain degree of autonomy, it has the latitude to make investments in DT that are justifiable. Participants noted that there is no designated budget for experimentation or opportunistic ventures.

"Unfortunately, it [investment] is slower than you would like. There's also a framework that you have to operate in and that very much is the board saying this is what we need to achieve, we need to stay within this cost to income ratio, return on equity needs to be this, return on internal capital needs to be this, operate within that." (Participant 08)

“Again, examples you would have, to have a guy running in an investment products business, he would like a digital database for these clients, of all his products of the maturities, he’d like digital, a digital marketing strategy on top of that. He’d like all these fact sheets to be digitally enabled, e-mailed to their clients on a regular basis, updated automatically. So, he’s going to unpack all of that, and he’s going to come up with a budget for it in his business unit.” (Participant 07)

“And we say we going to put like One Hundred Million Rand aside for experimentation but that never really happens because every time we run into something we release those provisions and then that’s gone. So, I do not think we ever have a provision budget.” (Participant 05)

I think we will always run One Hundred Million Rand worth of projects from one year to the next. The exact projects might differ, the area may differ but thinking we’ll stop investing in tech is short-sighted.” (Participant 04)

Cultural traits for digital transformation

Participants emphasised the value of collaboration within CIB and within the greater banking group to transform processes, products, and services across team lines and to benefit from expertise, knowledge, and the interoperability of systems and applications. When describing the predisposition towards experimentation and innovation, participants’ views revealed a conservative approach that favours tried-and-tested methods and sometimes means being a follower of competitor activity. CIB does not see itself as being a leader in digital innovation within its sector; instead, its focus is on delivering products and services to its customers in ways that they expect and on meeting the high level of service quality that is the differentiator for CIB. There are certain business units within CIB that are market leaders in every respect.

“Technology and business must always sit together. They must be in the same ecosystem. It’s very important. Because what that does,

continuously sharing, continuously engaging through osmosis ... Having cross-functional teams speaking the same language. But also, to my original point that digitisation should be an enabler. It's up to us as business to embrace that and to bring our colleagues from the technology side of things closer into the business where we conceive business strategy. Allow them to put their DNA into it, where we execute, allow them to put their DNA strand into it, and even in the BAU [business as usual] processes how do you continuously innovate to be better, etc." (Participant 12)

"I do not think we can say that we want to be the most innovative digitally. I do not think we can say that. We want to have the ability to deliver products to our clients that are suited to them in an easy, accessible way with high levels of service. Do we want to launch an app? And a new function every three weeks on the app? No. We do not want to do that ... We want to give great service to our clients. We want to be transparent. We want to be high client service and deliver the products that the clients need to them in the best way we can ...

"We would like to be a market leader in our chosen franchises ... So, culture of innovation, we want to be innovative. We want to be creative. That's not just in a digital way, it's in the way we do things, the way we deliver products, the way we service with our clients. All of those things." (Participant 07)

There is room for CIB to benefit from external collaboration with respect to expertise and strategic insight.

"We are not very good at the outward looking enablers ... Most people are very insular and do not understand what the world looks like, what other competitors look like, what else is out there and what they are doing ... not enough people go out and understand what else is out there, what other banks are doing, non-banks doing, what is Amazon doing, what is

everybody else doing which gives us a competitive edge. I really think we need to do a lot more of.” (Participant 05)

Collaboration lends itself to creating opportunities for cross-functional teams and cross-skilling, and for shared learning and knowledge.

“Historically, people went on different paths, now there’s a lot more discipline around it so the collaboration is absolutely there. We must learn through certain things that one business unit has done vs another and collaborate in that regard. It only makes us better. So yes, I think there’s a lot of collaboration.” (Participant 08)

Change management

Participants’ views suggested that there is no definitive procedure or guideline for change management and that it is an area that needs improving. Communication, coordination, and alignment between teams can be improved. Many cited the example of the slow acceptance and adoption of the CRM system as reasons to improve in this capability.

“Change management is a continuously iterative process. It require to be driven with a lot of discipline. When you introduce change, there is a process you need to follow, benchmarks that you need to follow. I think we can do a lot better than how we are currently doing it at the moment ... So, I think it can be a lot better, I think some of the communication between business and technology could be better. I think sometimes the tail wags the dog. I think there can be, talking to your point around collaboration, a lot more intentional collaboration.” (Participant 12)

“I think it’s been very limited to date. Just look at the role out of CRM, it’s taken a very long time and just look at the archaic systems, paying dual licences things like that. And is it still running and is it enforced, any new systems? No it’s not. It’s a wish list.” (Participant 03)

This concludes the findings related to the digital and leadership capabilities that are required to establish the digital maturity of CIB. CIB's approach to these capabilities is developed around a singular mindset that prioritises the customer relationship rather than technology. However, technology is seen as a way, when appropriate, to better serve the customer. In the following section, the findings related to the enablers of DT within CIB are presented.

4.4 What are the enablers of digital transformation in a South African corporate bank?

In fulfilling the research objectives for this study, interview participants were asked questions with the aim of investigating the enablers of DT within CIB. This section presents findings related to these enablers and follows the structure of the conceptual framework as set out in Figure 4 of Chapter 2.

4.4.1 *Strategy and vision*

In this section, the findings related to themes and sub-themes that pertain to the enablers of strategy and vision are presented. The key themes informed by the data were strategy and investment.

Strategy

CIB is part of a greater banking group. One of the banking group's strategic objectives, which is driven by the Chief Executive Officer (CEO), is the strategic use of data, which is very much dependent on DT. CIB aims to develop this capability to assist with accurate reporting and data-driven decision making. It also aims to convert data into competitive advantages in terms of shaping the products and services it offers. To assist in its efforts towards achieving the objective of the strategic use of data, CIB has made it the prerogative of each business unit to employ the services of a data analyst that will be situated within the business unit. By embedding the data analyst within the business unit, this provides the data analyst with a well-informed sense of its business model that enables it to identify customised opportunities to leverage data. This approach is

favoured above having a central pool of data analysts that may not be able to immerse themselves fully in a business unit if they are loaned from the centre. CIB has invested significantly in recent years to create a data lake and Enterprise Data Vault.

“I think in theory, digitalisation is one of the CEO’s, six core objectives for the group. It is the strategic use of client data. So, you can see through that at the core of the group, not even just the corporate bank, there is acknowledgement that digitisation and data, which are inextricably linked, is one of the six key strategies and principles of the group ... Strategic use of client data, there is a big focus on that and then accurate information for reporting to make the correct decisions would be another focus.”
(Participant 01)

“Data is something we invested in significantly in recent years. There was a realisation that we had to make access to data, democratise data, and to solve for data accessibility which was a project that ran for a few years ... I think we have close to 15 to 20 embedded data analysts. One sitting on the forex desk, equity desk, in coverage, in credit, in financial crime. Throughout the business you now have embedded data analysts leveraging this data asset where we brought all of our data together in EDV [Enterprise Data Vault] and they’re building our data products.” (Participant 04)

CIB does not stipulate an overall digital strategy. Instead, each business unit within CIB formulates a business strategy to achieve certain goals and objectives, and, for the majority, these are driven by financial targets. Participants’ views showed that digital strategy and business strategy are inextricably linked. All avenues, including DT, are considered in successfully executing business strategy. The business strategy of CIB is the sum of the business strategies for each business unit that falls within its ambit. This is characteristic of a bottom-up approach in terms of strategy formulation and implementation. In the past, there was a more elaborate top-down business strategy for key strategic objectives; however, this often yielded poor results owing to the autonomy of the underlying

business units and the lack of ownership, accountability, and responsibility that comes with having a general strategy.

“Typically, we very much about devolved decision making so we really trying to get that thought process to happen every day, in every business unit. Every business is quite different. What does digital transformation mean for lending businesses? What does it mean for trading businesses? What does it mean for our investment business? What does it mean for an Ops [Operations] team, for a technology team, it's all different? What we trying to do is we say let's get every business unit to think about what digital transformation means for it, and think about it, process it, strategise it. Lots of micro strategies.” (Participant 07)

“So, on the digital strategy you have a business strategy, a functional strategy enabled by digital. A strategy for me needs to stand on its own but be enabled by other things.” (Participant 02)

“To try separate the strategy from the digital capability is an almost academic question ... In my experience in CIB it's [DT] is not seen as an IT issue. It's only a business strategy in the context of enhancing a client experience or taking a new product to a client or becoming more efficient in offering the products you offer today. You need the business hook. Digital transformation is not the why, it's the how.” (Participant 04)

“I've never seen it as separate; business strategy is digital strategy, we just enable it in a different manner through what we refer to as digital strategy. But it is always business driven. We do not have a separate strategy to say this is our digital strategy.” (Participant 08)

“In the past we had all these big strategies with what we were going to do in the next two to three years. We do have to have an idea of them, but we ended up never executing them because it was dependent on budget, other things come up.” (Participant 05)

Emphasis is placed on decentralised decision making and the autonomy, to an extent, of each business unit. Unambiguous financial targets drive business strategy and digital strategy.

“You got to think about it, every little business unit must think about it. And then it becomes a bottom-up process. So, what does it mean? We say every business, every little unit must figure out what it means, come up with its own strategy and its own plan. And the combination of all these different things will then be what it is for business strategy ... We very much about decentralised, not big centralized. Because in my view, when you make big, centralised decisions, that's typically where things fall over, because nobody owns it, nobody owns the strategy, the objectives, the deliverables, the budget, nobody owns it because there was a decision made in the centre.” (Participant 07)

“But because the businesses owns their PnL [profit and losses] and their expense line very tightly in our CIB construct, and I do not want to generalise that at all, to a much more granular way than other banks. And because of that, you find that businesses are very focussed on being as efficient as possible because the business owner thinks both revenue as well as expenses. Making sure the whole package is as efficient as possible forces you down the digital transformation route in my mind. So how does it support strategy. I think strategy at CIB is bottom up, and because strategy is bottom up you have to make money, you have to make more money. You have to get positive jaws, to get positive jaws you have to use digital transformation or use digital to become more efficient.” (Participant 09)

The IT teams and business units largely work in unison to deliver on the business strategy, which is linked to DT. This is validated by the various units that are represented on the management committee for CIB. Many participants emphasised the joint working relationship between business units and IT as well as the shared responsibility and accountability for the outcomes of projects.

“As soon as you start saying the words business and IT, the divide has already been created. And I’ve seen this pan out negatively in the past where these will be two separate things. Business being the sales group, doing something with clients or strategy and IT doing something separate. So, the communication lacks. The development of the strategy is not the same because they are two separate teams, they [are] not involved in the same discussions. The ‘why’ is not articulated broadly because it is not joint or shared. And therefore, it falls through the cracks.” (Participant 02)

“Then we’ve collated that together, and there may be certain pieces done individually for speed of time, but it’s a joint business strategy which includes a full vertical stack, then you deliver. What I found is that I have seen the opposite of this. Some of our Mancos, and transactional banking Mancos [Management Committee], we have the full business represented in our Manco; IT, ops, product and pricing, sales, there’s legal. And we are a joint business. And what I find, when we do things like that, we have a relatively better chance of success than not. I’ve been on both sides of the coin and been guilty of that as well.” (Participant 02)

“[In] CIB we’ve been very clear in the last six years, business, digital, tech, ops, we all run business strategy. Everybody has got a say in it, never separate. People do not tend to understand it like that, they put ops there, and they put tech there. I mean the Manco here; everybody sits in the same Manco, so you’ve got business driving it.” (Participant 08)

CIB has developed a business online channel to deliver products and services to corporate clients. It is envisaged that multiple business units or product areas will be able to offer digital products and services through this channel. The business online channel is predominantly being used by business units characterised as retail, or high-volume, or both for now. It also assists to streamline processes such as client onboarding and eliminates duplication that can emanate from autonomous business units operating their own end-to-end processes for the same customers.

“So, if you look at a digital channel, you need to see what advantage that digital channel gives you to compete. The benefit of a digital channel is it allows you to scale massively.” (Participant 05)

“We are already working on other areas of the bank serving the same segment to expose their products through the same channel. So, whether it is Trade Finance business, or a forex client, or any corporate client will have access to products and transaction capability through the business online channel. That’s one noteworthy digital strategy.” (Participant 04)

“So, for digital, each business unit owns the digital transformation insofar as being as operationally efficient as possible. The digital transformation of the client experience sits in the digital channels. And the channel should own how we want to deliver that to the client. We are not as mature on a channel view across everything as we could be.” (Participant 09)

In the operations domain of CIB, strategy is built around capabilities such as payments and trading. Capabilities include a combination of people, processes, and technology. Capabilities are being built with the intention of commercialising them for use by third parties and not just for CIB’s use. Besides the obvious prospect of additional revenue by adopting this approach, CIB makes an important step towards becoming an enabler of banking products and services for third parties and not merely a provider of financial services to customers. By using the capabilities’ model, different areas of CIB and the greater banking group are able to access commonly used capabilities such as payments in an off-the-shelf or application format that curtails duplication and improves the timeframes for product launches.

“From a strategy perspective operationally, the language I use with my teams is: we stand up capabilities. A payment, FX, or equity trading capability. The capability is the combination of people, process and tech. Excluding front office, the rest of us, there’ll be an Ops [Operations] lead and a tech lead for the capability but there’s one strategy for the capability. The ops strategy is no different to the tech strategy ...

“We’ve done the research but the moment you can do debit order collection, there’s another segment of clients you can go after [for Business Transactional Banking], the moment you can solve for cash, there’s another segment of clients you can go for. That list of features is the starting point of strategy for transactional banking capabilities.” (Participant 04)

“What we try to push and we haven’t got there as yet, we really want to build it [capability] as a service that not only this organisation can use but that anybody can use. And why we say that because let’s say one day this organisation is not only servicing itself like if we build payments, our design is such that its payment services that we can sell to anybody.” (Participant 05)

“We are looking at the capabilities model. Make the capabilities easy to access. If you need to go to the extremes of coding language, try keep it generic ... We will give you a widget or a microservice that you can plug into your own thing. It will understand what a spot deal, what a forward deal is, it will understand if you need to do a rates query, it will understand if you need to do a BOP [Balance of Payments], it will understand all these components. You just need to use the right component and we will give that to you. You do need to build out all that stuff. And that’s the hope to make things faster, so each division will launch one set of capabilities. So, we will launch all the payments capabilities, people just need to use it as a service.” (Participant 05)

Investment

The declining costs of technology and new ways of consuming it, such as cloud-enabled services, have initiated certain business models that otherwise would not have been feasible. In the past, banks with larger client bases could outspend smaller competitors when it came to technology by leveraging client or transaction volumes and positive economies of scale. However, modern consumption models offered by technology providers and the increasing accessibility of technology enable smaller banks to compete directly by taking

advantage of lower upfront capital investments, immediate access to current technology, and the flexibility to consume only that which is required at a specific point in time. CIB considers buying, building, and partnering when investing in technology solutions, with each having merit, depending on the motivating factors. These factors may relate to capacity constraints, expertise, cost, and timing. Outsourcing is also used by the corporate bank to gain access to expert skills and to manage fluctuating demand in the dynamic project environment.

“That’s where the cloud benefits us and levels the playing field. We are hoping to level the playing field in the cloud. If we push things into the cloud, we can scale things when we need to. The tech will be the same, but we can scale things when we need to. That’s why I’m saying we [are] building everything as a service. If you think of it as a service, use within the organisation and for others outside the organisation. I think we really are in a really good space with regard to that.” (Participant 05)

“Historically we haven’t, we didn’t outsource a lot, historically we were mostly internal. We would purchase systems; we would do any enhancements and developments ourselves. We are doing more outsourcing now. So, we are getting teams and squads to do work for us. So, we do both, dependent what are the skills now in the market. Difficult to find skills so you won’t have all the skills that you need in your business. So, to go and outsource pieces of work and ask this house to do this or this house to do that, we do that. So, we do a bit of both.” (Participant 07)

“Let’s look at transactional banking for example, us a financial institution [CIB]. We’ve taken years to get into it. The reason why we got into it over the last few years was because technology got cheaper, got better, and it enabled us to look at a business model, not brand new in the market by any means but brand new for us.” (Participant 02)

CIB has realised that in the modern environment of platform architecture it is both futile and impeding to become an expert in all requirements for technology. The

emphasis, instead, is to depend on experts in a particular technology or solution as much as possible.

"I think quite evolved, in terms of how we do, like most organisations in terms of buy, build, partner. And in certain fields where we are not experts in that particular aspect, we should shy away from building stuff like that. We are not the experts, there are lots of technologies to choose from, you can keep the price down, you can compare functionality and there is change in the market you can often change with the partner as opposed to keeping a team up to speed. So, I think every IT discussion that I've been a part of recently the build buy partner is always on the table as options to explore always. For me that's an evolved state." (Participant 02)

"My generic view is if something is a commodity, then buy. So, if someone has solved this problem before and it's not a differentiator. So, buy that component. It will cost you more to build it and there's years of R&D that's gone into that calculator that's available. So, there's a lean toward buying especially when is commodity and not differentiated." (Participant 04)

"For all of them [vendors], we say we want a cheap database, we want you to put any system into the cloud, and we do not want to pay a capital cost, example, a five-year licence for the system, we want to rent the bits I need without the bits I do not need. With every vendor, moving forward, I will ultimately move in that direction. All we do nowadays is integrate. Ultimately, now with an on-prem integration pattern, in future it will be cloud-to-cloud integration, and we wouldn't need to [integrate on-prem] anymore." (Participant 05)

"There is an absolute decision and need to work with outsource partners. CIB wants to go the Lego approach. Where you use the building blocks provided by your supplier [and] you build your workflow or your product set around those building blocks and there is definitely no appetite or very little appetite to custom develop. The reason for that is two-fold, efficiency and cost. Obviously, when you build custom code and a Microsoft or SAP, or

whoever your service provider is, runs an update or provides you with an update, you have to go and update your code for that and there's a big need to move away from that. So, from my perspective from my experience, a very strong reliance on outsource providers, taking what they offer, using a Lego approach, taking their blocks to build your castle."
(Participant 08)

Changes in regulation, complex measurement, and reporting to central banks have also been reasons for embracing DT. This has become pertinent, especially after the 2007–2008 Global Financial Crisis, which saw a flurry of new regulations and reporting techniques being introduced. DT linked to regulatory requirements must often be prioritised ahead of business initiatives, which infringes on capacity for DT elsewhere. Effectively managing risk in a banking environment, using technology, is also fundamental to operating as a going-concern.

"So, we run a process that tech, IT, digital, all of that, and we evaluate in that process, some things you've got no choice, though. There are other regulatory requirements, so that takes up so much capacity. Regulators come in and say change the way we interact with payments and that takes 30% capacity away." (Participant 07)

"Because of the cost associated with this, on the regulation particularly on the compliance side that was imposed on the financial services sector, because of lessons learned out of GFC [Global Financial Crisis], it meant that you had to increase costs and employ armies to manage that in terms of reporting to the regulator. So how do you get cost efficiency? The only way you can perhaps look at cost efficiency is to digitalise a lot of it."
(Participant 10)

"Similarly, it enables us to pre-empt when the regulator is able to come in how can we proactively give the information before it is being asked for. From a bank to a shareholder perspective, we make certain commitments, we raise liabilities, we create assets on the balance sheet and then we

manage that risk. So, technology as an enabler helps us to manage that risk in the best possible way.” (Participant 12)

4.4.2 People and culture

Under the broad category of people and culture, which is one of the four pillars of the conceptual framework used for the study, the data highlights collaboration, and experimentation and innovation as key themes. Findings related to these themes are presented below.

Collaboration

DT reveals the interdependencies between processes and between products and services, which exemplifies the need for collaboration between business units in CIB. DT of a process, product, or service undertaken in isolation will cause knock-on effects and possible friction. Whilst the issue of transforming workflows across functions in a comprehensive manner has been dealt with earlier in this chapter, this section focuses on collaboration amongst teams and human actors to ensure completeness is achieved with respect to DT. Participants were of the view that collaboration in aid of promoting DT is improving. The requirement to capitalise on data assets also prompts collaboration across teams in CIB and the greater banking group.

“I have seen collaboration between digitised and non-digitised business units of the bank, around customer data, around CRM around businesses wanting to understand their own clients more from a data perspective and wanting to understand the data which the broader group has access to in terms of saying these are clients I'm interested in getting to know or interacting with, is there anybody else in the group that's interacted with them?” (Participant 01)

“It took us a while to get there, for the last five or six years we've pretty much act as one. The problem is not, you do not go out there and specifically say you separate. But banking has always seen it as separate,

and you grow up with that. Tech sits there, ops sits there and frontline is more important and all that stuff. That feel flows down, we did a lot of work and not only in frontline and we could not have asked for better leaders in that space that adopted the slow change but [are] very much a part of the process.” (Participant 08)

“Inside CIB, I think it’s good. It’s getting better inside the group [banking group] as well. Where we’ve got different group entities doing similar things we’re trying to collaborate more, we’re trying to use the same systems, we’re not trying to create and build out new ones. I think it is getting better. You’ll always have struggles, we’re a bottom-up strategy and culture, which means you will ultimately have pieces of value that is in some competition.” (Participant 09)

Experimentation and innovation

When considering the culture of innovation within CIB, there was an emphasis on implementing business models successfully and not necessarily on producing new-to-market products and services. In the banking industry and the corporate banking sector, products and services are easily commoditised, which diminishes the value of first-mover advantage as may be observed in other industries. CIB does not see itself as being the most innovative in the market when it comes to digital forays. However, it does see itself as being able to sense and seize opportunities from digital innovation at the appropriate time and it relies on inimitable capabilities and people to launch new businesses successfully.

“OK so innovation for me, I’d like to define what innovation is. And we can debate what this is. But is innovation doing something for the first time ever in the market, or is it actually implementing successfully things that are newish in the market right now? I would say let’s talk about what’s more important, for me obviously the latter, it’s doing something successfully in the market.” (Participant 02)

“Almost every single idea in a banking fraternity has been thought of before, it’s been done before, and maybe not so well, and hasn’t succeeded, but it’s nothing like absolutely earth shattering, and even if it was, it doesn’t take long for another organization to replicate it.”
(Participant 02)

“It first depends how you define innovation. So, these days everybody thinks, if you slap an app on it, it’s innovation, which is not necessarily true. Innovation can happen anywhere. In a support function where someone finds a better way or a more efficient way of doing a certain process, whether it involves technology or not, or a new product, can be innovation. So, I grew up in CIB, in an area where innovation was a massive part of the culture.” (Participant 06)

“I do not think we can say that we want to be the most innovative digitally. I do not think we can say that. We want to have the ability to deliver products to our clients that are suited to them in an easy accessible way with high levels of service. Do we want to launch an app? And a new function every three weeks on the app? No ... We would like to be a market leader in our chosen franchises. Now what is market leader? Market leader means, you need to be bring the best products to your clients in the way they want it.” (Participant 07)

4.4.3 Process and governance

The following section presents the findings related to the key themes of change management and governance that emerged from the data as pertinent to the enablers of DT from the category of process and governance.

Change management

Change management has benefitted from the joint approach taken between business and IT to build solutions together from the outset with the purpose and end goal always at the forefront. This helps to eliminate situations where the

solution is not fit for purpose because of a misunderstanding between business units, which are closer to customer expectations, and IT, which is generally driven by technical knowledge. This approach assists with the acceptance and adoption of new technologies by business units because they are familiar with the development of new technologies from the beginning. In addition, an effort is made to capitalise on advantages from cross-skilling between business units and IT, with senior business leaders taking up digitally aligned roles as an example.

“The new model more is like we co-create, so you have a system or functionality, and you actually journey together. So, a business user doesn’t see the system for the first time. The model we’re trying to promote, so if you look at a project you want a core team that builds the project together which [includes] ops, finance and whoever you need to build that project.” (Participant 05)

“I think people have been moved into positions to bridge the gap between those two very different ways of thinking [between Business and IT] ... I think as you do that more and more and you have these bridge individuals that get to speak both languages, for lack of a better example, it also teaches both sides a little bit more about the other side and I have certainly found that the developers that are responsible for implementing the digitisation they have become more business focused and understand business more, and the business side of the world understands the challenges and limitations of the digital side more.” (Participant 01)

Governance

There is an awareness amongst leaders within CIB of the need to have an appropriate governance framework that ensures the correct level of accountability without creating a bureaucratic environment that operates from the centre and slows decision making. The governance processes referred to by the participants are primarily designed to curb unnecessary duplication and to prioritise requirements from the various business units effectively in an

environment characterised by general scarcity of resources. Governance frameworks also serve to minimise the risks from new technologies.

“From a more generic tech governance perspective, we plug into the TIF (Technology Initiatives Forum) process, where anything new from a tech perspective will go to TIF twice, initially to be initiated. Initiation is a useful process because you have tech leaders and architects from across the group, SA, and UK bank, hearing about this new thing CIB wants to do so if anyone has done something similar, they can say go speak to so-and-so.” (Participant 04)

“We’re not as formal as other banks in terms of saying this is what we’re going to do, this is not what we’re going to do. We’re very disciplined as a CIB Manco, there are several CIB Mancos, between all of them we’re quite aligned with what endeavours we take on and what we do not take on. The governance there is very good.” (Participant 05)

“So, we run a process that tech, IT, digital, all of that, and we evaluate in that process. Some things you’ve got no choice, though. There’s other regulatory requirements so that takes up so much capacity. Regulators come in and say how we interact with payments and that takes thirty percent capacity away. Then there are things that need to be replaced because they’re at the end of life, not fit for purpose so you got to replace them, systems, processes going to replace them. That takes another set of capacity. And then you end up with the last piece which is really where you can make some decisions.” (Participant 07)

4.4.4 Technology and capabilities

When identifying findings related to technology and capabilities, the main sub-theme of APIs surfaced when identifying themes related to digital service mastery, which refers to the adeptness of firms in responding to changing customer expectations situated around digital technologies (Evans, 2017). The

theme of platform architecture was also prevalent. The findings related to these themes are presented below.

Digital service mastery

In the corporate banking sector, it is a given that clients are multi-banked. Therefore, there is an emphasis in CIB on offering clients a level of customisation that uses their existing interfaces to access its online products and services via API. This improves the client experience by minimising the number of systems or websites on which they need to access their banking facilities.

“The teams within our CIB that offers the sort of technological stack, they’ve indicated that they can offer a level of customisation through API [Application Programming Interface] for our customers so that the banking systems integrate with the client’s accounting systems. They actually have now gone one step further and they [customers] want integration between our platform and their platform so that they only have to deal within their platform.” (Participant 01)

Platform architecture

CIB is deliberately adopting a platform architecture philosophy that is based on modularity and standardisation of applications that can be used across business units. These applications must be easy to update, maintain, and upgrade to ensure CIB always has access to best of breed in terms of technology. As much as possible, CIB relies on vendors to maintain and operate these applications. In taking this approach, CIB hopes to reduce costs, eliminate technology redundancy, and increase the speed of implementation.

“As part of legacy infrastructure, we need to de-customise legacy systems and keep it for the core or what’s it meant to be used for. In addition to that, you build your stuff modular, so you have a debit-credit system, you’ll have a pricing engine, you’ll have a FX capability, and API. Now you build all these things in modular form with multiuser authorisation, then what

happens, then it is really easy to upgrade each underlying system because you've kept it very simple ... For example that we have one module that is great in this aspect and we are starting a new platform business, it's like an app store I look at all the current modules we have in the bank and like an app store I pick the ones that I like and we have a new platform business but we are not set up for that currently and we are on the journey. We can't just stop everything and do a[n] overhaul, because that's just not possible. And the other thing is let everything run as normal and we can't do that.” (Participant 02)

“It's out of necessity because I do not think we would have been able to afford the team you need to maintain a bespoke host-to-host system to each client. Being a bit smaller and needing to be a bit more nimble has got us to quite a sexy place. We can have open banking through APIs, even our card product, we talk about programmable banking where in a card context we've exposed APIs through which a corporate can put rules on [its] cards.” (Participant 04)

“Simple things like an API, in the olden days, you would need the two teams to talk to each other before you can enable a project to happen. Whereas now if you want to connect to our system and you have the right to do it and we have an access control model, give you an API, it's got the structure, you connect into it, you enable the work, there's no reliance on the two project teams, you go live when you want to ... We do not even want to do upgrades. Moving forward, we do not want upgrades. Every person I talk to, every vendor, I tell all existing vendors that I do not want this big system anymore, what is your strategy?” (Participant 05)

“We work very closely with business on exactly how that phased approach looks, and I'm going to go back to Lego blocks. We are building those Lego blocks continuously as we add on to those capabilities in our arsenal. Today maybe we start with a foundation, it's hard, next time somebody wants a piece of the foundation you do not need to do it again ... For me, we took the decision about 4 or 5 years ago, first and foremost we will build

everything on tech on an internalised API structure. So, I do not build integration on a point-to-point basis anymore. You can go and say this service is got this API and if you want it, you just plug into that template and you utilise that API.” (Participant 08)

This concludes the key findings related to the enablers of DT within the South African corporate bank. Some of the key findings involved its approach to data analysts; the emphasis placed on bottom-up strategy and leadership; embracing platform architecture as a source of growth; and the role that cloud services play in levelling the competitor landscape in terms of technology. In the next section, the findings related to the hinderances of DT are discussed.

4.5 What are the hinderances of digital transformation in a South African corporate bank?

At this point, findings related to the nature of DT in CIB, its digital maturity, and the enablers of DT in the corporate bank have been presented. A recurring theme of complexity is evident in the findings about CIB and corporate banking in general. The findings in this section, related to the hinderances of DT, are no different. Themes and sub-themes that have enabling facets can also have negative facets and represent areas for improvement. An open mind is crucial for understanding complex environments and this applies to these findings.

4.5.1 Strategy and vision

In the following section, themes and sub-themes related to the category of strategy and vision and that pertain to the hinderances of DT are presented. Key themes and sub-themes relate to the absence of a common language around DT, the importance of strategy and vision for direction and coordination, and the importance of having an outward perspective.

Strategy

Whilst the bottom-up approach favoured by CIB in terms of business strategy and DT has yielded positive results from being able to operationalise these processes, there are instances where this approach has resulted in fragmentation. This fragmentation has occurred with the partial DT of products and services, and processes where manual intervention is still required, causing friction. This lends itself to inconsistencies, coordination issues, and a serendipitous approach that can be costly in terms of unrecognised value. It has resulted in various teams interpreting the strategic objectives differently and moving at different speeds that are not always caused by having different needs. This highlights the requirement to create a common language and strategy around DT to enable effective communication and to help with coordination. However, it must be mentioned that the various businesses that exist in CIB can be at different stages in their lifecycle, which requires a nuanced approach to DT.

“I do not think as an organisation we’ve spent a lot of time upskilling them in the digital universe. I think that’s why we still find there’s a lot of manual intervention in doing things ... Now without material manual intervention, just as a business everything we do on a day-to-day basis is driven around manual intervention to a large degree ... There’s still too much manual intervention. And there’s too many systems that we running to deliver a product to a customer.” (Participant 03)

“And I would say this is past, we have already reported on this, this is not my opening balance. And then it comes up that there were manual adjustments, and then it is so confusing. How can the source systems say one thing, and then we make manual adjustments, and we do not adjust things on some system, where does it live, where does my opening balance live, in an Excel spreadsheet, where?” (Participant 11)

“In a CIB context, it consists of twenty plus businesses at different stages of maturity – some are start-up, others are mature and looking to reinvent themselves, looking to be more defensive around the franchise they’ve

built up ... Certain areas are obviously more advanced than others.”
(Participant 04)

Creating a common language around DT will enhance the conversations around it and speed it up.

“And you know the problem is if you got someone who's relatively astute and experienced when it comes to tech and you've got someone that's not. It's like the one person speaking Portuguese and the other one speaking German like, you know, that's the problem. The difficulty is just trying to get the guys to understand each other. How can we make sure all of our leaders, how do we make sure all of our staff have got the same understanding of the basics so that the conversations can happen, the experts are still the experts, but it'll just make everybody's lives much easier if the experts and the non-experts are speaking the same language. So yeah, so that's, I mean I saw it again in that conversation about Cloud like some people's understanding of the cloud and what does it mean to say that we've got, you know, our processes or systems in the cloud like for some people, it's like they just do not understand what that means. And you know, it's hard to have then meaningful conversations around the strategy for a large business. You know, if you can't actually have those conversations without using the same language.” (Participant 06)

The bottom-up approach, although useful for transferring strategic objectives into actual results, can result in fragmentation without enough coordination from a proportionate strategy that is driven from the top down. Finding the correct levels of both approaches will be beneficial.

“You got to think about it, every little business unit must think about it. And then it becomes a bottom-up process. So, what does it mean? We say every business, every little unit must figure out what it means, come up with its own strategy and its own plan. And the combination of all these different things will then be what it is for business strategy ... We very much about decentralised, not big centralized. Because in my view, when

you make big, centralized decisions, that's typically where things fall over, because nobody owns it, nobody owns the strategy, the objectives, the deliverables, the budget, nobody owns it because there was a decision made in the centre.” (Participant 07)

The participants' views show that CIB can be conservative with respect to strategy in aspects such as investment and appetite for new initiatives. The approach taken by CIB in terms of new initiatives has been described as being more of a defence against competitor activity than taking novel steps. Some of the reasons given for the conservative approach suggested that banking is a highly regulated industry where it is difficult to launch new products and where there are natural capacity constraints. Only a finite number of new projects can be committed to each year. The lack of direction from leadership in terms of DT can be interpreted by some as a lack of support.

“Unfortunately, there's a very low level of acceptance of failure, you can't make mistakes, there's unfortunately a lot of harsh consequences and that will naturally stifle people's want and need to experiment, so I think there's those two things from me the most important, is there an appetite from the leader to do it?” (Participant 01)

“We are not keen on bold steps. With transactional banking, we started with very little investment into it and then you do not get the scale quickly enough, so we are not big on bold steps.” (Participant 05)

“It's a difficult one, I do not think there's ever any budget to try new things out. We always talk about it, and we dream about it. And we say we going to put like a One Hundred Million Rand aside for experimentation but that never really happens because every time we run into something we release those provisions and then that's gone. So, I do not think we ever have a provision budget. And an experimentation budget. And if we do experiment, we try do it on the side.” (Participant 05)

“[Describing competitive landscape] I think it is something that needs to be thought about and we might have to widen our offering to play offence more than defence which is very interesting to me because it’s not the way the group [banking group] has positioned itself and thought in the past.” (Participant 01)

“[Describing digital strategy] So, in your business review you have to say what you are automating and digitising in your business, that’s where it ends. They say, this objective here, leader, this is your objective. You must come up [with it]. Which in some ways I think is very unfair because we are not trained in IT. I can’t articulate what that strategy is.” (Participant 11)

A senior leader questioned whether launching businesses successfully that are not necessarily new to the market could be described as innovation, as quoted below.

“There’s a big difference between innovating and building businesses, that’s the easy thing to do. To identify businesses, find the right people, they go execute on it. We as a group we have this idea that as part of culture we are innovative.” (Participant 08)

CIB runs several projects every year and makes significant investments in those projects in terms of finances and other resources.

“Experimentation and innovation are maybe linked. We do want to be innovative, we want to be creative, but it is becoming more and more difficult to experiment. Much more difficult. You’re in a regulatory environment. You have all kinds of regulatory bodies looking at everything you do, so to trial that product with a client to trial a product with the customer base you need significant signoffs before we can do that. To try something means you need tech priority. That means you’ve kicked somebody else out the out the priority. That means you’ve kicked somebody else out the out the priority. If the experiment is not worthwhile

or, I'll go back to this point, we have too many things we want to do. We have 20-30 things that we can't do, so we put them on the back burner. Next year they want to be priority and then next year's already full. And then we say okay, but let's just try this. There are already 30-40 other things waiting, so it's difficult. It's very difficult. So, you can do little things. But to have big experiments, I think it's really tough, very tough." (Participant 07)

"I think we will always run One Hundred Million Rand worth of projects from one year to the next. The exact project might differ, the area may differ but thinking we'll stop investing in tech is short-sighted." (Participant 04)

Digital vision

When participants were asked to describe the digital vision for CIB, there was no clear response. A participant highlighted the importance of having a digital vision to be able to communicate it to clients. Not having a formal digital vision has not resulted in no or little action being taken around DT. However, it does raise the question of unrecognised value by not having a unified vision that would inspire and motivate the various business units around a similar future. One participant suggested that CIB is very much inward looking, without sufficient focus on what competitors, adjacent industries, and technology are achieving in the broader context.

"So, I have no idea." (Participant 06)

"We are not very good at the outward looking enablers ... Most people are very insular and do not understand what the world looks like, what other competitors look like, what else is out there and what they are doing ... not enough people go out and understand what else is out there, what other banks are doing, non-banks doing, what is Amazon doing, what is everybody else doing which gives us a competitive edge. I really think we need to do a lot more of." (Participant 05)

“We never really sat down and decided as CIB this is where we want to go with digital.” (Participant 08)

“Not that I’m aware of. I think in terms of a strategy document, there is a lot of talk around but not defined across the board. It is more specific to certain projects or opportunities.” (Participant 03)

“It’s about can we show the value. So, we never had a clear strategy, to say that’s where we want to be in five years. But have been clear, that this is where we want to add value to clients’ lives as we go along.” (Participant 08)

“I do not think there is a clear-cut strategy as to what that envisioned state is. If we had a roadmap around what is our digital strategy and how we get there and what the envisioned state is that we could take to our customers, I think that would be a different story. There are some products that are being developed at the moment and do exist but it’s not all encompassing. I do not think I understand it. It is not common language, it is not well known, it is very bespoke in nature. Is it happening quick enough, could it happen quicker?” (Participant 03)

4.5.2 People and culture

The key themes that emerged under the category of people and culture related to experimentation and innovation, collaboration, digital skills, leadership, and KPIs. These findings are presented below.

Culture

There were instances where participants described the culture within CIB, and the wider banking group, as being conservative. The culture is very much inclined towards adopting tried-and-tested methods and following competitors; however, it must be noted that CIB has developed novel solutions in the past as evidenced.

The “follow and do it better” approach may be the intended strategy and it will be for CIB to review it and decide if it can be more proactive in terms of experimentation and innovation.

“I think more so as an organisation, not just CIB, we’ve always had a wait and watch type culture. We’ve never been first to market. We’d always watch to see what other organisations have done and see what’s successful and what’s not. We never have been the first mover in terms of digitisation and you know are we improved in that space, we have.”
(Participant 03)

“I think it is something that needs to be thought about and we might have to widen our offering to play offence more than defence which is very interesting to me because it’s not the way the group has positioned itself and thought in the past.” (Participant 01)

Experimentation and innovation

Whilst there are examples of experimentation, some participants’ views suggested that resistance to change appears in pockets and appetite for experimentation is mainly in response to competitor activity. Leaders have a significant bearing on which new initiatives are pursued, which relies on their knowledge and intuition. An underlying issue is the lack of resources and time outside of normal demands for employees to engage in experimentation. The discipline to stick to budgets earmarked for experimentation and innovation can wane at times. The need for a proven and thorough business model at the outset can also be an impediment to experimentation and may lead to missed opportunities. Participants also questioned the tolerance for reasonable failure.

“... experimentation really just comes from your appetite to change and some people would very much like to stick to their knitting, stick to their process, and especially when there are budgetary pressures. So, I think again culture does play into it, the leader does play into what that person’s perception and appetite for change is and then it’s just the performance

thing as well if you not performing well, the human nature is to self-protect and go back to what you know gives you that sort of feeling.” (Participant 01)

“I think appetite is there, I think the problem is capacity, it’s not there [for experimentation]. People are just too busy. And we are always short staffed, and we always have too many things to do. So, if you look at us as an example when we went into [propriety example of experiment] it’s something we had to do on the side ... It’s a difficult one, I do not think there’s any budget to try new things out. We always talk about it, and we dream about it. And we say we going to put like a hundred million [One Hundred Million Rand] aside for experimentation but that never really happens because every time we run into something we release those provisions and then that’s gone. So, I do not think we ever have a provision budget. And an experimentation budget.” (Participant 05)

“And I think that’s where we get stuck, not just in CIB, but big organisations in general. We want to build the end instead of knowing that building businesses are incremental processes, start small and then you effectively refine as you go along. So, we think experimenting is, I launch a new business and I’ve been involved in this. I’ve done this exact same thing. You go and you ask for R100,000,000 to build this business. You know this is massive when in actual fact all you need is R2,000,000 to just see if I can get five clients. I do not think we do as good a job or we fall into this trap like any other big organization does where we set the parameters of the experiment just too wide. We want to prove too many things on day number one.” (Participant 06)

“In an extremely high-performance culture that CIB has, a culture where sometimes it is hard to fail, you cannot fail, I think those two cultural elements sometimes inhibits or cautions people’s willingness to accept new things if they are not naturally someone drawn to new things. If you are someone naturally drawn to technology, it’s a bit easier for you

because you have less fear within the context of high performance.”
(Participant 01)

A need was expressed by participants for improvement in the speed of execution when implementing DT. At times, there can be a lack of urgency, responsibility, and accountability related to deliverables for DT. This has the effect of slowing the time to market when launching new products and services and in responding to changing customer expectations.

“I would say in CIB, our mindset on execution has room to be improved. We are getting better, but we need to become more ruthlessly focused on deliverables and delivering on time. Both rewards and consequences to meeting those times or not meeting it needs to be something material as well, so for me it's more the culture of that and culture of implementation.”
(Participant 02)

“I think where it's really hard is where the rubber hits the road it's, it's actually the execution piece [that's the issue].” (Participant 06)

Agility depends in part on spare capacity, and that comes at a cost.

“Are we able to quickly shift and add something new? No, because our resourcing is limited. So, we can't just at a whim decide to do something for three months. You can't. But to quickly do something opportunistic, I also do not think it's the right thing: the competitors have done it, let's do that. It's not that we aren't able to do it. We do not have excess resources we can just allocate. All the current resources are busy and occupied. Is it agile enough? Maybe not, but I think full agility comes with a significant cost. But if you have people just waiting to be agile, that's going to cost you a lot.” (Participant 07)

Collaboration

Whilst certain participants felt that collaboration to promote DT was gaining momentum, others felt that more could be achieved. In addition, a lack of

coordination between the greater banking group and CIB in terms of systems, processes, and personnel was seen as an impediment to DT owing to natural dependencies on host systems and databases. This has the potential to slow progress with respect to DT and to create unnecessary friction, which can lead to losses from inefficiencies.

“I do not think I’ve seen any collaboration from an IT perspective or limited collaboration from an IT perspective. I think interdivisionally, the organisation has always left divisions to go in and implement systems based on their needs and requirements. The first time I’m probably seeing that [collaboration] is around CRM.. Very slow to making any head way, it’s still being rolled out in the other businesses and departments.”
(Participant 03)

“It’s still very difficult, it’s still very divisional, It’s a lot better than before but it’s still very divisional. And even if you’ve got the will to do it, the technologies are so different, and the maturity of the teams are so different.” (Participant 05)

“I think where there is some friction but that its almost between CIB and the centre [banking group], where the CIB IT guys get frustrated by the central IT guys not delivering. But in my mind that means at least the IT guys in CIB feel that they are part of our businesses. They are fighting the same fight.” (Participant 09)

Digital skills

Given the bottom-up culture, the environment will thrive if each employee and leader has a good enough understanding of the possibilities to be gained from DT and is able to develop them. Business units are mainly led by individuals who are experts in financial products and services, and if the expectation is for them to lead DT in their area, an assumption is made that they are knowledgeable about the methods they should use to do this. Participants expressed a need to develop a common level of digital literacy, and for additional support for

management with respect to DT, whilst submitting that business unit leaders need not become digital or technology experts. Similarly, there is a requirement for IT personnel to become familiar with business models.

“Businesspeople do not necessarily understand the IT part well and what you can do. Some people do not understand the possibility of what you can do. You’ve got tech people who do not understand what you can do with the tech in a business context. What we’re desperately trying to do is bridge the gap.” (Participant 05)

“Many of the leaders in certain [parts] of CIB are specialists in the particular offering to their clients. They run the nuts and bolts of the banking offering, so they are not tech individuals, it’s not their background. As a leader, the question to ask is how impactful are you? Are you creating the greatest impact?” (Participant 02)

“I mean, it’s really hard as a as a 40-year-old leader who has a full-time job running a big business, like you know there’s so many things you want to upskill yourself on, like it’s really hard to do that where it’s not within a formal process like so, you know, some of the guys have tried to specifically go upskill themselves on their own initiative. But I think something like that [digital learning programme], well put together, curated. And you know really, from first principles, I think also the problem is like we’ve had some of these things where guys have come and sat with us, and you know like it just becomes like a marketing exercise ...

“... So that’s why even if you know something like this [digital learning programme], I think it would be a really great initiative, but it really has to focus on literacy. It’s not about creating experts; it’s about creating literacy. How can we make sure all of our leaders, how do we make sure all of our staff have got the same understanding of the basics so that the conversations can happen, the experts are still the experts, but it’ll just make everybody’s lives much easier if the experts and the non-experts are speaking the same language.” (Participant 06)

“If I think about technology, my focus is not that every day, my focus is to get money out the door and to solve financial problems for our clients. But I do not think we have enough people in the digital areas who understand what we do and can come up with creative and innovative solutions. They almost ask us, and we tell them. But we are not creative in that sense, we are focused on something else ... I almost think that we need people to tell us what we need, wouldn't you like to see this and this and this. Someone who understands our business and then goes wouldn't it be great if you could see this, wouldn't it be helpful if you could see this, as opposed to waiting for us.” (Participant 11)

Leadership bottom-up approach

Again, the bottom-up culture has the effect that many of the decisions about progress from DT rest on the shoulders of the leaders of the various business units. There are product areas that have an immediate need for DT and others where it is less urgent. This is reflected in the level of technology aspiration and competence across business unit leaders. For leaders to influence employees positively around DT and change mindsets to embrace it, they first need to undergo these changes themselves. This raises the question of CIB doing more to support DT and creating common infrastructure to level the playing field internally.

“You will get leaders who are skilled and comfortable with using technology and digitisation as part of the workflow and what they are responsible for. They will use it, they will gravitate towards it, they will understand how those product sets make their lives easier, and then almost in contrast to that you get leaders who say this is the workflow, this is the way we've done it always, I do not want it to change.” (Participant 01)

“It's in pockets, there are some leaders that I've met, and they think can technology really impact this particular business? So sometimes I think that there are varying degrees in which technology can affect certain businesses ... In order for leaders to change the employees [mindsets], they first need to change their own mindsets. You can't change the

mindset of individuals, without conviction and authenticity yourself. As a leader and this is a general statement that applies to more than technology here, we need to learn to speak to others with different opinions than you, to put yourself out there and to be open to change your mind, try new things, copy things even from other places that have worked.” (Participant 02)

“I was part of a conversation recently around, you know, effectively the strategy for CIB and the broader group, around the cloud like what goes into the cloud, what should go and what shouldn’t go in, how does it work, all that kind of stuff. And like, clearly in that conversation, you know, the one negative is that because you’re dealing with a lot of people that aren’t necessarily digital natives or experts on IT systems and architecture. Some of the conversations, people were talking across each other. And some of the guys were like battling to understand what maybe the tech experts were trying to say. But on the other hand, there was a massive amount of enthusiasm and passion to understand to make the right decisions.” (Participant 06)

“If I think about technology, my focus is not that every day, my focus is to get money out the door and to solve financial problems for our clients. But I do not think we have enough people in the digital areas who understand what we do and can come up with creative and innovative solutions. They almost ask us, and we tell them. But we are not creative in that sense, we are focused on something else... I almost think that we need people to tell us what we need, wouldn’t you like to see this and this and this. Someone who understands our business and then goes wouldn’t it be great if you could see this, wouldn’t it be helpful if you could see this, as opposed to waiting for us ... They say [CIB Manco business review process], this objective here, leader, this is your objective. You must come up [with it]. Which in some ways I think is very unfair because we are not trained in IT. I’m focused on providing financial solutions. I’m focused on my team and helping them structure deals. To now try upskilling myself. That’s why I say

I wish we had guys who had the ability to understand business and loans and IT and bring it together for me.” (Participant 11)

Key Performance Indicators (KPIs)

CIB has a high-performance culture as described by participants and many of the performance indicators are linked to financial targets. These financial targets are seen as a catch-all for the underlying behaviour required. However, many participants felt that there was a need to introduce specific KPIs linked to DT.

“[In response to being asked if there are any KPIs linked to DT] Not that I know of. As I said, digital transformation is driven by bottom line in my mind and that’s my reality. KPIs make money and that’s how it ends up ... you sort of driven by trying to look after the business and make it as profitable as possible [and] will have to go down this digital transformation route to make sure your operating process is efficient as possible” (Participant 09)

“Let’s think about what our KPI targets are, there is a stretch in terms of our revenue, acquisition, market share all of that must be strong enough., Are there specific KPIs in terms of how you need to achieve that, maybe there should be, linked to how did you do in terms of tech, you know you spoke about the cultural piece, should your KPI be scored in terms of how you used technology to reach your first tier KPIs. I would say your tech KPIs are your enablers and support your first tier KPIs.” (Participant 02)

“We’re in the process now [of formulating KPIs for digital transformation]. So, we set as a group, strategic objectives that we want to drive digitization. So, the group would set the strategy in question. We are unpacking what that means for each division and each business unit. We haven’t to date but we’re now in that process where we want to do that. Work out what that means for the division. What does it mean for individual business units? And then that will then trickle up to the group.” (Participant 07)

4.5.3 Process and governance

Key themes that emerged under this category related to change management and decision-making structures. The findings are presented below.

Change management

Participants suggested that the acceptance and adoption of newly introduced digital technologies could be improved through better alignment. At least one senior leader expressed the view that, in some cases, IT appears to have much more power than business, which is symptomatic of misalignment. Resistance to new systems and to DT were also observed. Many participants cited the implementation of the CRM system as an example of poor acceptance and adoption. This represents possible deficiencies with respect to change-management procedures. Another concern expressed by a participant was that certain employees might fear the threat of technology replacing them in their jobs.

“We are still struggling with that dichotomy, we are still struggling and I think it might be sometimes that the leader doesn't understand that what this manual process is giving me is possible through a digitised route but I'm used to this and I want it in the way I'm used to and again it's that fear of change.” (Participant 01)

“I think it's been very limited to date. Just look at the role out of CRM, it's taken a very long time and just look at the archaic systems, paying dual licences things like that. And is it still running and is it enforced, any new systems? No it's not. It's a wish list.” (Participant 03)

“It's like CRM is only as good as its usage.” (Participant 05)

“Change management is a continuously iterative process. It requires to be driven with a lot of discipline ... so, I think it can be a lot better, I think some of the communication between business and technology could be better. I think sometimes the tail wags the dog. I think there can be, talking to your

point around collaboration, a lot more intentional collaboration.”
(Participant 12)

“They [employee] shouldn’t see it [DT] first of all as a threat because I think that’s where the misnomer comes in, when you start saying technology, introducing it at work to enhance, then some people will embrace, others will push back because they see it as a threat [to their jobs] ... So, as a leader I think it’s about walking the journey with your colleagues, making sure that everybody understands the seat they occupy in the bus, how does that contribute to the main objective so that they can be the best occupant for that seat in the bus because they understand what their contribution is. And the question they should also be asking themselves is how can I better in being the occupant of the seat in this bus by embracing technology?” (Participant 12)

Decision making structures

Project planning and resource allocation generally receive attention because there is often a degree of scarcity. As each business unit operates with a fair amount of autonomy, it can be expected that each unit will consider its projects to be a priority. Having governance protocols to manage this becomes necessary. In addition, in an organisation where each business unit operates as a commercial interest, units may be tempted to restrict access to certain resources instead of sharing them internally. To help with alignment, senior leaders from business areas are crossing over into digitally inclined roles. A top-down approach was mentioned as a solution for dealing with misalignment and for providing guidelines for collaboration.

“The second thing, when you’re solving across business units and you’ve got shared technology systems, that you all need to plug into, it becomes like spaghetti. So, you can do all the work in your business unit, and when you want to plug into a host system, it’s about who comes first, how do you get priority. That can be an issue. Host systems that support multiple business units should be set up appropriately such that they have dedicated resources for each business unit ... And that’s where I think a

bottom up is important in an organisation but also a top down to say, we are one organisation, you will share this. And now go out and do that. And I do not think we can hide behind governance and compliance and certain aspects with regards to holding back information from units you have the right [duty] to share it with. And this is more on the data piece.” (Participant 02)

“There are a lot of priorities [tech]. There’s a lot of business as usual to solve. There’s a lot of new initiatives and tech resources are scarce. They’re expensive. I mean, that’s just the nature of the environment that we operate in at the moment. So, this is a real problem for everybody.” (Participant 06)

“... ultimately if you’ve got businesses creating value for the different clients, there’s going to be overlap. There’s going to be products that compete [internally].” (Participant 09)

“But we also have somebody in [senior business leader], who heads up or plays a leading role [in a digitally linked role], and he’s pulling it all together. That is a brilliant move. Should we have done that long time ago? Probably, but anyway, we must focus quickly.” (Participant 11)

“The problem is the scarcity becomes exponential when resources cross into each other. Now the business unit has to decide [if] this is a priority. Now you have to prioritise across. But it is an inclusive process, first your business ops, and IT will sit and decide, this is what we are going to. Then there’s governance within the group, there’s forums you have to go through, and also those forums help with duplication.” (Participant 08)

4.5.4 Technology and capabilities

The dominant sub-theme when looking at technology and capabilities and digital service mastery was data. The findings related to the hinderances around data capabilities from a DT perspective are presented below.

Data

CIB has prioritised the strategic use of data following the strategy of the greater banking group. Considering responses from participants, there is a sense that data dominates most conversations about DT. CIB has made much progress in relation to data; however, by its own admission there are still improvements to be made with regard to creating central repositories that are accessible on a wider scale, harvesting the data in a meaning way, and adding external data sources. Overall, participants' views suggested that a large degree of manual manipulation of data is still practised to generate meaningful insights.

"Out of ten, four or five years ago we would've been a two [evaluating data capability]. We are currently a four and a half or five. Significant improvement over a short period of time. What will make this a success is having data in a uniform way all housed in one place like a data lake or something." (Participant 02)

"Data still tends to live isolated, there is a lot of work being done at the moment to bring data to a centralised point which would make the usage thereof better. Quality of data also better than what it was in the past. Generally, a better appreciation for the fact that data needs to be put into a system accurately and timeously, not there yet." (Participant 01)

"I think it's an issue because a lot of data pockets require intensive manual intervention and with that you know you not going to get a nice digitised solution or offering around that. I do not think we well positioned around that and are not positioned to provide accurate and speedy data." (Participant 03)

"I wish that consultants could just log into the system, then we can all look at a spreadsheet without having to go and download into Excel and manipulate it. It should just all be on there; I think everybody would like to get there." (Participant 11)

Participants suggested that the focus on data needs to grow from being internally oriented to incorporating external insights to aid in decision making.

"External data is the challenge. It's not always easy to get your hands on relevant external data in a usable form." (Participant 04)

"Our data strategy is very internal focused now so what we're very good at saying what does the CIB transactional and client data look like. Barring the desks that have an economist, we're not very good at saying what the outside world looks like." (Participant 05)

"I think we've got a lot of data and no one's using it. I want somebody to look and say did you know you've got all this data, what I can see from the data is this, and I can extrapolate it and now I can see this." (Participant 11)

"So, we're getting to a point now where we have single repositories of data and having assigned custodians to manage and retain, maintain the integrity of the data, and making sure that we use that information, and you take out any form of contamination from the data. So, we've aggregated, we've cleaned, we've taken out duplications, and we've assigned responsibility at a group digital level for those to become custodians and to allow business units to access what in these data repositories and use it to enable their strategies at a desk level." (Participant 12)

This concludes the key findings related to the hinderances of DT in CIB.

4.6 Conclusion

The DT of the banking industry has been an ongoing process for a few decades. However, banks, including CIB, are having to shift up a gear to keep up with the faster pace of change spurred by new technologies such as AI and big data analytics, to name but two. The competitive landscape is changing because new businesses and traditional businesses conducted in new ways are possible with these technologies.

CIB has a mixture of high-volume and low-volume businesses and high-value and low-value businesses. This represents a unique challenge to DT when compared to industries such as manufacturing, for example. In certain instances, customers expect personal engagement and in others they prefer the independence and control that comes with digital channels. CIB must deliver both excellent personal engagement and digital experiences for customers across a large range of products and services. Digital channels can also differ in their composition across corporate, institutional, intermediary, and retail clients.

Data is invaluable for a corporate bank that operates in the knowledge economy. Data is inextricably linked to digital products that are redefining the competitive environment. The corporate bank that has a greater share of digital products and services with a customer has access to more data, enabling it to deliver superior products and services to that customer through heightened levels of customisation. This is noteworthy in a sector where it is common for customers to be serviced by multiple corporate banks. CIB has made it a prerogative of each business unit to employ the services of a data analyst, which affords analysts the opportunity to gain an in-depth understanding of business units and helps uncover unique opportunities from data.

CIB, although not small by any measure, is smaller than its nearest competitors when evaluating the number of clients and revenue. In the past, this has meant that it could not compete regarding IT with larger competitors as they would have better economies of scale. However, with the introduction of cloud services, which have democratised access to IT applications, CIB is able to compete in terms of

technology on a closer basis. Other advantages of being smaller include fewer legacy issues, quicker decision making, and faster upgrades to its IT architecture.

IT architecture is based on a philosophy of creating non-discriminant applications and capabilities that can be shared quickly across business units and even commercialised to be sold to third parties as a service in the future. This would establish CIB as an enabler of financial services in addition to being a provider.

Access to IT and digital skills is topical in an age defined by both technology and the scarcity of these skills. CIB has developed third-party relationships that allow it to crowdsource both digital skills and digital solutions.

The digital strategy and vision for CIB as a whole can be described as minimalistic. It has a bottom-up approach for its 20 plus business units that charges each one to formulate and develop a business strategy that will include DT.

Whilst CIB has made much progress with DT and many of the new businesses it has launched over recent years are reliant fundamentally on digital technologies to exist and function, there are definite areas for improvement as expressed by the interview participants. The absence of a compelling and unifying strategy and vision has led, in some cases, to inconsistencies, poor coordination, and unrecognised value by relying serendipitously on a bottom-up strategy only.

In addition to being able to respond to DT on the fly, participants expressed a need to affirm its first principles by creating a common language around it and a basic level of technology competence across CIB that will ensure that opportunities are not overlooked and coordination is improved.

Most participants described the approach to experimentation and innovation taken by CIB as conservative. Carving out a little capacity from a financial and human resource perspective to focus on this might enable CIB to generate new growth opportunities and improve employee engagement.

CHAPTER 5. DISCUSSION

5.1 Introduction

The objectives of this research are to assess DT in CIB, assess its digital maturity, and investigate the enablers and hinderances of DT within its bounds.

A thorough examination of academic literature was undertaken (as reported in Chapter 2) to produce a comprehensive body of knowledge regarding the key aspects of DT and digital maturity.

The research study followed the qualitative approach and used the case study design as a strategy of enquiry. Research interviews were conducted with 12 participants, who were purposively selected by the researcher, to generate the data for this study.

In this chapter, the findings from the research interviews, as set out in Chapter 4, are discussed in relation to the body of knowledge obtained from the literature review and analysed for meaning to assist in answering the research questions. As with Chapter 4, this chapter is structured into sections that relate to the research questions, with the findings and discussions grouped under the research question that they relate to.

5.2 What is the nature of digital transformation in a South African corporate bank?

The South African banking industry has a history of embracing technology that originated with automating processes to extract cost savings and efficiencies (Coetzee, 2018). A study conducted by PWC Strategy& (2017) showed that South African banks are leveraging DT to reduce cost-to-income ratios that are normally high. South African banks are making significant investments within front-office, middle-office, and back-office operations (Ernst & Young, 2022). However, Chanas et al. (2019) warn that firms that consistently deployed technology in the past may not be able to sense the faster pace and greater scope of change required with respect to modern technologies synonymous with the

4IR. In addition, Bharadwaj et al. (2013) and Matt et al. (2015) caution against viewing digital strategy as merely a function of business strategy and suggest that it is business strategy itself. It is not uncommon for firms that embark on DT to overemphasise the conversion of analogue processes to digital processes and limit its focus to extracting cost savings and efficiencies (Krasnikolakis et al., 2020). By doing this, firms run the risk of missing opportunities related to transforming their business models and customer-engagement channels, in addition to business processes, which is the essence of DT (Matt et al., 2015).

Participants mentioned that the journey that CIB has been on with respect to DT was something that began many years ago, mainly to automate operational areas, and they likened it to an evolution. Many descriptions of DT provided by participants referred to automating manual processes.

Participants provided examples in CIB of using digital technologies to generate market share and competitive advantages in the business transactional banking, retail stock-broking, and retail insurance sectors. Many participants went to great lengths to explain that the decisions to launch these products were not based on digital technologies themselves but rather on the soundness of their business models that were enabled by digital technologies. They acknowledged that these businesses would not have been launched if it were not for modern digital technologies making them feasible. These new businesses or products that have come to the fore for CIB are not necessarily novel within the industry, with some having existed in the market for decades. The timing of the entry by CIB into these products was determined mainly by the advent of new digital technologies that lent themselves to lower costs and scalability. The data shows that CIB has capabilities to disrupt traditional models by offering them in a digital format. Lately, most new businesses or products launched by CIB are digitally led and there are examples of historical products such as foreign exchange and institutional trading products that would have died a slow death had they not been transformed digitally.

There are three important observations to make when comparing the data and the literature on this theme. The history of DT within the banking industry and within CIB has largely been focused on cost savings and efficiencies. The

emphasis by a few participants on DT being a tool to automate manual processes resonates with the literature. Equally, a few of the participants were clear that business strategy and digital strategy are not separate, which agrees with the literature and is representative of a progressive mindset required for DT.

Participant views showed a clear propensity by CIB to embrace DT and the bank has achieved success in many new digital ventures, as mentioned by the participants. However, the mindset about the importance of DT as a catalyst for expansive economic growth and as an active element of business strategy was inconsistent across participants, which could affect harnessing the full potential of DT.

DT by nature involves a comprehensive relook at all aspects of a firm. This is pertinent because DT of a single process out of many interconnected processes, for example, can have negative consequences and affect the stability of operations (Matt et al., 2015; Souza-Zomer et al., 2020). Improving and creating new customer relationships, business processes, business models, new products and services, and customer-engagement channels are critical aspects of the holistic process of DT (Chanas et al., 2019; Morton & Palfreyman, 2022; Setia et al., 2013). Data is a product of the overall effects of DT and can be a source of competitive advantage, particularly for firms that operate in the knowledge economy. The appropriate use of digital technologies to transform business activities produces data, and the ways of curating and harvesting it (Bharadwaj et al., 2013).

Many participants echoed the view of taking an end-to-end approach to DT and stated that piece-meal initiatives can negatively affect the overall customer experience. Participants expressed that all business units had a shared responsibility for DT. One of the challenges articulated by participants around this theme was that the greater banking group can represent a bottleneck for DT within CIB. They explained that this misalignment was a result of incongruent IT structures and different priorities between the two. When participants considered the all-encompassing approach to DT, their thoughts were dominated by the importance of data, creating centralised data repositories, and internal collaboration around data. Most general comments about DT made data the locus

of attention. Participants mentioned that the strategic use of data was named as a strategic objective for the entire banking group by the CEO.

In some respects, participants described DT through the single aspect of data. Data is a product of DT and focusing on data with much more rigour than DT could be premature for this reason. This approach of thinking data first with respect to DT warrants further debate. CIB and the greater banking group operate in the knowledge economy and the focus on data and viewing it as a source of competitive advantage is validated by the literature.

Many of the antecedents for developing effective data capabilities come from the holistic, ongoing process of DT. By focusing on data more than DT, this could lead to sporadic and disjointed outcomes. Conversely, the dominant conversation in CIB around data could induce the correct attitude towards DT and pull it upwards in its DT journey.

In discussing the findings related to the nature of DT within CIB up to this point, similarities with and differences from the literature have surfaced. The long history of technology adoption in CIB is in line with the literature. The aspects of cost savings and efficiencies as the original motivators for technology adoption also correspond with the literature. Participants' views were indicative of a shift in mindset from considering DT primarily for cost savings and efficiency to seeing it as an important proponent of business strategy that is reflected in the literature. Approaching DT with a data-first mindset was different from the literature, which describes data as a product of DT.

There was a clear theme related to the complexity of CIB's business units, products, services and customers that alluded to the high variation that each of these can exhibit. The next section is dedicated to discussing these complexities.

Ambidexterity

“Ambidexterity” refers to a firm’s ability to find the medium between personal engagement and digital engagement within each segment of customer service. It also involves having adaptive resources that prove to be timeless against a constantly changing technology backdrop (Vial, 2019). Firms such as corporate banks can exhibit a higher degree of complexity and variation in their products and services and can experience varied transaction volumes amongst their different products and services. This contrasts with firms such as retail banks that generally aim for standardisation as much as possible to cater to large customer and transaction volumes (Matt et al., 2015). Converting traditional methods of delivery into digital channels can be challenging, especially when traditional offline channels are rigid and are considered efficient ignorantly (Vial, 2019). Digital channels will challenge processes and turnaround times, and often require entire workflows to be sped up through faster decision making, as an example (Evans, 2017; Westerman et al., 2014).

Participants’ views showed that CIB will remain a face-to-face outlet for products and services where this is preferred by its customers. This is especially valid for large and complex transactions that cannot be concluded digitally, such as advisory services and other investment banking activities. This agrees with literature that refers to finding a medium between digital and personal engagement for customers. Many participants stated that digital channels are necessary for products and services that are classified as high volume or low value, or both. In these instances, the customer generally prefers more control and freedom that are attainable through digital channels. For CIB, digital channels used for high-volume products ensure that costs are proportionate and that scale can be achieved. This introduced additional thinking beyond the literature related to this theme.

The data showed that digital channels can have different characteristics for different client segments, which adds to their complexity. Retail products typically require an end-to-end approach, with CIB having to put up a front-end and back-end in terms of technology. Corporate and institutional clients may only require a back-end system, whilst preferring to use their own unique front-end. It is not

uncommon in these segments for customers to be multi-banked and for products and services to be commoditised. Customer loyalty is hard-won, and the corporate bank relies heavily on the strength of customer relationships, innovation, and superior service levels. The topics related to variation of digital channels, multi-banked customers, and commoditised products in the corporate banking sector present new information that is not considered in the literature reviewed.

CIB is intently committed to personal engagement for certain customer segments, products, and services, which has been justified through customer expectations. In these instances, it considers personal engagement a competitive advantage. It has the complex task of delivering both premium offline and online customer-engagement channels and dealing with products and services that can differ greatly in volume and variation. Further to this, digital channels for different businesses, products, and services operate differently. This multiplicity may pose a managerial challenge in having to hold more than one focus at a time for various parts of its businesses. Sensing how and when to trigger DT may be made complex because of it. The question that is raised concerns whether the legitimate requirement for personal or high-touch engagement for customers in one area can leak into other areas as inertia that impedes the DT that is warranted in those areas. This is a potential blind spot that CIB and other businesses that face similar complexities should be aware of.

In addition to the complexities within CIB that affect the nature of DT, the competitor landscape also affects its approach to and the nature of DT.

Competitor landscape

DT produces new opportunities for revenue by creating data assets that can transform existing business models and can lead to creating new ventures (Matt et al., 2015; Westerman et al., 2014). When embarking on DT, a firm will consider its current state of technology; the industry requirements and competitor activity; the relevance of products, services, and business models; its effectiveness to continue to compete and grow; and its organisational readiness (Ko et al., 2021; Pramanik et al., 2019; Vial, 2019). Mature firms must be able to anticipate subtle

changes in customer behaviour and the competitor landscape to reduce the gap between its capabilities and customer expectations (Ellstrom et al., 2022; Pramanik et al., 2019). Access to data, and the capabilities to harvest it and produce meaningful insights from it have the potential to change the competitor landscape (Jenkin & Naude, 2018). Data assets can represent exclusive value for firms, which can lead to competitive advantages (Bharadwaj et al., 2013).

Participants expressed concerns that being slow to transform certain products and services digitally would open the door to competitors in the data domain. An example was given where an online banking type of product was offered to customers with a view to presenting a novel product, only to discover that this product was the norm from competitors.

The data shows that share of wallet is linked not only to revenue optimisation but also to access to data, which is a topic that did not appear in the literature. The more online products and services a corporate bank has with a customer, the more data the bank can access to differentiate its products and services and precisely target customer expectations. Data also assists the bank to manage risk more effectively, where applicable. Service is one of the main differentiators for CIB, which makes DT and data capabilities essential.

Legacy IT architecture can be a hurdle for incumbent firms, as it often consumes disproportionate amounts of IT resources, which takes capacity away from DT. Poor interoperability is synonymous with legacy IT architecture, making it redundant in an IT age that is defined by modularity and flexible access to applications via cloud services (Ellstrom et al., 2022). As part of a firm's digital strategies, it will make long-term investment decisions regarding IT architecture that will serve current and future-looking technology requirements (Vial, 2019). Firms that embark on DT can improve their profitability (Ukko et al., 2019). Outsourcing and cloud services are crucial when considering IT investments (Bharadwaj et al., 2013).

According to participants, CIB is smaller in size than its competitors when comparing client volumes and revenues, which renders large ticket IT purchases that competitors could make in the past out of reach. This gives CIB the

advantage of having fewer legacy issues and a cleaner IT environment at the advent of the 4IR. It quickly could take advantage of digital technologies to build capabilities that became market leading, such as in institutional trading.

Cloud services and modern consumption models offered by IT vendors have levelled the playing field for smaller competitors by providing equal access in terms of capabilities at proportionate costs that are based on flexible usage. Because CIB had a leaner IT architecture to begin with, it has been able to adopt disruptive technologies with greater agility, and being smaller has assisted in quicker decision making. This shows that DT produces improved performance, productivity, and profit. The advantages of incumbent firms having a leaner and cleaner IT environment when beginning to adopt technologies synonymous with the 4IR and from cloud services levelling the playing field for smaller competitors add new perspectives to the literature.

The nature of DT within CIB cannot be separated from its history of technology adoption that has mainly been driven by cost savings and efficiency. To extract the full value of DT, CIB is transitioning to a mindset of DT being far more about business strategy than automating processes. That most new businesses launched by CIB in recent times can be described as digitally led is testament to this. This shift in attitude and mindset for traditional firms to make from casually adopting technology to subscribing to the full effects of DT is congruent with the literature.

Most participants agreed that DT must apply across the firm for it to be effective. Many participants explained that the differences in scale, scope, and pace of DT between CIB and the greater banking group created a bottleneck that impeded its progress. This agreed with the literature.

The attention given to data capabilities is a dominant force behind DT in CIB. Whilst the literature is clear about the importance of data as an aspect of DT, the research adds a new perspective in that creating data capabilities can be a significant catalyst for DT, defining digital strategy, collaboration, external strategic partnerships, and many other aspects of the transformation.

The data gathered from the interviews builds on literature that establishes firms, such as corporate banks, that experience different levels of variation and volume in their businesses, products and services as complex and sophisticated environments for DT. This shows that corporate banking has a component of personal interaction that will outlast the rapid adoption of DT that retail banks exhibit in the literature. The research findings suggest that DT does have boundaries and that it cannot always be applied universally. Establishing boundaries for DT may be important for certain firms, especially where customers expect personal service and where this is a competitive advantage. By identifying the boundaries for DT, this will help to bring focus to all the other areas that it can benefit. This does not appear in the literature. In addition, the issue of complexity arising from having to maintain multiple focuses in terms of customers, channels, and products adds to the literature on this theme.

In evaluating the competitive landscape for CIB with respect to DT, it became evident that being smaller in size compared to competitors can be an advantage for DT when it involves the democratisation of technology, agility, and decision making. The study findings suggest that smaller firms can overtake their competitors by deploying DT.

This concludes the discussion with respect to the first research question pertaining to the nature of DT within CIB. In the next section, the discussion focuses on the second research question, which relates to the digital maturity of CIB.

5.3 What is the digital maturity of the South African corporate bank?

“Digital maturity” refers to a firm’s ability to generate leadership and digital capabilities to take advantage of technologies for superior profits, productivity, and overall performance (Westerman et al., 2014). Assessing digital maturity at periodic intervals during the digital-transformation journey assists to provide a reference point from which progress can be measured (Teichert, 2019; Westerman et al., 2014).

There are many industry and academic contributions to the field of digital maturity. However, many models suffer a lack of generalisability and cannot stand up to academic scrutiny. This study is based on the Westerman digital maturity model (Westerman et al., 2014), which was assessed by Thordsen et al. (2020) as one of 17 models and found to be academically sound and reasonably generalisable.

The model categorises firms according to four quadrants in terms of their digital maturity: beginners, fashionistas, conservatives, and digital masters. Beginners are firms that are reluctant, dismissive, and sceptical about DT. Fashionistas are anecdotally attracted to new and shiny things, in the digital context, without having the leadership capabilities to extract meaningful value. Conservatives, in contrast, have strong leadership capabilities that weigh on DT by being overly cautious and risk averse. Digital masters exemplify both excellent leadership and digital capabilities for DT. They create inimitable competitive advantages from their superior technology competence and instincts of their leaders, and from digital capabilities, such as digital channels, skills, and disruptive technologies (Westerman et al., 2014).

In the following two sections, the findings and literature related to digital and leadership capabilities are discussed.

5.3.1 *Digital capabilities*

Disruptive technologies include AI, big data analytics and blockchain, to name a few. Cloud services are the foundation for the effective usage of many of these technologies. The value of these technologies lies in their ability to connect people, processes, and information. They can also produce and process large amounts of data (Jenkin & Naude, 2018). The findings show that CIB has adopted a number of these technologies, where it has seen clear and demonstrable value from using them, as with data analytics and risk monitoring, for example. CIB also has a strong preference for an application-enabled technology environment supported by cloud services.

Digital channels have become synonymous with reaching new customers and new markets, and with launching new products (Matt et al., 2015; Westerman et al., 2014). Creating differentiated digital experiences for customers comes down in many ways to the quality of the digital channel (Vial, 2019). CIB has used digital channels to launch products that otherwise would not have been feasible, such as in foreign exchange trading, business transactional banking, and insurance. Participants described digital channels as fundamental for reaching customers for these products, and for products to be cost effective and scalable.

Data analytics allows firms, especially those operating in the knowledge economy, to harvest the large amounts of data that flow through them, analyse this data, and produce meaningful insights that improve customer experiences, profits, and performance (Setia et al., 2013). CIB and the greater banking group has made the strategic use of data a main strategic objective. Most of the business units in CIB employ the services of a data analyst. However, quality, access, insights, and timeliness of data are still being improved.

Firms can fall into the trap of emphasising the value of technologies ahead of transforming business models through DT (Teichert, 2019). Participants explained that CIB has a sober view of disruptive technologies, only adopting them when there is a demonstrable use case. CIB has capitalised on digital technologies to enter high-volume markets that are new to it – markets such as business transactional banking, retail stock-broking, and insurance. Digital channels have provided the bank with a low-cost, highly scalable, convenient avenue for reaching clients with certain products and services.

Traditionally, IT and business functions operated in siloes, which prevented them from trading best practices and leveraging each other's knowledge to advance the firm's strategic objectives. Business areas can benefit from the technical know-how of IT colleagues. IT can acquire a sense of business models and their challenges from business colleagues. This cross-functional trait can become a competitive advantage (Ko et al., 2021; Pramanik et al., 2019). The findings show that the mindset about the relationship between IT and business units in CIB is changing and there is notable recognition for the two areas to work together to fulfil business strategy. IT has representation in most management discussions.

However, a senior business leader questioned the lack of IT's involvement in business units to assist in identifying opportunities for DT, stating that business units do not always know the benefits of technology. This lack of involvement may be a consequence of capacity constraints and organisational design.

Digital skills may be the preeminent challenge faced by firms when embarking on DT (Ebert & Duarte, 2018; Ellstrom et al., 2022). This can affect a firm's scope, scale, pace, and results in terms of DT (Chanias et al., 2019; Ko et al., 2021; Pramanik et al., 2019; Souza-Zomer et al., 2020). Hybrid roles and reskilling may address this challenge in part (Ebert & Duarte, 2018). The data shows that CIB has established itself as an aspirational employer in its market to attract premium talent. In addition, it has partnered with a specialist IT recruitment company to crowdsource both skills and solutions in the digital domain. CIB issues problem statements to this developer community, provides basic coding infrastructure, and invites developers to build solutions in exchange for prizes. A senior leader raised the issue of being overweight in terms of contractors in the technology arena in CIB and suggested that a firmer commitment should be made in light of the ongoing nature of DT by employing permanent resources.

According to the data, CIB has developed a few valuable digital capabilities. These include the adoption of digital channels to enter new markets, the commitment it has shown to data capabilities by having embedded data analysts, and the creativity displayed in acquiring digital skills.

However, CIB's cautious and sceptical approach to new technologies must be pointed out. This is evident in the emphasis on exhaustive use cases prior to trying out new technologies. In addition, whilst CIB has progressed by employing data analysts within business units, at least one participant, who was a senior leader, expressed that the units are not necessarily equipped to extract value from this function because they do not understand data capabilities themselves.

The following section considers the leadership capabilities that CIB has developed to take advantage of digital technologies.

5.3.2 Leadership capabilities

Leaders are responsible for setting and being the drivers of the digital strategy and digital vision of a firm (Chanas et al., 2019; Matt et al., 2015; Westerman et al., 2014). Strong leadership that exemplifies appropriate levels of technology competence is necessary for the success of DT and the strategic renewal of firms (Morton & Palfreyman, 2022). Leaders are proponents for innovation and are instrumental in influencing the mindsets of employees for organisational progress. Leaders that can adapt their business strategies in a rapidly changing environment and that are capable of taking calculated risks are invaluable for DT (Ko et al., 2021). Data from participant interviews described a patchy landscape when considering leaders' knowledge and ability to lead DT. Participants noted that leaders do not have to become technology experts; however, they must develop a mindset for DT and be able to embrace change themselves so that they can lead others in this area. The various business units in CIB experience varied levels of urgency for DT. This affects the depths that leaders have waded in to acquire knowledge of DT. Creating a common understanding amongst all leaders will contribute to identifying new opportunities for DT across CIB and will ensure that none of the business units are left behind. The data and the literature are in line about this theme; however, the idea that leaders need a sufficient understanding of digital technologies without becoming technology experts in the banking context is a small addition.

The strength and visibility of digital strategy and vision, governance measures, investment commitment, unique cultural traits for DT, and approaches to change management are indicators of a firm's leadership capabilities to take advantage of new digital technologies. The following sections discuss each of these in detail.

Strength and visibility of digital strategy and vision

Digital strategy considers the strategy and vision, people and culture, governance and process, and technology and capabilities that are required for DT (Evans, 2017). In summary, digital strategy deals with the ways in which a firm will develop organisational readiness to leverage digital capabilities in the 4IR (Bharadwaj et al., 2013; Matt et al., 2015; Pramanik et al., 2019). Business strategy and digital

strategy are combined to serve the corporate strategy, and digital strategy is not merely a function of business strategy (Bharadwaj et al., 2013). DT is reliant on a digital vision that communicates the intentions for it and captures how it will transform business processes, customer engagement, and business models. This will inform customers and employees of what to expect from DT and how it will affect them (Chanas et al., 2019; Morton & Palfreyman, 2022). The data shows that the greater banking group has named digital initiatives and the strategic use of data as top strategic objectives. CIB is a follower of these strategic objectives. Its strong bottom-up leadership approach means that each of its business units is required to interpret these objectives, without much further detail, and incorporate them into its individual business strategies. This means that each business unit will individually establish the scope, scale, pace, and results that it expects from these strategic objectives. The data shows that each business unit has a vision of how it sees itself serving its customers in the future. However, there was no evidence of a unified digital vision for CIB.

Governance protocols

Governance protocols provide the framework for decision-making structures, alignment processes, communication processes, and monitoring (Juiz & Gomez, 2021). Disproportionate governance oversight will impede a firm's ability and agility to innovate (Morton & Palfreyman, 2022). The greater banking group has oversight bodies that run through to CIB. CIB also runs several management committees and decision-making forums of its own to provide oversight. Participants also described an organic approach to decisions regarding resource allocation and project prioritisation that involves teams maturely contesting with each other to determine outcomes related to resource allocation which did not appear in the literature. The data indicated a strong dependence on the bi-annual budget process to bring alignment and resolve conflicts around DT, which also extends to business strategy. Participants expressed that governance protocols should be effective; however, they should not unnecessarily impede innovation.

Investment commitment

One of the indicators of digital maturity is a firm's investment commitment to DT (Westerman et al., 2014). Investing in DT can require long-term horizons and sizeable investments (Pramanik et al., 2019). Investments in technology may not always be justifiable with perfect visibility and quantified returns from the outset and require strong leaders with good instincts in the digital domain. Banks in general have upped their investments in technology since the advent of the 4IR (Krasnikolakis et al., 2020). CIB runs several high-profile projects each year in terms of economic value and resourcing. There is an acute awareness of the reality of financial and other resource constraints. As mentioned in Chapter 4, CIB has a history of investing in technology that goes back decades. It will be interesting to observe the pattern of investment in technology over time to see if it has increased meaningfully to take into consideration the impact of DT. However, the data is not available to accomplish this investigation.

Cultural traits for digital transformation

Cross-functional teams and collaboration are essential for DT, which benefits from different perspectives and usually involves interrelated processes (Vial, 2019). External collaboration is also encouraged to take advantage of specialist expertise and to fill gaps in a firm's offering (Krasnikolakis et al., 2020). A culture that is indicative of open communication, transparency, appropriate risk taking, reasonable room for failure, experimentation, and data-driven decision making is conducive for DT (Vial, 2019). Participants emphasised the need to bridge the gap between IT and business areas so that they can leverage off each other. In the past, the discipline required for collaboration could not always be taken for granted in CIB. However, there is a renewed focus on it that is spurred by DT and the common need to harness data. CIB is a collection of business units that operate autonomously to a large degree. Collaboration may not come naturally in an environment with these characteristics. When considering external collaboration, participants provided examples of strategic partnerships for projects. However, they also expressed that CIB can be inwardly focused and because of this it can miss out on ideas for innovation from external sources, including adjacent industries.

Change management

Change management for DT requires that attention be given to organisational design, cultural make-up, and structure (Krasonikolakis et al., 2020). These areas should be optimised for key enablers of DT such as agile decision making and flat structures (Krasonikolakis et al., 2020; Souza-Zomer et al., 2020). Plans to create organisational capacity to accept and adopt new technologies should precede the introduction of new applications and systems (Chanas et al., 2019). Participants' responses indicated weak procedures and oversight for change management such as co-developing solutions between IT and business to increase rates of technology adoption. This could be a result of having decentralised businesses and not much capacity to build common aspects of strategy such as change management. However, the data showed that senior leaders are taking up digitally linked roles to bring greater alignment.

In summary, the strength and visibility of the digital strategy and vision within CIB depend on the individual business strategies of each business unit. Governance protocols provide the necessary levels of checks without being overbearing. There is a consistent financial commitment to DT annually; however, there is also an awareness of financial and resource constraints. There is room for collaboration both internally and externally to improve knowledge sharing, and sensing and seizing opportunities for DT. Change-management practices are vague. Overall, leadership capabilities to take advantage of technology and DT can be improved.

The digital and leadership capabilities that were discussed in the sections above will be used to assess the overall digital maturity of CIB in the section that follows.

5.4 Assessing the digital maturity of the South African corporate bank

When considering the data presented and discussed in the previous sections, CIB shows progressive signs of improving its digital capabilities by deploying disruptive technologies appropriately; making use of digital channels; building data analytics' capabilities; reducing the proximity between IT and business; finding novel ways of obtaining digital skills; and successfully transforming business models using digital technologies. However, the data shows that not all leaders have the knowledge to manage data analysts and extract value from employing them. In addition, CIB can be sceptical about new technologies, and, whilst IT has a seat in management discussions, it still has a meagre presence on the floor to help business units identify opportunities for DT. The data shows that CIB is overweight in terms of contract resources, which could be an indication of its uncertain commitment to DT.

The leadership capabilities within CIB that are required for DT indicate a conservative commitment to investment and the proportionate governance frameworks. However, leaders' grasp of the digital domain varied, the strength and visibility of CIB's digital strategy and vision were unclear because of the strict bottom-up approach, and change management appeared only to be a slight focus.

CIB does not aim to set new technology benchmarks in its sector, and it generally takes a wait and see approach before adopting technologies, which are characteristics of Beginners in the Westerman digital maturity model. However, CIB has adopted disruptive technologies such as AI and big data analytics after thorough use cases were developed. Because of its general scepticism towards new technologies, the bank cannot be classified as a Fashionista, as this quadrant is overzealous about them. In addition, CIB has appropriate investment frameworks and governance protocols, and has adopted platform architecture. Its reluctance to experiment with new technologies and its emphasis on financial constraints may, thus, be a consequence of aversion to risk in terms of DT. Risk

aversion, coupled with a conservative investment outlook for DT, is characteristic of Conservatives.

In analysing the data, CIB presents certain traits that are characteristic of Beginners and others that resemble Conservatives. This is indicated by the dot in Figure 7 below.

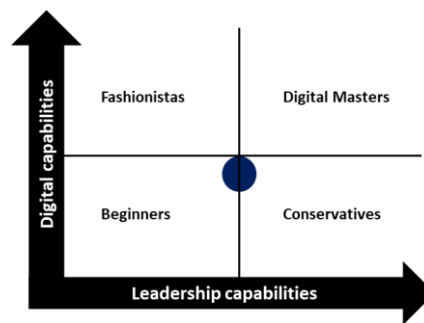


Figure 7: Digital maturity of CIB (Westerman et al., 2014)

According to the study findings and the literature consulted, CIB has developed several valuable digital capabilities and leadership capabilities to support the use of digital technologies within its operations for DT. The key themes that emerged in relation to digital capabilities are the platform architecture supported by cloud services; the use of digital channels to launch new products and services and reach new clients; the embedding of data analysts within business units, which was a novel practice not found in the literature; and the crowdsourcing of digital skills and solutions through an external IT community. However, the data also showed that CIB is sceptical about new technologies and that IT and business can be more aligned. Also, whilst CIB has taken a progressive stance regarding embedded data analysts, there are deficits in terms of extracting value from them, and more permanent resources are required for DT.

Examining the data around leadership capabilities in comparison to the literature revealed appropriate governance structures and consistent but conservative investment in DT. Creating a common understanding and language amongst leaders for DT and defining change-management practices will improve leadership capabilities. The strictly bottom-up approach in terms of leadership and strategy means that there is no universal digital strategy or vision to tie the various business units together. The data indicated that internal collaboration can

be improved because of the autonomy of business units. External collaboration is an opportunity for CIB to broaden its vision by leaning on expertise and best practices, and gleaning from successful cases of innovation by competitors, technology providers, and adjacent industries.

The digital maturity of CIB falls between that of a Beginner and Conservative when evaluating its capabilities according to the Westerman digital maturity model (Westerman et al., 2014).

This concludes the discussion related to the research question about the digital maturity of CIB. In the next section, the study findings and literature relevant to the research question pertaining to the enablers of DT in CIB are discussed.

5.5 What are the enablers of digital transformation in a South African corporate bank?

The enablers of DT are those attributes that propel CIB forward in its DT journey. Investigating the enablers will identify and provide insights into attributes that are advantageous for DT in CIB and whether they are similar to or different from the literature. This is crucial for assessing DT in CIB.

The following section presents a discussion about the key themes and sub-themes emerging from the data collected from the participants and compares them to the literature about the enablers of DT. Table 5 below provides a summary of the key categories and themes that correspond with the conceptual framework presented in Chapter 2, and the detailed sub-themes that emerged from the data.

Table 5: Key categories, themes, and sub-theme details related to the enablers of digital transformation

Key: Categories  Themes  Sub-themes 

Strategy & Vision	People & Culture	Process & Governance	Technology & Capabilities
Strategy	Culture: Collaboration	Change management	Platform architecture
Developing data capabilities, and embedded data analysts	Autonomy and internal competition	Co-development of digital projects by business units and IT	Application-based IT infrastructure
Bottom-up approach for operationalising DT	Culture: Experimentation and Innovation	Senior business leaders taking up digitally linked roles	Modularity, standardisation, minimal integration, and automatic upgrades
Greater alignment between IT and business units	Launching traditional business models as digital businesses	Governance	
Digital channels	Diminished first-mover advantage in Corporate Banking	Oversight that is not overly cumbersome	
Dynamic capabilities and open banking	Talent to launch new businesses	Decentralised decision making	
Investment			
Cloud services and partnering with technology providers			

Regulatory demands that force digital transformation			
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5.5.1 *Strategy and vision*

In this section, the enablers connected to the category of strategy and vision are discussed. The key themes identified relate to strategy and investment.

Strategy

When participants responded to questions about digital strategy, they gravitated towards developing data capabilities, which established it as an enabler of DT.

Data holds the promise of significant value creation for knowledge enterprises. The extent to which firms build their data analytics' capabilities will determine this value. The quality of information produced will assist the firm in sensing changing customer preferences in advance and identifying new products and services. It will also improve knowledge sharing between employees (Setia et al., 2013). Fast and convenient access to accurate information enables employees to be more effective, which contributes to attracting and retaining premium talent (Pramanik et al., 2019). Effective use of data can unearth opportunities for collaboration internally and externally, in this way illuminating new bundles of products and services, improving the speed and frequency of product launches, optimising client engagement, and improving decision making (Bharadwaj et al., 2013). The flow of data within the firm supports open communication, innovation, experimentation, and continuous learning (Teichert, 2019; Vial, 2019). To realise the potential of data fully, firms must invest in data capabilities and digital technologies that can transform data into significant business value (Bharadwaj et al., 2013).

As a business that operates primarily in the knowledge economy, CIB has recognised that data can be an exclusive asset and a source of competitive advantage, which is in line with the literature. According to the study findings, one of the primary purposes for the use of data currently is to generate accurate

reporting. However, there is a will to build on this to extract more meaningful business insights and enhance decision making. To affirm its commitment to developing its data capabilities, CIB has made it the prerogative of each business unit to employ the services of a data analyst. This is a thoughtful approach to developing data capabilities, as embedding data analysts within a business unit allows the analyst to gain a keen sense of its business model to best identify opportunities to leverage data.

By and large the approach taken by CIB corresponds with the literature on this theme. It is noteworthy that CIB has prioritised data to the extent that it has encouraged the employment of the services of a data analyst in each of its business units. This is significant in a banking environment that is generally characterised by homogenous teams of product specialists. It shows an awareness of the possibilities gained from harvesting data effectively and a commitment to prioritising data. As covered in Section 5.2, which reviews the nature of DT, data is an enabler of DT in CIB.

Formulating a digital strategy is fundamental to implementing firm-wide DT (Chanas et al., 2019; Matt et al., 2015;). A digital strategy will map the path to organisational readiness in terms of being able to optimally leverage digital resources and capabilities to deliver the firm's business strategy. Digital strategy and business strategy are not separate entities (Bharadwaj et al., 2013; Matt et al., 2015; Pramanik et al., 2019). Digital strategy is all encompassing, providing guidelines for governance, experimentation, technology selection, collaboration, outsourcing, investments, cybersecurity, and data privacy (Chanas et al., 2019). Most importantly, digital strategy speaks to transforming business models, customer experiences, and business processes; entering new markets; and creating new products and services (Ebert & Duarte, 2018). Digital strategy is generally formulated by leaders in consultation with the broader firm and passed in a top-down fashion to the firm. Leaders create the infrastructure and conditions for DT, whilst the bottom-up approach is favoured for operationalising the digital strategy (Chanas et al., 2019; Westerman et al., 2014).

According to the data generated through the participants' responses, CIB does not have an overarching digital strategy, nor does it have an overarching business

strategy. Instead, each of the 20 or so business units that it houses formulates and develops its own business strategy that is designed around KPIs, which are mainly financial in nature. These collective business strategies are said to be the business strategy for CIB, and the business strategy for each business unit is informed by the greater banking group's corporate strategy. For the most part, digital strategy is seen as part of business strategy, which agrees with the literature. Certain elements such as governance protocols are driven from the top down, whilst many of the other elements that would form the digital strategy, according to the literature, are the prerogative of each business unit. This approach may lead to unnecessary duplication where each business unit is developing or trying to understand common aspects of DT. Participants expressed that no stone will be left unturned in CIB's effort to meet financial targets, which includes embracing DT. They also suggested that top-down strategies are not conducive for an environment that promotes decentralised decision making and provides substantial autonomy to business units. Detailed top-down strategies have failed in the past because of a lack of ownership, responsibility, and accountability.

There are merits to a true bottom-up approach to digital strategy, such as ownership, accountability, responsibility, decentralised decision making, and curtailment of disproportionate oversight. However, this approach can also create room for a lack of accountability and responsibility by not having a central digital strategy against which to coordinate and measure progress across CIB. By not having a unifying digital strategy, this can create inconsistencies, a lack of focus, and timing differences in undertaking DT across the various business units. It could be argued that the alignment around KPIs, which mainly concern financial performance, is strong enough to drive the correct behaviour, timing, and consistency of DT efforts. However, one cannot ignore that this approach may only be suitable in the context of a business such as CIB, which has very clear financial targets, mature leadership, and highly capable employees, and which thrives on being entrepreneurial. Being entrepreneurial in this situation may mean minimal intervention by executives, the least amount required of structure and rigidity, and compelling accountability for delivering financial performance.

Reducing the proximity between business areas and IT is a key antecedent for successful DT. Creating opportunities for cross-functional activity and cross-skilling between the two areas can produce growth initiatives and competitive advantages (Ko et al., 2021; Pramanik et al., 2019). Similarly, alignment between these areas supports the successful rollout of DT projects in a responsible and timely manner (Juiz & Gomez, 2021).

Participants expressed strong views that IT and business areas are meant to act as one within CIB. This approach has generally improved communication and the probability of successful outcomes when implementing DT projects. Management committees have representation from all areas of the corporate bank, including IT, and every area has a voice.

IT is responsible for creating and maintaining a stable technology environment and is fundamental to DT. If there are constraints in terms of resources within the IT environment, they may not be as effective in working alongside business to uncover new possibilities from DT. Business areas left on their own may not always have the awareness or knowledge to unlock new possibilities from DT.

Digital channels enable new ways for customers to engage, create faster turnarounds, provide additional distribution capabilities, enable business models, and have the inherent ability to generate large tracts of data (Evans, 2017; Vial, 2019; Westerman et al., 2014). However, it can be a challenge to introduce digital channels into traditional, and often rigid business models (Vial, 2019).

The data shows that CIB has implemented the business online channel as an avenue for different business units to deliver their products and services digitally. The businesses or products that are currently being serviced by the online channel are typically high-volume in nature. The literature may be correct in pointing out that it can be a challenge to introduce traditional and rigid business models to digital channels (Vial, 2019). However, the complexity that CIB faces in having to provide certain products and services through personal engagement that is the customer's expectation should also be considered.

Dynamic capabilities are capabilities that a firm generates that retain their usefulness and value within a changing digital landscape (Teece, 2007). Firms

that are quick at sensing and seizing opportunities in an ever-changing environment are capable of reconfiguring existing resources and using old methods in new ways that also refer to dynamic capabilities (Ellstrom et al., 2022). Open banking is a dynamic capability that maximises value creation by creating an ecosystem of providers and customers that can leverage each other's strengths (Monitor Deloitte, 2018).

The data shows that CIB is building capabilities with a view to commercialising them for use by third parties. CIB invests heavily in banking infrastructure, and if it can extend this as a service to third parties, these capabilities then become an asset and opportunity for additional revenue. Conversely, CIB uses external service providers for certain capabilities such as foreign exchange interfaces.

The intention by CIB of monetising one of its greatest assets, being banking infrastructure, is noteworthy. The question that arises is: can CIB monetise other assets by providing a service, such as its data capabilities, acquisition and onboarding capabilities, and, ultimately, its customer base? This said, banking is a highly regulated industry, not least of whose regulations are those that pertain to data protection and privacy. If CIB can satisfy these regulations and serve customers better by adding its data assets, other dynamic capabilities, and its customer base to its open-banking initiatives, these could be a source of significant value creation for both itself and its customers. In a corporate banking environment that is characterised by low customer loyalty and the commoditisation of products, differentiation in the future may lie in controlling the open-banking platform, grounded in human cognitive elements such as deal structuring and advisory.

Investment

The current technology environment can be described as dynamic and fast changing, with new technologies and upgrades constantly coming to the fore. Committing to on-premise technologies on a large scale can be expensive and short-sighted. Cloud services have revolutionised the way technologies are consumed by democratising flexible access to them and lowering costs. Investing in transformative technologies may not always conform to traditional investment

decision making frameworks in that these technologies may require vision instead of exhaustive proof of being able to contribute financial gains from the outset (Krasonikolakis et al., 2020).

Participants cited that cloud services have levelled the playing field with CIB's larger competitors in terms of technology. In the past, it was not feasible to purchase the same systems and technologies as those purchased by larger competitors. CIB has also changed its preference for building technology solutions in-house, which was expensive and slow, and placed a strain on resources. Today, it prefers to work with technology partners to leverage off their expertise, economies of scale, and knowledge where appropriate.

Creating competitive advantages from new technology capabilities in a firm that does not consider itself to be a technology firm may require leadership with strong technology competence and foresight to make investment decisions that do not always clearly demonstrate return on investment from the outset. It could require elements of vision and strategy to be outward looking so that the firm can sense and seize opportunities ahead of its competitors.

Participants showed that the banking regulator can be an enabler of DT. Sophisticated regulations and their measurement would not be possible without technology. To a large extent, the drivers between CIB and the regulator are aligned as it is crucial for both to manage risk effectively. One important point that emerged from the study findings that was not evident in the literature was that investment in technology arising from regulatory compliance is not optional and it takes capacity away from DT. This applies to all industry participants and there is value for the banks in implementing these changes also.

This concludes the discussion about the key themes related to strategy and vision and that form part of the enablers of DT in CIB. In the next section, the enablers of DT that emerged from the data and that related to the category of people and culture are discussed.

5.5.2 *People and culture*

From the data collected from the participants, the key themes of collaboration, and experimentation and innovation emerged as enablers of DT in CIB under the category of people and culture.

Culture: Collaboration

The guidelines for collaboration should be included in the digital strategy of a firm (Chanas et al., 2019). DT depends on cross-functional collaboration within a firm and with external parties. Key attributes of a culture that are conducive to DT, such as communication, innovation, and experimentation, are important facets of collaboration (Vial, 2019).

Participants noted the importance of collaboration in transforming products, services, and processes holistically, as there tend to be interdependencies. They also remarked that collaboration in CIB and with the rest of the banking group is necessary for building strong data capabilities. Most importantly, because CIB and the greater banking group encourage a bottom-up approach for most aspects of managing their businesses, competition between product areas can naturally occur, which impedes collaboration.

In a bottom-up environment, it may be necessary to have guidelines for collaboration owing to autonomy of and competition amongst business units, whether intentional or otherwise. The data suggests that CIB will benefit from external collaboration to broaden its outlook in terms of discovering new and innovative methods and to contribute external perspectives to its strategy and vision.

Culture: Experimentation and innovation

Strong micro-level everyday practices can cause inertia and resistance to DT. Firms will require new micro-level practices that promote innovation, experimentation, and appropriate risk taking specifically for DT (Souza-Zomer et al., 2020; Vial, 2019). Digital innovation can lead to entirely new businesses, and

vision, leadership, and governance are important factors of innovation (Matt et al., 2015; Westerman et al., 2014).

When evaluating the data on innovation, certain key sub-themes emerged to suggest that in CIB it is more important to implement successfully business models that are new to the bank but not necessarily new to the market than to generate novel products and services. Participants cited that products and services are largely commoditised, which diminishes the effects that a first mover would have in other industries.

According to the data, CIB considers innovative thinking, which it displays by structuring and advising on transactions, to be a competitive advantage. The bank has also shown a propensity to take traditional business models, such as business transactional banking, retail insurance, and retail stockbroking, and launch them in a digital format, which some might argue is disruptive. In addition to products and services being commoditised in corporate banking, they are often standardised through regulation, which makes them easier to replicate. This supports the view expressed in the data that the first-mover advantage may be diminished within corporate banking. Innovation can be expensive, in both time and resources, and CIB, according to the data, does not envision being the industry leader for digital innovation. However, establishing digital innovation as an aspirational goal, a strong tenet of the digital vision, and encouraging entrepreneurial instincts to overcome constraints could serve as a low-cost motivator that can be harnessed to lead the market in more franchises.

This concludes the key themes pertaining to people and culture that can be classified as enablers of DT in CIB. In the following section, enablers related to the category of process and governance are discussed.

5.5.3 *Process and governance*

The key themes emerging from the data about enablers of DT that fall under the category of process and governance relate to change management and governance.

Change management

DT benefits from organisational design that promotes agency, agile decision making, collaboration, and flexibility in responding to changing customer demands (Chanas et al., 2019; Souza-Zomer et al., 2020). Adoption of new technologies and resistance to change can be addressed through alignment processes and clear communication plans (Chanas et al., 2019).

CIB relies on the joint development of IT projects between IT and business units to drive change management organically with respect to new technologies and systems, ensuring that they are fit for purpose and based on a strong business case. Organisational design in CIB was described by participants as being as flat as possible to enable agile decision making and to empower teams and employees. This is in line with the bottom-up approach described in earlier sections. Senior business leaders are transitioning into important roles that are central to DT. This assists in creating a better understanding of the drivers, needs, and capabilities between business units and IT.

The organic approach to change management may succeed in a relatively small environment that runs a finite number of applications, some of which are continued for long periods of time. In addition, CIB's strong emphasis on the bottom-up approach may assist with change management. Shifting senior business leaders to roles linked to DT is commendable and will serve to bridge the gap in language, strategy, and vision for DT.

Governance

Juiz and Gomez (2021) suggest that a good technology governance framework will include decision-making structures for architecture performance and investment; alignment processes to ensure that IT initiatives support business strategy; communication plans to make policies and procedures plainly known; transparency of project timelines; and monitoring to measure progress and accountability continuously. Governance will also address IT resource allocation (Ellstrom et al., 2022). Implementing new technologies will also require governance protocols to ensure that they are safe to integrate into the existing environment and are ethical (Vial, 2019).

Governance frameworks should be appropriate by not introducing unnecessary layers of approval processes (Morton & Palfreyman, 2022).

Participants echoed similar sentiments, stating that governance protocols need to be effective against technology duplication and resource allocation without being cumbersome and slowing decision making. Participants described CIB as less formal than what they know other firms to be because of its bottom-up approach, decentralised decision structures, and autonomy of business units.

The agile governance protocols described by the participants may suit a moderately sized business such as CIB. The data shows employees of CIB have high levels of awareness of risk and regulation, which is part of the culture and may contribute to a higher degree of self-governance. As CIB grows, it will be interesting to observe whether it can maintain this approach or whether it adopts a more formal approach. Conversely, an informal approach in a larger organisation may be counterproductive to growth if it is unpredictable and places more emphasis on the decisions of a few leaders, who rely on anecdotal information.

This concludes the discussion about key themes pointing to enablers of DT in CIB connected to process and governance. In the next section, the enablers of DT in CIB are discussed in relation to technology and capability.

5.5.4 *Technology and capability*

A key enabler from the category of technology and capability for DT focusses on platform architecture, which was explained in Chapter 2.

Platform architecture

Customer expectations and demands should drive the digital experience that banks offer to their customers. Creating differentiated digital experiences involves far more than websites and mobile apps (Vial, 2019). Open banking is a way of servicing customers and intermediaries through an ecosystem by leveraging each other's strengths (Monitor Deloitte, 2018). Customers benefit from new and convenient configurations of strategic partnerships through open banking. Open

banking relies on strong IT architecture that provides connectivity and integration; however, it must protect the banking environment at the same time from cyberattacks (Lynn et al., 2020; Monitor Deloitte, 2018).

The use of APIs was described by participants as key to digital and IT architecture for CIB's in-house applications and for connecting to customers. Providing products and services that can plug into customers' interfaces vastly improves the customer experience, especially when customers are multi-banked. By favouring the applications' approach to infrastructure, CIB benefits from modularity, standardisation, and automatic upgrades. The bank can rely on vendors to operate and maintain applications that allows it to operate a leaner IT environment. There are cost and speed advantages, such as when launching new products, from this applications' approach to infrastructure.

Taking an applications' approach to infrastructure is a relatively new foray by CIB that it is working on perfecting internally and within the greater banking group. The objective is for applications and capabilities to be available to business units across the group in an app-store fashion, with minimal integration and time for implementation required. This could vastly improve the speed of product launches, general adaptiveness, and attentiveness to changing customer demands. There are cybersecurity considerations with this approach. By opening systems to third parties, this could open the door for intrusions. However, proportionate cybersecurity measures should be taken, and this concern should not detract from the inherent potential of platform architecture for improving customer experiences, introducing competitive advantages, and leveraging strategic partnerships.

CIB has embraced many enablers of DT. These include: building data capabilities; adopting the bottom-up approach to strategy and leadership, which is suited to operationalising DT; reducing the proximity between IT and business to promote cross-functional collaboration and thinking; using digital channels to offer new products and services and reach new markets; adopting platform architecture; making preparations to commercialise banking applications for use by third parties; adopting cloud services and disruptive technologies; making steady investments in projects related to digital technologies; and recognising the

importance of regulation, which sometimes forces DT. Further to this, CIB relies on co-development of IT projects between IT and business to assist with change management and it has appointed at least one senior business leader in a digital role. CIB is aware of the need to make governance processes fit-for-purpose and for these processes not to be cumbersome.

This concludes the discussion on the enablers of DT in CIB. In the next section, the hinderances of DT are discussed.

5.6 What are the hinderances of digital transformation in a South African corporate bank?

The hinderances of DT in CIB are those characteristics that impede its progress and that, if resolved, could positively influence its productivity, performance, and profitability through DT. Investigating the hinderances of DT is important for assessing DT within CIB. The categories, themes, and sub-themes that are discussed in the following sections in relation to the literature are based on the data that was collected from participants and guided by the conceptual framework presented in Chapter 2. Table 6 below presents summary of these categories, themes, sub-themes.

Table 6: Key categories, themes, and sub-theme details related to the hinderances of digital transformation

Key: Categories Themes Sub-themes

Strategy & Vision	People & Culture	Process & Governance	Technology & Capabilities
Strategy	Culture: Experimentation and Innovation	Change management	Disruptive technology enablers: Data
Absence of a unifying digital strategy	Conservative approach to experimentation and innovation	Poor adoption of systems	Completeness, accuracy, format, and currency of data
Fragmented approach to DT	Regulations and resource constraints	Governance	Manual intervention required to extract meaningful insights from data capabilities
Inconsistent base awareness of digital transformation	Nature of innovation	Prioritisation of IT and digital projects and allocation of resources	
Absence of common digital language	Room for improvement when considering agility, implementation, and deliverables related to projects		
Absence of a unifying digital vision	Culture: Collaboration		
	Misalignment between CIB and greater banking group		

	Digital skills		
	Absence of intentional learning programmes		
	Disproportionately inward looking or insular		
	Leadership: bottom-up & KPIs		
	Inconsistent base level of digital knowledge to extract potential from digital transformation		
	Lack of support for leaders		
	Leaders do not necessarily become digital or technology experts; however, they require a base-level knowledge		
	Key performance indicators are mainly based on financial metrics. Specific KPIs for digital transformation are required		

5.6.1 Strategy and vision

Kretschmer and Khashabi (2020) suggest that when DT is carried out on a single process or product and service without consideration given to the entire ecosystem, it can produce negative results for the firm and the customer. These authors encourage firms to use the highest vantage point when setting digital strategy so that processes, for example, are comprehensively reviewed and updated considering the entire ecosystem. Digital strategy should address the comprehensiveness of DT, where leaders will create the framework, common support, and infrastructure for the transformation and invite the rest of the firm to operationalise it (Chanas et al., 2019). Digital strategy will address the scope, scale, and pace of DT and the sources of value from it (Bharadwaj et al., 2013).

Creating a common language around DT is fundamental to its success. It is imperative that business teams have a base-level digital literacy and for IT teams to have a base-level awareness of business activity (Ko et al., 2021; Vial, 2019). DT requires a firm to review holistically its approach to recruitment, skills, mergers and acquisitions, reward structures, and, importantly for this argument, learning and development in creating a common digital language (El Safadi, 2021). Continuous learning and innovation are synonymous with the ongoing nature of DT (Ellstrom et al., 2022).

Sentiment expressed by the participants around strategy was grounded in the bottom-up approach taken by CIB. This approach is favoured because it places the responsibility and accountability for producing results firmly within each business unit. This eliminates any ambiguity about who is responsible, as each business unit owns its business strategy. When it came to the aspect to digital strategy, whilst there were many successes, there were also many frustrations about inconsistencies and poor coordination. The data was clear that not everyone, even amongst decision makers, had a common understanding of the fundamental concepts related to DT, and this could slow progress.

CIB has shown that a bottom-up approach to digital strategy and, indeed, business strategy can be effective to an extent, especially for operationalising DT. However, there is evidence of inconsistencies and poor coordination also.

From evidence provided in the literature, it may benefit CIB to consider that certain aspects of strategy are better suited to a top-down approach, especially aspects that apply commonly across CIB and are foundational to DT. As examples, creating a meaningful common digital strategy and vision that will guide each business unit as it formulates its own; a common digital language; guidelines for collaboration and experimentation for digital innovation; cybersecurity and data-privacy standards; and investment guidelines are aspects that will benefit from a top-down approach. Some of these attributes are already common in CIB, as gleaned from the data. However, the principle of a dual approach to strategy formulation and leadership is the main emphasis. It could be argued that it is not an optimal use of time and resources for each of the 20 plus business units to develop their understanding of the common aspects of strategy individually, not least because they could come to different conclusions.

CIB comprises a diverse set of business units. Each business unit, or product area to be more specific, could be at a different stage in its lifecycle. The lifecycles emanating from the data concern start-ups, which are mainly dependent on digital technologies; historical businesses, which are engaged in strategic renewal using digital technologies; and businesses, which, from the inside looking out, see no immediate need for or benefit from meaningful DT. As we have seen from the data, each business unit could have a different mindset regarding the scope, scale, pace, and sources of value with respect to digital strategy. These become important measures that can be used to assess whether the value from DT is being appropriately maximised in each business unit according to its lifecycle and will ensure that no business unit is left behind in terms of DT.

The data received from participants was clear that CIB does not have a formal digital vision. At least one participant pointed out that having a roadmap that corresponds to an envisioned future digital state will be worthwhile for communication with customers. A participant suggested that CIB is not sufficiently outward looking in terms of learning from technology experts and innovation in other industries. However, not having a formal digital vision has not prevented CIB from making many moves with respect to the DT of business models, business processes, and customer experiences.

One could argue that, based on the case of CIB, there may be no reason to have an overarching digital vision and that it is sufficient for each business unit to develop its own outlook. However, gains from DT in the absence of a unified digital vision may only represent partial success. A digital vision can serve as an effective way of communicating the direction of CIB, by unifying business units around it. By motivating the right behaviour for DT, a digital vision will also force the firm to look outwards in shaping its views and stretch its thinking.

A summary of the hinderances of DT in CIB related to strategy and vision are as follows: the bottom-up approach taken for strategy and culture, whilst beneficial for operationalising DT, is not conducive for setting a common direction and communicating it. By not balancing the bottom-up approach with a top-down strategy, this leads to disjointedness, the lack of clear direction and coordination, the fragmentation of DT in processes, and the lack of a common language across the business units with respect to DT.

In the following section, the hinderances related to people and culture are discussed by comparing the data and the literature on this category.

5.6.2 *People and culture*

The key themes and sub-themes about hinderances under the category of people and culture related to innovation and experimentation, collaboration, digital literacy, bottom-up leadership, and KPIs. These are discussed below.

Culture: Experimentation and innovation

Firms need to consider cultural shifts to formulate new practices around people, processes, and organisational structure that will better support innovation, experimentation, and appropriate risk taking (Souza-Zomer et al., 2020). There also needs to be an appropriate level of acceptance of failure to encourage innovation (Chanas et al., 2019). Firms that have a strong risk-management culture will need to challenge themselves to make long-term investments in sound business cases that may affect near-term profits. Firms should beware of only

investing in short-term projects that are easy to understand and where the returns are predictable (Krasonikolakis et al., 2020).

Participants expressed the view that appetite for experimentation and investment in new initiatives can be conservative. Participants suggested that several new initiatives in the past were a response to competitor activity and were based on tried-and-tested products and business models. The reasons provided in the data for the conservative approach relate to impeding regulations and capacity constraints concerning people, IT resources, and investment.

One can argue that for any firm that is reasonably innovative by nature, the conundrum of having more good ideas than capacity to implement them will appear. The reality for CIB could be an example of this. Participants provided evidence that CIB implements a fair number of projects each year at a significant economic value; however, realistically it cannot afford to implement every good idea.

At least one participant questioned whether CIB is truly innovative, following its track record of building and launching businesses that are new to it but that are not necessarily new to the market. The objective of this study is not to develop a taxonomy of innovation; however, this finding suggests that CIB should evaluate its capabilities for different types of innovation. According to the data, the various facets of innovation include digital innovation; innovation and creativity expressed in transactions; the ability to implement tried-and-tested products successfully; and the capacity to generate new products and services. As the literature warns, this preference for implementing business models that exist in the market may be an indication of bias towards implementing projects that are easy to understand instead of truly transformative projects that, although riskier, carry the promise of significant returns. It could also indicate a lack of technology competence to make bold technology decisions; the inability to sacrifice short-term profits to make significant long-term investments; insufficient room to accept failure within the context of a highly regulated banking industry; sub-optimal organisational design to encourage innovation and address the capacity constraints; and the lack of discipline from a capacity and investment perspective for projects.

Digital vision should account for changing customer expectations and competitor activity, and to eliminating mismatches between a firm's capabilities and the future of digital innovation (Ellstrom et al., 2022; Pramanik et al., 2019). Its digital vision will determine whether the firm sees itself as leading its segment or industry in digital innovation, which will serve to unify, inspire, and motivate employees in a common direction and serve as a guide for decision making. Committing to becoming a technology leader is contextual, and the risks and advantages should be weighed on that basis (Matt et al., 2015).

Firms should take an iterative approach to innovation, using pilot projects, proofs of concept, and simulations to judge the potential of good ideas and encourage experimentation (Pramanik et al., 2019). Important antecedents for DT include open communication, innovation, appropriate risk-taking, experimentation, and empowered and data-driven decision making (Vial, 2019; Teichert, 2019). Banks can adopt avoidance behaviours towards experimentation and innovation because they operate in highly regulated environments (Krasonikolakis et al., 2020).

Data shows that CIB often embarks on new initiatives only when prospective business models have been proven exhaustively. This may be indicative of a risk-averse and conservative culture, with little room for experimentation as a result of either the awareness of the risk from experimentation against a strong regulatory backdrop or a tendency to avoid risk.

Agility in digital innovation relies to an extent on the speed of decision making. Bottom-up structures are conducive to quicker decision making and facilitate a quicker response to changing customer expectations (Chanas et al., 2019; Ko et al., 2021; Souza-Zomer., 2020). More governance oversight than is required can impede a firm's agility in responding to market changes. The IT environment can be complex in that IT is responsible for maintaining a stable and predictable environment, especially in the banking industry, whilst it can also be fundamental to digital-innovation initiatives. Firms can deploy a bimodal governance structure for IT to deal with these two unique requirements separately (Ebert & Duarte, 2018; Ko et al., 2021). The clock speed of product launches relies on DevOps

principles and the flexibility of IT infrastructure gained through cloud services, for example (Evans, 2017).

The data gained from participants established that the area of implementation and delivery of IT projects is ripe for improvement. Many participants felt that responsibility and accountability for deliverables were lacking.

When considering the enablers of DT, as discussed in Section 5.5, it was established that CIB's flat structure is conducive to faster decision making. Therefore, governance protocols, IT's structure, and the use of modern software development methods must be considered to improve overall agility. Perhaps, a bimodal approach to IT structures as suggested by the literature will allow IT to split its focus between maintaining the stability of the IT environment and implementing new projects, which are two things that require different mindsets. Another reason for poor implementation may be that the business representatives who contribute to projects may not have sufficient focus time outside of their normal day-to-day activities. KPIs may also need to be reviewed if accountability and responsibility, in a bottom-up environment, are some of the issues regarding deliverables.

Culture: Collaboration

Fragmented DT within the firm will have knock-on consequences (Kretschmer & Khashabi, 2020). Therefore, a comprehensive digital strategy that addresses alignment of technology, people, processes, organisational design, and governance is imperative (Souza-Zomer., 2020). Firms are encouraged to standardise IT infrastructure across the board to benefit from interoperability, reusability, efficiency, and cost advantages (Bharadwaj et al., 2013).

Data indicated that there are misalignment issues between the CIB and the greater banking group concerning technology, rollout of common systems, people, and processes.

Misalignment and its ensuing friction between CIB and the greater banking group may be addressable at a global level through a firmwide digital strategy. By not having published guidelines and service level agreements in some cases, each

individual point of friction will consume resources and time to resolve it. The firmwide digital strategy may look at addressing the standardisation of IT approaches and the dovetailing of people and processes across its divisions in terms of structure.

Digital skills, creating a common language

An awareness of the possibilities derivable from DT hinges on the cross-functional collaboration between business units and IT as well as the cross-skilling of the two areas (Ko et al., 2021; Vial, 2019). Firms must be deliberate in the way they curate learning and development programmes and should encourage continuous learning around DT (El Safadi, 2021). Leaders must have a reasonable amount of technology competence to lead in an era where new opportunities for growth are rarely devoid of digital technologies (Ukko et al., 2019). A common understanding and language created around DT will improve employee engagement (Krasonikolakis et al., 2020). In the absence of a common understanding, DT efforts that are mooted could be rejected and, in this way, opportunities missed. Working with organisations such as universities and technology experts could supplement internal knowledge, especially for traditional firms (Chanias et al., 2019; Ko et al., 2021; Pramanik et al., 2019; Souza-Zomer et al., 2020).

The data retrieved from interview participants shows that business personnel and IT personnel do not always have a sufficient understanding of the basics of each other's domains. Leaders in the business domain are mostly banking and finance product specialists without any formal training for DT. IT does not have a sufficient presence on the floor in business areas to be aware of their business models. As far as the participants were aware, there are no intentional learning programmes to support DT, although most new growth initiatives depend on it, and this is set to increase into the future. Leaders see the benefit of intentional and continuous learning towards DT and those who are passionate about the topic, or whose businesses are at the coalface of it, have taken it upon themselves to learn about it.

The data suggested that CIB must develop stronger outward-looking capabilities when it comes to developing digital literacy, which it can achieve with help of strategic partners that are subject-matter experts in the field of DT. This external collaboration will allow for information dissemination and upskilling. Deliberate learning programmes around DT will help to create a common understanding of DT and to uncover possibilities for it to take place. Recruitment should aim at skills that straddle banking and technology competencies. Many interview participants spoke of the need for self-development, which could be a further indicator of the bottom-up culture. However, they indicated that they were not always able to find the structure to undertake this. Many participants expressed concerns about not being on the same page as colleagues in terms of technology conversations. Learning may be one more area that could benefit from a common approach led from the top for continuous learning and improvement to complement individual learning efforts.

Leadership: Bottom-up

The areas of focus for leaders with respect to DT involve the following: using DT to support and enhance business strategy; being able to engage employees in DT; influencing employee mindsets around digital innovation and product development; and developing the skills required for DT. Leaders also focus on implementing organisational-design changes to make the work environment more conducive to collaboration, cross-function, cross-skilling, innovation, and experimentation; creating common infrastructure and support for DT; and being able to formulate and communicate the digital strategy and digital vision (Ko et al., 2021; Ukko et al., 2019).

The data gathered from interview participants pointed to various levels of technology competence and attitudes to DT amongst leaders. It also showed that leaders within CIB, in some instances, require more support for DT. Leaders who have not embraced DT are not able to influence the mindsets of employees to take advantage of it.

If CIB is convinced that DT will be a significant source of growth in terms of processes, customer experiences, making feasible business models that are new

to the market or to the bank, and generally producing new revenue streams, then it should consider developing leadership programmes that focus on DT. A participant at the coalface of launching digital businesses expressed a clear need for curated DT learning programmes that have a focus on the first principles of DT. There may be a time in the future when thinking digital first in a significant number of business discussions becomes the norm. This is an indication that organisational readiness for DT is still being developed.

Leadership: Key Performance Indicators (KPIs)

Alignment with and responsibility and accountability for DT initiatives can be measured, monitored, and rewarded using KPIs (Chanas et al., 2019). The monitoring function is key to measuring progress and establishing predetermined milestones for accountability and responsibility. It also provides opportunities for course correction (Juiz & Gomez, 2021).

The data shows that CIB has a high-performance culture that is driven primarily by financial targets. These financial targets are relied on to shape all underlying activity, which would include DT. From earlier discussions in this chapter, it has been established that CIB favours a bottom-up approach to leadership for reasons that include shortcomings related to responsibility and accountability from a top-down approach. Even with the bottom-up approach, participants felt that there was a lack of accountability, responsibility, and consequences for deliverables related to projects. Leaders confirmed that the area of KPIs is being reviewed to drive more specific outcomes and behaviours.

These pitfalls could be symptomatic of an environment that is firmly grounded in the bottom-up philosophy without the necessary monitoring, measurement, and reporting mechanisms required for it. More specific KPIs, for example those directly related to turnaround times on projects, will drive behaviour for objectives more acutely. A bottom-up approach calls for specific KPIs and involving employees to co-develop them to an extent may be a good approach. Monitoring, reporting on, and measuring KPIs will suit a top-down approach. Identifying unmet KPIs will assist in uncovering bottlenecks and inefficiencies and assist with continuous improvement.

This concludes the discussion relating to hinderances of DT from a people and culture perspective. In the next section, hinderances of DT in CIB related to process and governance will be discussed.

5.6.3 *Process and governance*

The key themes that emerged from the data in the category of process and governance are change management and decision making in governance. These themes and their sub-themes are discussed below as they relate to CIB and in comparison to the literature reviewed.

Change management

Resistance to change brought about by DT can surface as a result of apprehensiveness and the desire to protect individual interests. To counter this, careful consideration must be given to alignment amongst stakeholders, a comprehensive communication plan, and learning programmes (Chanias et al., 2019).

Participants mentioned that certain applications when introduced to employees experienced poor acceptance and adoption. Another concern was that employees in certain contexts may be fearful of technologies making their jobs redundant.

It is possible that not having a unifying digital vision can lead to apprehension and resistance. A digital vision will assist to communicate the future of the firm with respect to technology and how human skills will be better used. The digital vision should also assist with obtaining buy-in to DT from employees. Avenues for reskilling should also be explored to allay fears of employees about being made redundant. Employee engagement and changing mindsets around DT will assist change management further.

Governance: Decision making

Digital and IT resource allocation is addressed through governance protocols. Firms may choose to allocate resources from the centre or make it the prerogative of every division. Consideration must be given to waste, duplication, and investment protocols when deciding on the distribution of resources and the prioritisation of projects (Ellstrom et al., 2022). Alignment between IT and business can be improved through cross-functional teams and by leaders and employees crossing over the two domains (Ko et al., 2021; Vial, 2019).

The data from participant interviews highlighted two main concerns around decision making related to alignment. First, there are situations where projects are queued for long periods of time because systems and resources are intertwined, which impedes project rollout. Second, in an environment characterised by autonomous business units, there will be areas that compete internally. CIB is looking at appointing senior business leaders to digitally linked roles to assist with alignment and to drive the digital strategy as part of the business strategy.

This concludes the discussion related to hinderances of DT from a process and governance perspective. The following section focuses on technology and capabilities.

5.6.4 *Technology and capabilities*

The dominant theme that emerged in this category concerns data. The challenges linked to data capabilities are discussed below in comparison to the literature findings.

Disruptive technology enablers: Data

The quality of data systems can be measured in terms of their completeness, accuracy, format, and currency. Access to precise information has the potential to improve customer centricity. Firms that operate in the knowledge economy will benefit greatly from capabilities generated to process unstructured data. Timely information will improve decision making and sharpen a firm's competitive edge.

When people, products, and services are better connected through data insights, the business strategy will benefit immensely (Setia et al., 2013).

Participants mentioned that data is not always accessible in a uniform way and in central locations. While data quality is improving, improvements can be made at the source of collection. Many participants expressed concern that meaningful data still requires manual intervention. There was a feeling that large tracts of data exist that are not being used. Participants highlighted the importance of leveraging external data sources, which is being improved. Participants also mentioned that data-driven decision making is not being fully leveraged.

Data capabilities are a relatively new discipline following the advent of big data analytics because of advanced computer and processing ability. With data capabilities being a new discipline, CIB will benefit from looking outwards in terms of the data capabilities it plans to build. Generally, best practices for newer disciplines are improving constantly, and learning from industry participants, adjacent industries, and subject matter experts will improve CIB's own data outlook. Recruiting premium skills will be an advantage in the long term, especially if this is to become a source of competitive advantage for the corporate bank. If pulling the various pieces together to produce a data environment that is meaningful to all employees is challenging, CIB can consider formulating a data strategy to drive all efforts around data in the same direction. New cultural micro-practices may assist to capture data correctly at source. Implementing appropriate governance protocols around the sharing of data may speed up the creation of central repositories by eliminating conflict and friction between business areas.

The following summarises the discussion regarding the hinderances of DT in CIB. Whilst the bottom-up approach to business and digital strategy in CIB is conducive to operationalising DT, it requires a top-down approach to create a unified digital strategy and vision that will knit its business units together around DT, prevent fragmentation, and create a common digital language. The absence of a digital vision limits the scope of DT and causes CIB to miss ideas for innovation by being inward looking. CIB's approach to innovation and experimentation is one that has been described as conservative, with a bias

mostly towards proven business models that are convenient to understand. IT's capacity for being an enabler of DT is constrained by resources that are required to focus primarily on maintaining a stable IT environment. The absence of appropriate KPIs may be one of the reasons behind the concerns around CIB's agility that were expressed by many participants. Misalignment between CIB and the greater banking group in terms of DT is impeding its progress, which may be the result of not having a comprehensive firmwide digital strategy. A theme emerged to suggest that a common base-level understanding of DT and a common language for it is lacking. A few leaders expressed a requirement for more support to be able to take advantage of DT. More consideration needs to be given to change management, and particularly to alignment between the various areas; transparent communication plans that will help with measuring deliverables and agility linked to DT; and a digital vision that will explain where CIB is heading with DT and how employees will be engaged. Lastly, decision making within CIB was found to be anecdotal and instinctive at times, and it can miss taking full advantage of data and subject matter experts.

5.7 Conclusion

The categories, themes, and sub-themes identified from the conceptual framework used for the study are complex. For example, certain elements of strategy were found to be enablers while others were hinderances. This was true of many other categories and themes.

The data showed that CIB has been an adopter of technologies for decades. However, with the advent of the 4IR and ensuing disruptive technologies, the bank has shifted from focusing only on improving business processes to transforming customer-engagement channels and business models through digital technologies. The data provides examples of business strategy becoming digital strategy. The data also supports the literature finding that DT is ongoing by nature and is most effective when deliberately actioned across the firm because of interdependencies in processes. Approaching DT from a data-first perspective was an aspect of CIB policy that stood apart from the literature. CIB intends to maintain personal-engagement channels where customers expect it,

and the bank sees this as being a competitive advantage for a long time to come. Corporate banking must hold multiple focuses in terms of channels, technologies, customers, and products because of micro-segmentation in a highly complex environment characterised by different volumes and variation. This aspect added to the literature about DT in corporate banking.

The competitor landscape in corporate banking, as described by CIB, also involves the digital share of wallet because of the exclusive value of data, which is seen as a source of competitive advantage. The data showed that corporate banking is further characterised by customers who are multi-banked and products that are often commoditised. Because of this, differentiators linked to personal service and digital channels that precisely meet customer expectations are crucial. These were interesting additions to the literature.

Corporate banking, in addition to having high-touch businesses, includes products for institutional trading that are very much dependent on the effective use of disruptive technologies to become a market leader. Cloud services and application-based architecture have provided CIB with the tools to build market-leading technology competencies for these types of products, according to the data. This agreed with the literature findings.

The Westerman digital maturity framework was used to assess the digital maturity of CIB (cf. Westerman et al., 2014). The data was analysed according to the axes of digital capabilities and leadership capabilities for DT. CIB exhibited fair digital capabilities related to the appropriate use of disruptive technologies; the use of digital channels to enter new products and markets; a strong commitment to generating data capabilities; and innovative ways of accessing digital skills. However, the data also showed a scepticism about new technologies. In terms of leadership capabilities, CIB exhibited strong capabilities related to governance and investment. However, the data showed that strategy, vision, leadership competency for DT, collaboration, innovation and experimentation, and change management could be improved. CIB presented characteristics that placed it between the Beginner and Conservative categories in terms of digital maturity (see Figure 7).

One could argue that the digital capabilities that CIB has built could not have been achieved without appropriate leadership capabilities. The Westerman model is not explicit in addressing the interdependencies between these two capabilities.

When investigating the enablers of DT in CIB, the following emerged:

- Building data capabilities can force DT;
- A bottom-up strategy is conducive to operationalising DT;
- Reducing the proximity between IT and business and improving the alignment between them assists with uncovering opportunities for DT and helps with exploiting them;
- Digital channels can open new markets and enable new products whilst being cost effective and scalable;
- Platform IT architecture and open banking are imperative for competing;
- Steady investments in DT are crucial for success;
- Collaboration internally and externally is important for building capabilities for DT;
- Cultural shifts pertaining to innovation and experimentation are necessary; and
- Proportionate governance measures are required.

When investigating the hinderances of DT in CIB, it emerged that having a bottom-up strategy without a top-down strategy for common aspects of DT can impede its progress, while not having an overarching digital vision can stifle the firm's outlook for DT. In addition, DT was revealed as involving a mindset shift that requires different cultural responses to innovation and experimentation.

The following specific hinderances were identified:

- The issue of not always being able to deliver DT projects in an accountable manner;
- Misalignment between CIB and the greater banking group in terms of structure and priorities related to IT;
- The lack of a common digital language and common understanding of DT, which can impede progress;

- The absence of deliberate learning programmes for DT;
- One-dimensional KPIs;
- Poor data-driven decision-making capabilities; and
- A patchy data environment.

The Evans digital transformation framework was found to be suitable for assessing DT in CIB (Evans, 2017). It provided a valuable guide for investigating the enablers and hinderances of DT. Earlier discussions established CIB as a complex business environment, which meant that many of the themes provided by the Evans digital transformation framework and tested with the participants attracted positive and negative attributes.

The conceptual framework presented in Chapter 2 was largely validated by the data gathered through the interview processes. The data did not produce noteworthy new categories, themes, or sub-themes. However, a few important insights emerged, included in Table 7, that described corporate banking and CIB specifically.

Table 7: Important insights about corporate banking and CIB

- Corporate banking customers are characterised as having relationships with multiple corporate banks which impacts customer loyalty.
- It is common for products in corporate banking to be commoditised. In addition, the first mover advantage for launching new products and services is not as prevalent. One of the reasons for this is the standardisation of products through high levels of regulation.
- Digital channels allow CIB to compete in retail customer segments because of their suitability to high-volume products, lower costs and scalability.
- Penetration with regard to digital products is important for access to customer data, implying that digital share of wallet is crucial.
- Leaders in CIB are generally financial product specialists with limited training on the impact that 4IR technologies can have on businesses.

- Teams in CIB compete on a commercial basis to determine the prioritisation of IT projects and resource allocation.
- The strong bottom-up and autonomous nature in CIB can pose challenges for collaboration.
- In CIB, KPIs are mainly financial in nature.
- Regulatory compliance can force digital transformation and this kind of transformation is prioritised ahead of business' digital initiatives.
- CIB operates in a complex business environment that in many ways thrives on personal engagement and human cognitive abilities.

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

DT is more about transforming people, their attitudes, and mindsets to reimagine businesses in a digital context than it is about technology (El Safadi, 2021). DT involves a review of business processes, business models, and customer engagement channels to produce superior productivity, performance, and profits (Chanias et al., 2019; Westerman et al., 2014). DT depends on continuous learning and innovation, it is not representative of an end-state, and it often requires an element of strategic renewal (Chanias et al., 2019; Ebert & Duarte, 2018).

The purpose of this research study is to explore the enablers and hinderances of DT in a South African corporate bank. An extensive review of literature related to DT revealed that most research in the banking industry pertained to retail banks that existed outside of the African continent. A corporate bank situated in South Africa provided a unique case in terms of which to examine DT.

DT is still being fully understood (Teichert, 2019; Thordsen et al., 2020). Therefore, in terms of its selected research design, this study benefitted from adopting the qualitative approach as it sought to examine DT from the perspectives and experiences of a selection of employees from a South African corporate bank. This case study is based on a single South African corporate bank. Purposive sampling was used to select the most relevant interview participants. Semi-structured interviews formed the basis of the data collection. Data was analysed using NVivo and coded according to the conceptual framework presented in Chapter 2 and using the sub-themes that emerged directly from noteworthy responses by participants.

An extensive review of literature related to DT and digital maturity was undertaken and is presented in Chapter 2. The findings from the data collected from interview

participants are presented in Chapter 4 and a discussion of the findings in relation to the literature is presented in Chapter 5.

In this chapter, the conclusions regarding the research questions are presented along with the research study's contributions to the research field and its recommendations for practice and for future research.

6.2 Conclusions regarding research questions

The research study's objectives included assessing the DT of a South African corporate bank and its digital maturity level and investigating the enablers and hinderances of DT within its bounds. The following research questions were developed to address these objectives:

1. What is the nature of digital transformation in a South African corporate bank?
2. What is the digital maturity level of a South African corporate bank?
3. What are the enablers of digital transformation in a South African corporate bank?
4. What are the hinderances of digital transformation in a South African corporate bank?

The conclusions related to these research questions describe DT in CIB. In the sections that follow, the outcomes regarding each research question are presented.

6.2.1 *What is the nature of digital transformation in a South African corporate bank?*

CIB has long been an adopter of technology in its operations. Historically, this was mainly to automate business processes and a few interview participants suggested that DT within the bank is still about automating these processes. However, several participants also acknowledged its broader effects on business

models and customer-engagement channels. The history of DT within CIB has seen the bank adopt an inward-looking approach with a focus on business processes and this is something that can still be identified in the mindsets of many participants. However, a new mindset shown by several participants is emerging that views DT as an evolution and not as something that represents an end-state and acknowledges its importance to business strategy.

CIB has used tenets of DT to launch new businesses, products, and services in business transactional banking, retail stockbroking, and retail insurance. After quoting these examples of DT, participants offered a cautious explanation that they were the result of evolving business strategy and not necessarily the outcome of pure digital strategy. This shows that employees in CIB view digital strategy as business strategy, which is congruent with the literature. However, this could also be interpreted as scepticism about the importance of digital strategy. CIB is taking advantage of digital technologies to enter high-volume businesses that are modelled on cost-effective customer-engagement channels and rapid scale. There is a distinct trend of new businesses being reliant on digital technologies that shows their relevance going forward for creating growth. This has not meant that traditional businesses have been isolated from DT. DT of traditional businesses has occurred where a clear shift in customer expectations and competitor activity has called for it.

Most participants agreed that the approach to DT should involve a comprehensive review of businesses, products, business processes, and customer engagement to realise its benefits fully and to avoid the frustration that piece-meal intervention can have in an interconnected environment. However, they highlighted issues of poor coordination; misalignment of strategies, people, and processes; and different IT systems in CIB and in the greater banking group as impediments to the overall implementation of DT.

Interestingly, the development and use of data capabilities dominated the minds of many participants when they considered aspects of DT. There are two important observations to be made from this. First, data capabilities are a single aspect of DT and data capabilities rely on broadscale DT to succeed. CIB may represent a situation where data capabilities are built in isolation to an extent

without the broad lens of DT, leading to lacklustre results. Second, the building of data capabilities may be an enabler of DT that becomes the thread that brings strategy, vision, people, culture, governance, processes, and technology together for DT.

When considering the nature of DT, particular attention must be paid to the general level of complexity and high variation that applies to most aspects of CIB. CIB must maintain personal-engagement channels for segments of customers, products, and services whilst delivering excellent digital experiences for others. Activities such as advisory and investment banking require high levels of personal engagement with customers. Participants explained that corporate banking customers are usually multi-banked, and products are easily commoditised, not least because of regulation. As a result, developing close customer relationships and delivering premium personal service are important differentiators, often requiring personal engagement with customers.

This contrasts with low-value trading and retail activities where customers prefer the control and flexibility they can obtain through digital channels. Generally, for low-value and high-volume transactions, digital channels are fundamental to delivering highly scalable business models at appropriate costs that make these types of products feasible. Digital channels are differentiated for corporate and institutional customers, who prefer to maintain their own unique interfaces whilst connecting to several banks' systems via an API, and retail customers, who require services all the way from the front-end.

With this kind of duality regarding customer preferences, and the differences experienced in volumes and variation across products and services, and within digital channels, it takes astute leadership to maintain the correct mix. Anticipating changing customer expectations, from personal engagement to a digital channel, for example, requires acute sensing capabilities that will trigger parts of DT at appropriate times. Conversely, introducing DT into rigidly set personal-engagement customer channels means that it can be slow to be received. Because variation and customisation are sought in corporate banking, compared to standardisation, which is preferred in retail banking, the value add through human cognitive abilities will remain relevant for a while to come. CIB

has developed competitive advantages in the analogue sense that fit into the sophistication and complexity it deals with. These advantages need to be preserved, and this places a boundary around DT that may not exist to the same extent in other sectors or industries. However, once this boundary is identified, DT can be implemented without restraint in every other part of the business.

Access to customer data is the latest battlefield between corporate banks. Those banks that are better at increasing share of wallet with customers with respect to digital products also have access to more customer data. Using this data to deliver a higher level of customisation in products and services to customers is a competitive advantage that makes DT more compelling.

Cloud services have changed the way that CIB competes with its larger competitors in the IT domain. In the past, it could not keep up with the larger banks' deeper budgets for technology purchases as a result of larger customer bases and better economies of scale. Now that cloud services have democratised access to the latest and best applications delivered at costs proportionate to usage, this has levelled the playing field. In addition, CIB has entered the new era in technology with a leaner and cleaner IT environment than it might otherwise have had, because of its inability to access certain IT products previously. This has positioned it to adopt new technologies faster than its competitors and to develop competitive advantages in trading systems, as one example.

This concludes the outcomes related to the research question about the nature of DT in CIB. In the next section, the outcomes related to the digital maturity of CIB are presented.

6.2.2 *What is the digital maturity level of a South African corporate bank?*

"Digital maturity" refers to the level of specific leadership and digital capabilities that firms generate to take advantage of modern technologies to improve profits, productivity, and overall performance (Westerman et al., 2014). The study's conclusions related to digital maturity are presented under the respective headings of digital and leadership capabilities.

Digital capabilities

Digital capabilities were measured against the following attributes: use of disruptive technologies, digital channels, data analysis, transformation of business models through technology, alignment between IT and business, and digital skills (Westerman et al., 2014). The outcomes related to each of these capabilities are presented below.

CIB has adopted disruptive technologies such as big data analytics and AI in certain parts of its operations. It is selective about the technologies it uses and about their applications. CIB takes every precaution, with technologies having to be justified by an extensive business case or suitable use case. This indicates a level of scepticism about newer technologies and their benefits. CIB is deliberate in the design of its IT architecture, ensuring that it meets current requirements whilst being conducive for future technologies to the best of its knowledge. The bank has adopted the approach of platform architecture for the benefits of modularity, interoperability, minimal integration, minimal maintenance, and the ability to always access the best of breed in terms of technology. This approach is supported by cloud services.

As CIB curates its IT architecture by using its unique technology competence to configure suites of applications to generate banking capabilities that have an inimitable quality about them, the bank is preparing to commercialise these banking capabilities by offering them to third parties as a service. An example of this is payment capabilities. This will be an important transition for CIB as it prepares to advance from being a provider of financial services to also being an enabler by providing banking capabilities as a service. This shows CIB's willingness to become part of a banking ecosystem, as captured by the term "open banking" explained in Chapter 2, and to use strategic partners to fill gaps in its own offerings. The latter route it has followed by partnering with intermediaries and specialist technology providers.

CIB has shown sensing and seizing capabilities in using digital channels, an indicator of digital capabilities, to reach new customers with new products that

otherwise would not have been feasible or scalable. Examples of these products include business transactional banking, retail stockbroking, and retail insurance.

The data captured from the interviews with the participants showed the employees to have strong convictions about creating data capabilities and turning them into a competitive advantage. Their commitment to generating data capabilities is indicated by their decision to embed data analysts in most business units in CIB, including frontline businesses. They have taken this approach so that data analysts will get a real feel for every business model to be able to determine how best to harvest and use data to improve the client experience and business performance. However, the awareness of data driven decision making as a primary consequence of data capabilities, and the competence to generate meaningful data capabilities and fully use data functions form a gap that is still being bridged.

In the arena of digital skills, CIB has been innovative in the way that it has worked with strategic partners in IT recruitment to crowdsource software-development skills and solutions to complement its internal IT resources. It has achieved this by issuing problem statements to the developer community that when solved will attract a prize. However, the data suggested that CIB is overweight in terms of contract resources and there is a need for more permanent resources. This could be an indication of not having quantified the scope and scape of DT through a digital strategy and of a non-committal stance to DT.

Most participants referred to the importance of business units and IT working together to benefit from cross-functional thinking and cross-skilling, to identify opportunities, and to co-develop solutions. However, at least one senior leader mentioned that the CIB business units would appreciate a greater presence from IT in their business environment to benefit from its awareness of the possibilities derived from using technology and to identify applications for technology.

Evaluating CIB's approach to IT architecture, its use of disruptive technologies and appropriate use of digital channels, its convictions about data, and the innovation it has shown in accessing digital skills in South Africa show that it has developed a reasonable level of digital capabilities. However, the scepticism

about digital strategy and digital technologies, the unpreparedness of managers to extract full value from embedded data analysts, the issue of being underweight in terms of permanent technology resources, and the meagre presence of IT within business units weighs on digital capabilities.

In the following section, the outcomes related to leadership capabilities for DT are presented.

Leadership capabilities

Leadership capabilities are indicated by the technology competence of leaders, the strength and visibility of digital strategy and vision, governance protocols, cultural traits that support DT, investment commitment, and change-management procedures (Westerman et al., 2014). The outcomes related to each of these are presented below.

In a business age that is quickly being defined by digital technologies, leadership of any firm must have a reputable level of technology competence to make decisions about such technologies that could impact its strategic direction and competitiveness (Morton & Palfreyman, 2022). The data collected from interview participants showed that most leaders in CIB are financial-product specialists. A few of these leaders were judged by their peers as also being adept at leading in a technology era. However, the data showed that not all leaders are equipped to lead in DT. Importantly, the data was clear that leaders need not necessarily become technology experts to take advantage of digital technologies within their businesses. They need a base-level understanding of technology to identify possibilities within their businesses that can be improved through DT and to be able to make decisions that concern strategic renewal where appropriate. A few of the participants remarked that in the absence of a common digital language and understanding of DT across CIB, it can lead to frustration and poor coordination and can impede decision making.

The data showed that there is a strong bottom-up approach to leadership, strategy, vision, and culture in CIB. There are many positives related to this, such as its suitability for operationalising strategic objectives and the fact that it promotes autonomy, quicker decision making, responsibility, and accountability.

However, the fact that strategic objectives have not been converted into a meaningful top-down strategy and vision, especially about DT, has resulted in the fragmented transformation of interdependent processes, loose interpretations of DT, and unclear expectations from it. Certain leaders expressed a lack of support for DT. According to the data, these shortcomings have not prevented success from DT altogether; however, participants often referred to the patchy nature of DT, which indicates the possible imbalance created by a strong bottom-up approach for DT. When investigating DT in CIB, it was common to discover that there were positive and negative attributes for most characteristics of DT, such as data capabilities, strategy, leadership, and culture. This is further evidence of the need for a balance between top-down and bottom-up approaches and more coordination.

According to the data gathered from participants, a collective digital vision for CIB has not been established. However, it was mentioned that each business unit is aware of where it intends to go to service customers appropriately in the future. This has meant that customers cannot be sufficiently informed about the direction of DT in CIB; a vague perception exists of how CIB fares in DT compared to the rest of the sector; there is a lack of widespread appreciation for how DT can contribute to improved productivity, performance, and profits; and there is muted employee engagement in DT.

CIB operates in a highly regulated banking environment and has robust governance frameworks. However, there is an awareness of not making governance protocols cumbersome to the point that this discourages entrepreneurial thinking. Participants mentioned an organic approach to resource allocation for DT where teams compete for resources according to the commercial promise of their projects. Participants described a robust environment where views are attacked and defended to arrive at appropriate decisions regarding project prioritisation and resource allocation.

Participants described CIB's approach to innovation and experimentation as being conservative; reasons for this included the regulatory environment, mindsets and resource constraints. Because of the autonomy of business units and the competitive nature of the internal environment, the data suggests that

collaboration is something that can be improved. At least one participant described the general culture as insular, stating that examples of external progress and innovation are not leveraged enough.

CIB has been a consistent investor in DT over many years. According to the data, it invests significantly in terms of money, people, and resources in new projects annually. An appreciation of the reality was observed amongst participants, who acknowledged that commitments to stakeholders, investments made in technology to satisfy regulators, and investments made to maintain a stable IT environment had to be pursued before new business initiatives of a digital nature could be considered.

Participants' suggestions regarding change management mainly involved co-developing solutions between IT and business to ensure that solutions are built with the end-user in mind from the beginning, speaking to acceptance and adoption. One example was provided of a senior business leader taking up a digitally linked role. No clear plan was articulated for change management regarding organisational, structural, and cultural changes that might benefit DT.

According to Westerman et al. (2014), firms can fall into one of four categories regarding digital maturity: beginners, fashionistas, conservatives, and digital masters. These are discussed in detail in Chapter 2.

Digital maturity of CIB

The study found that CIB has initiated several digital capabilities linked to digital maturity. However, many of these capabilities are still at the grassroots level and yet to be developed into competitive advantages. There are a few areas from the data linked to leadership capabilities that also appear to need improvement. CIB has shown that it uses modern technologies to generate growth where there is a clear use case; this indicates that it is not over-zealous about adopting new technologies. The data also shows that CIB does not have broad aspirations to set digital benchmarks in its sector and favours a wait and see approach to adopting modern technologies. These are characteristics of beginners. CIB has shown a deliberate approach of setting effective governance protocols that are not overbearing. While it has a track record of consistent investments in DT,

participants questioned the innovative nature and pace of these investments, often describing the investment mindset as conservative. These characteristics represent an aversion to risk by being cautious in its financial commitment to DT that resembles conservatives.

It can be concluded that CIB has built certain meaningful digital and leadership capabilities. It exhibits certain characteristics of beginners and others that resemble conservatives. This establishes the digital maturity level of CIB between beginners and conservatives (see Figure 7).

In the following section, the conclusions related to the research question pertaining to the enablers of DT in CIB are presented.

6.2.3 What are the enablers of digital transformation in a South African corporate bank?

The enablers of DT refer to those qualities that CIB possesses that are beneficial to its DT journey.

Participants indicated that generating data capabilities is a significant driver of DT. The interview findings noted that CIB operates in the knowledge economy and harnessing data will enhance its competitive advantage in delivering precise solutions according to customers' expectations. CIB has encouraged each of its business units to employ the services of a data analyst to build meaningful data capabilities in the context of each business. This indicates the commitment it has to DT and to data capabilities. Data capabilities are heavily dependent on the DT of business processes, customer engagement, and business models. Therefore, building data capabilities is enabling DT in CIB.

Participants explained that detailed top-down strategies have failed in the past because of a lack of ownership, accountability, and responsibility. As a result, a strong bottom-up approach to strategy formulation, leadership, and culture exists in CIB, which is supported by autonomous business units and decentralised decision making. The data shows that digital strategy, which has been established by nature as business strategy in CIB, has become the responsibility

of every business unit. The bottom-up approach has benefitted operational efforts for DT and the data presents many examples of success from this approach. It also shows that most KPIs are linked to unambiguous financial targets that motivate business units to take the correct actions for all aspects of their business, including DT.

Responses from participants show that over the years a concerted effort has been made to reduce the proximity between business units and IT so that they can work together to identify and exploit the advantages obtainable from digital technologies for business outcomes. Many decision-making and discussion forums, such as management and budget committees, have representation from all areas of CIB, including IT. Participants highlighted the importance of obtaining different perspectives in these internal forums.

According to the data, digital channels have been an enabler of DT by allowing CIB to develop digital products for markets that are new to it that otherwise would not have been feasible or scalable. The data shows that CIB has also displayed a measure of disruption by taking traditional business models, in retail insurance, for example, and offering them in a completely digital format.

Data collected through the interviews reveals that CIB's approach to IT architecture has been fundamental to its DT efforts. A key decision was taken to adopt platform architecture from the core. This meant that key banking capabilities, as much as possible, would be built on applications consumed via cloud services. Taking this approach introduced advantages related to interoperability; cost savings; modularity; outsourcing functions such as integration, maintenance, and upgrades; improving return on investment; and minimising the risk of technology obsolescence. CIB could commercialise its unique configuration of applications for banking capabilities through banking-as-service products for third parties.

Cloud services have been an important component of CIB's approach to IT architecture. In the past, it struggled to keep up with larger competitors that had greater IT capabilities. According to participants, because cloud services have democratised access to the latest digital technologies at proportionate costs

related to usage, they have levelled the playing field. As a result, CIB has become the market leader in certain digitally led trading products. Participants placed an emphasis on the value that APIs have provided by allowing customers to connect to CIB, and for it to connect to strategic third parties to fulfil gaps in its offering.

Banking is a highly regulated industry (Krasonikolakis et al., 2020). Participants expressed that regulatory bodies and changes in regulation can also be a catalyst for DT when they either prescribe digital methods for managing and reporting risk or when analogue solutions to satisfy sophisticated regulations are not feasible.

When looking at innovation, participants described corporate banking as characteristically having customers that are multi-banked and products that are generally commoditised. They noted that this diminishes the value of the first-mover advantage prevalent in some other industries. As a result, participants showed that innovation in CIB generally focuses on launching businesses successfully and not necessarily on being the first to market. Participants pointed to the calibre of people who are entrepreneurial and can launch businesses successfully as a differentiator. Recently, most new businesses that have been launched could be described as digitally led.

Regarding change management, participants viewed the co-development of digital solutions between business and IT as an antecedent for the acceptance and adoption of new technologies and systems. Further to this, the data shows that there is a willingness by senior business leaders to take up key roles related to DT.

The data shows that governance protocols provide oversight for allocating resources, prioritising projects, and regulating the use of technologies with respect to duplication and safety. Participants emphasised that protocols are designed to be appropriate and not cumbersome. Decision structures related to regulatory concerns are formal in nature, whereas those related to resource allocation, for example, will often be decided less formally through robust debate between competing teams. Participants mentioned that this approach of proportionate governance protocols speeds up decision making.

Table 8: Enablers of digital transformation

Summary of the enablers of digital transformation in CIB:

- Generating data capabilities that prompt digital transformation
- Embedding data analysts in business units
- Using bottom-up business strategies for digital transformation and decentralised decision making that have been beneficial to operationalising DT
- Reducing the proximity between IT and business units by including IT in strategic business discussions
- Using digital channels to enter new markets and make new products possible that would not otherwise have been feasible
- Making use of cloud services
- Adopting platform architecture
- Following regulatory changes that have demanded digital transformation
- Employing talent to launch digital businesses successfully
- Co-developing IT solutions by business units and IT to improve acceptance and adoption
- Developing appropriate governance protocols that have minimal negative impact on the speed of launching new products and services

This concludes the outcomes related to the enablers of DT in CIB. In the following section, the outcomes related to the hinderances of DT in CIB are presented.

6.2.4 *What are the hinderances of digital transformation in a South African corporate bank?*

The hinderances of DT are those factors that impede the progress of DT or those that are important for the success of DT but that either do not exist or require vast improvement.

The bottom-up approach to strategy, vision, and culture in CIB has been beneficial for many reasons that were discussed in the previous section. However, according to the data and the literature, there is a need for some aspects of strategy to be dealt with from the top down. These aspects relate mainly to support and infrastructure for management, and common aspects such as guidelines for collaboration, prioritisation of projects, and change management. Participants were clear that CIB and the larger banking group have built appropriate governance structures that apply from the top down.

Sentiment suggested that the strategic objectives provided by CIB are economical in the direction that they provide. This sentiment suggested that these strategic objectives need to be expanded to provide a guide for DT, especially for teams that do not face an immediate threat from DT. A basic top-down digital strategy will ensure that teams have a similar interpretation of DT, are going in the same direction, and, importantly, that none of them are left behind. The data is clear that the application of DT will differ according to the individual circumstances of each business unit. This will help with coordination of DT, which has been established by the data and the literature as something that must be cognisant of the entire system, especially in the case of CIB and the greater banking group, because of the inherent interdependencies. This will guard against fragmentation where processes are part analogue and part digital, which was described as frustrating.

The data is clear that both a bottom-up approach and a top-down approach are useful for different objectives, implying that this is a case for deploying not one or the other, but both as required.

Participants mentioned that there was no collective digital vision that could be articulated for CIB. The data also suggests that a few business units have a clear

idea of how they want to serve their customers in the future. In this study, the assessment of CIB's digital vision was first undertaken as part of determining CIB's digital maturity, as discussed in Section 6.2.2 above. The salient points from that assessment are also relevant to this outcome and are recaptured here. The absence of a collective digital vision has meant that customers cannot be sufficiently informed about the direction of DT in CIB; a vague perception exists of how CIB fares in DT compared to the rest of its sector; there is a lack of widespread appreciation of how DT can contribute to improved productivity, performance, and profits; and there is untapped value in terms of employee engagement for DT.

Participants described the appetite for experimentation and innovation in CIB as conservative. At least one participant suggested that new initiatives launched by CIB are often sure bets and are quantifiable from a return-on-investment perspective. Another participant described CIB's approach to investing as making significant financial investments in business models that show the promise of thousands of clients from the outset. This participant suggested that a balance needs to be struck and certain new initiatives should be attempted with minimum investment and only a reasonable expectation of success, which is a call for greater experimentation.

However, participants also provided data that points to consistent and significant investments in DT and digital businesses every year. A few of these have been disruptive by nature, such as the life insurer launched by CIB that participants said may have been the first fully digital offering in their market. Participants referred to an entrepreneurial culture in CIB and mentioned that there is seldom a shortage of good ideas. However, there are natural constraints and not all of these ideas can be implemented. This may explain, in part, the description given by many participants of the conservative approach by CIB to experimentation and innovation. However, the data is also clear that there is room for CIB to be more inclined towards experimentation and for taking a risk-based approach to it.

The participants strongly expressed the view that CIB must improve its agility in terms of delivering projects within reasonable timeframes. One of the reasons provided for this lack of agility is capacity constraints, not least within the IT

environment. As the literature showed, IT must often perform the arduous tasks of maintaining a stable IT environment that is crucial for banks, and it is fundamental to operationalising DT. This duality requires different mindsets, which can negatively impact DT. The other reason for slower-than-expected project delivery may relate to governance structures that focus on alignment, transparency, accountability, responsibility, measurement, and reporting for project rollouts.

Data gathered from the interviews showed that there are cases of misalignment between CIB and the larger group in terms of DT, which can hold it back. Participants mentioned, as the reasons for misalignment, that the structure, people, and processes are sometimes different, and priorities differ. This may also reflect a weak overall firm-wide digital strategy that does not take these issues into account. In terms of collaboration, there are areas that can be improved related to extracting value from cross-functional teams and knowledge sharing between those business units that have developed strong competencies for DT and those that are beginning their DT journey.

Participants suggested that the lack of a common language or understanding of DT across CIB, especially amongst leaders, can slow decision making in terms of DT. Participants suggested that curated learning programmes, especially about the first principles of DT, will assist to create a base-level digital literacy to help identify and exploit opportunities from DT across the board. In addition, it was mentioned that business leaders need to develop a cursory understanding of the digital domain and, similarly, IT practitioners need to understand the various business models. Participants expressed a need for CIB to be more outward looking, to incorporate outside perspectives and those of experts, and to generally learn from other industries for DT.

KPIs for CIB are mainly based on financial metrics and there are no specific KPIs for DT. Participants explained that financial metrics force business units and employees to optimise all aspects of business, including DT. However, the data also shows that DT has been patchy and that agility for project delivery, for example, has been lacking. DT requires a long-term view and financial targets can sometimes encourage short-term prioritisation. Participants mentioned that

KPIs are being reviewed with the intention of promoting and improving specific capabilities for DT.

CIB, and the greater banking group, as shown in the data, places a huge emphasis on data capabilities. Participants acknowledged that this is a journey and, whilst they are not where they would like to be, CIB has made much progress in a relatively short period of time. Participants' responses show that data is not always accessible when needed, a large degree of manual intervention can still be required to generate meaningful insights, and the accuracy and the currency of data can be improved.

Table 9: Hinderances of digital transformation

Summary of the hinderances of digital transformation in CIB:

- The absence of an appropriate top-down business strategy for digital transformation has meant that direction, support, and common infrastructure for DT can be lacking.
- Strategic objectives are economical in the direction that they provide.
- The absence of a collective digital vision and being disproportionately inward looking hinder digital transformation.
- There is a conservative appetite for experimentation and innovation.
- The agility in terms of delivering digital transformation projects can be described as average.
- CIB and the greater banking group are misaligned regarding digital transformation.
- A common level of digital literacy and language across CIB is lacking.
- KPIs are mainly focused on financial metrics without specific KPIs that promote other factors required for DT.
- Manual intervention is required to generate meaningful insights from data capabilities.

6.3 Contributions to research

Retail banks have been the prime subjects of research in the field of DT in banking (Bemmann & Karthik, 2018; Krasonikolakis, et al., 2020; Pramanik et al., 2019; Selimovic et al., 2021). Corporate banks have a different nature from retail banks because they are primarily business-to-business outfits; their customers expect greater degrees of personal engagement; and they experience vast ranges of volume and variation in their offerings of products and services, and customers.

To the best of the researcher's knowledge, little research has been conducted about DT in corporate banking, and in the literature survey for this study no specific research related to a corporate bank in South Africa could be located. The study reported on in this research report makes an empirical contribution by observing DT, a phenomenon that is still being fully understood, in a new setting of the South African corporate bank. Further to this, by taking the deductive approach, which itself is not unique, it has validated the conceptual framework presented in Chapter 2. The data collected from interviews did not yield new noteworthy categories or themes when compared to the conceptual framework. However, it did present noteworthy sub-themes and insights compared to the literature review conducted in Chapter 2 about DT in corporate banking in South Africa and CIB in particular (see Table 7).

This research study has the potential to contribute to future research that pursues a generalisable theoretical framework by using observations made in this unique setting. Whilst South Africa may be considered a developing country, it has a stable and sophisticated banking system and corporate market that make these findings potentially useful, even in the developed world.

Because the researcher was an employee of CIB at the time of publishing this study, he was well positioned to choose a purposive sample, gain access to all levels of employees including executives, and receive generous amounts of time from participants to conduct interviews that generated rich data and benefitted this study immensely.

Besides information that surfaced with regard to each research question, specific information that characterises corporate banking emerged and is summarised below. This can also be viewed under Figure 7.

- Corporate banking customers are characterised as having relationships with multiple corporate banks which impacts customer loyalty.
- It is common for products in corporate banking to be commoditised. In addition, the first mover advantage for launching new products and services is not as prevalent. One of the reasons for this is the standardisation of products through high levels of regulation.
- Digital channels allow CIB to compete in retail customer segments because of their suitability to high-volume products, lower costs and scalability.
- Penetration with regard to digital products is important for access to customer data, implying that digital share of wallet is crucial.
- Leaders in CIB are generally financial product specialists with limited training on the impact that 4IR technologies can have on businesses.
- Teams in CIB compete on a commercial basis to determine the prioritisation of IT projects and resource allocation.
- The strong bottom-up and autonomous nature in CIB can pose challenges for collaboration.
- In CIB, KPIs are mainly financial in nature.
- Regulatory compliance can force digital transformation and this kind of transformation is prioritised ahead of business' digital initiatives.
- CIB operates in a complex business environment that in many ways thrives on personal engagement and human cognitive abilities.

6.4 Recommendations

According to the literature, a top-down approach to strategy, vision, leadership, and culture is effective for formulating and communicating a common strategy. The bottom-up approach is effective for operationalising this strategy. The data shows that the bottom-up approach has been effective to an extent and suits the calibre and capabilities that business units have in CIB. The culture is one of

decentralised decision making and minimum interference from executive leaders has served CIB well, according to participants. However, there are certain aspects of a top-down strategy and vision related to people, culture, processes, governance, and technology that would assist to minimise a few of the hinderances of DT.

- It is recommended that CIB adopts an appropriate top-down business strategy for DT to provide common infrastructure, direction and guidance without losing the benefits of the bottom-up approach it showed in the data.
- This research study also recommends the formulation of a unified digital vision for CIB that borrows from the digital visions that many business units currently have. This will assist to communicate the results expected from DT, engage employees and customers, motivate and inspire behaviours that are advantageous for DT, establish a benchmark against competitors that will be a yardstick for measuring progress, and establish a clear value proposition for DT that will assist to obtain buy-in from all stakeholders, including customers.

CIB operates in a highly regulated industry, and it has an entrepreneurial workforce, as indicated by the data. Financial and resource constraints apply to innovation as they do to most aspects of its business. Being innovative in deal structuring is a competitive advantage for CIB, and it has made significant investments in digital innovation to date, as shown in the data. However, many participants still expressed frustration at what they described as a narrow interpretation of innovation and a conservative approach to it and experimentation.

- In line with this, this study recommends that CIB reviews its approach to innovation to see if there are ways of experimenting more through proofs of concept, pilot projects, and minimum viable propositions. This will depend on entrepreneurial thinking to manage investment budgets and resources for it, as discussed in Chapter 5. This could have a positive impact on employee engagement and talent acquisition.

Agility in terms of delivering projects was another frustration that was a common concern expressed by the participants. One of the reasons provided for this lack of agility was capacity constraints in IT.

- This study recommends creating a bimodal structure for IT that has two separate focuses: maintaining a stable IT environment and focusing on DT. This bimodal approach could apply to governance protocols, structure, people's mindsets, and KPIs.

The data showed misalignment sometimes between CIB and the greater banking group in terms of prioritisation, people, processes, and technology. Although, the greater banking group fell outside the scope of this study,

- The study recommends that a review is undertaken of the firm-wide digital strategy, with the aim of addressing these misalignment issues.

Creating a common language and understanding around digital technologies was suggested by participants to improve communication across CIB, decision making, and opportunity identification for DT. The data suggested that not everyone had the resources to seek out this knowledge for themselves. A common language or DT will assist with knowledge sharing and establishing best practices in CIB.

- This study recommends curating specific learning programmes that are based on the first principles of DT, as suggested by a participant, and delivered in convenient formats by credible experts, and leaders and employees who have experienced success with DT. Because DT relies on a mindset change, as discussed in the literature, this could be an important step.

KPIs that are specific for DT do not currently exist in CIB, according to participants.

- It is recommended that once a common digital strategy is established, KPIs that relate to the outcomes expected from DT should be developed

to assist with accountability, measurability, and reporting. This may also assist in agility and reliability in terms of deliverables.

As discussed, DT is a relatively new discipline as evidenced by a lack of a theoretical framework. The data showed that CIB can become inwardly looking and miss opportunities for innovation because of it.

- This study recommends supplementing internal knowledge by hiring experts in roles related to DT, creating partnerships with universities and technology companies, and generally adopting a platform mindset to knowledge. This is imperative for a discipline like DT, which is still being worked out across industries and sectors and where companies do not possess all the knowledge in-house.

Data has shown that most new businesses launched recently in CIB have been based on digital technologies and many traditional businesses are undergoing a strategic renewal related to digital technologies, which shows its importance. CIB's main motive is financial performance, as shown by the study. However, DT is also becoming an important requirement for business outcomes. DT by its nature, as covered in the literature, relies on every part of a firm or division working together.

- Therefore, this study recommends that CIB considers making an executive appointment or developing a function within the office of the Head of CIB to bring together the various elements of DT, such as strategy, vision, people, culture, processes, governance, technology, and capabilities to benefit from a systems approach to DT. Building strong leadership and digital capabilities in CIB, which it is doing and improving, is already proving to be invaluable.

6.5 Suggestions for further research

As established in Chapter 1, studies related to DT in banking have been skewed towards retail banks. In addition, most studies were conducted outside of the African continent. This study aimed to research DT within a South African

corporate bank, which was identified as a gap in the literature. This study is hopefully a good basis from which to explore further aspects of DT in corporate banking and elsewhere.

The following suggestions are made for future research:

1. Because of the bottom-up approach taken in CIB with respect to strategy formulation, it may be worthwhile exploring DT in-depth at the level of a single business unit or across a few business units to investigate further the enablers and hinderances from a strictly bottom-up approach to DT.
2. CIB is part of a greater banking group and there are interdependencies for DT between the two that were identified in the data. Therefore, a study on DT at the level of the banking group will be a valuable resource, not least because it will assess the firm-wide approach to DT and digital strategy.
3. As mentioned, DT in corporate banking in South Africa has not been a focus of research. Also, there are limitations to research that follows the case-study strategy of enquiry and focuses on a single case, as this study has. Investigating the enablers and hinderances of DT across several corporate banks in South Africa is bound to produce further insights that could even counter the findings of this study and improve generalisability.
4. Another suggested area of study is to compare DT of corporate banks in South Africa to those in other jurisdictions.
5. The effects of regulation on innovation and experimentation related to DT within corporate banks in South Africa could be a worthwhile area of focus that could provide valuable insights for incumbents, regulators and practitioners alike.

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APPENDIX A: Interview schedule

Preliminary process:

Interviews will begin with a brief introduction of the interviewer, the research objectives, and the participant.

Question 1 [Digital focus]:

Have digital technologies altered the expectations of customers? Please elaborate.

Would you say the customer experience delivered by CIB is shaped by customer's expectations or by CIB's systems, processes, rules, and capabilities?

Checkpoints/follow-up questions:

1. Have you observed customer preferences shifting towards digital channels?
2. Do they expect personalised products and services?
3. How is your business or CIB as a division responding to this?
4. Are customers more price inelastic in a digitally connected world?
5. Is it easier for them to have multiple banking relationships and to switch?
6. Where would you say CIB aims to position itself in the market in terms of digital innovation; as a leader (competitive advantage), in the middle or doing just enough to keep up with the competition? Please explain your view.

Please give your view of CIB's website and social media presence.

Question 2 [Culture, digital innovation, disruptive technology enablers]:

How would you describe CIB's culture in respect innovation?

Does it take advantage of digital technologies when innovating?

Checkpoints/follow-up questions:

1. Is there room for experimentation and taking risks?
2. Are you aware of examples where CIB benefitted from external strategic collaborations for digital transformation? Is this something that should be encouraged?
3. Please describe your view of collaboration within the organisation when it comes to digital innovation (with other businesses, with IT).

Do you have recommendations to improve the innovation and entrepreneurial capabilities of CIB with respect to digital technologies?

Question 3 [Leadership, change management]:

Please describe what you understand to be CIB's digital vision.

(There is the possibility of participants responding that CIB doesn't have a digital vision; in that instance, ask if CIB would benefit from formulating a digital vision and what should it entail)

Are leaders sufficiently equipped to formulate a digital vision and do they have a grasp of digital technologies?

Checkpoints/follow-up questions:

1. For executives: does the board comprise sufficient skills to advise and sponsor digital transformation?
2. Are leaders aware of how digital transformation can support their business strategies?
3. Are they changing employee mindsets and developing skillsets for digital innovation?
4. Are they implementing organisational design changes (integrating divisions, people, resources, processes, and business models) to implement digital innovation?

5. How would you describe leaders' capabilities to introduce new systems and technologies to their teams? (Change management)

Question 4 [Digital strategy, investment, platform business models]:

Please describe your understanding of digital transformation.

Please describe what you understand to be the digital strategy of CIB.

Checkpoints/follow-up questions:

1. Would you say there is meaningful financial commitment to digital strategy? Or is there a concern around costs from innovation infringing on profit targets?
2. Is digital strategy seen mainly as a tool to drive efficiencies in processes and cost saving or to generate additional revenue?
3. Would you describe the digital strategy to be more focused on quick and easy wins or on bold steps?
4. Do KPI's include digital transformation targets? What does this entail?
5. Do employees often submit opportunities for digital innovation? Please explain.
6. Are there examples in CIB of platform business models or opportunities that you are aware of?

Question 5 [Digital skills, digital service mastery, governance]:

How would you describe CIB's technology capability with regards to, systems, skills, and digital channels?

In your view is digital transformation an IT issue or a business issue?

Checkpoints/follow-up questions:

1. Please describe the relationship between IT and business.
2. Is the current core IT infrastructure conducive to taking advantage of cutting edge and future looking technologies?

3. Please describe digital literacy within CIB.
4. Please describe the process for leaders to obtain sign-off to embark on digital or IT investments.
5. Are leaders sufficiently empowered to make decisions and invest in digital innovation?
6. Please describe the governance protocols to coordinate digital innovation across CIB, to allocate IT resources and prioritise projects.
7. Does CIB outsource certain IT functionality, or does it prefer to build them in-house?
8. Has there been strategic tech-based acquisitions to bolster digital capabilities?
9. Would you say that CIB is agile?

Question 6 [Disruptive technology enablers]:

Please describe how data is being leveraged in CIB.

Please describe the conditions of data repositories according to your knowledge; are they accurate, current, and can be accessed in a format that is useful?

1. How do you use data to make decisions?
2. How would you describe the skills within CIB to process and analyse data?
3. Are there challenges in your business that could be solved if you had access to the right data?
4. Is there a single, integrated end-to-end view of customers and is this a useful tool to have?
5. How would you describe CIB's appetite to use disruptive technologies such as AI, big data analytics, etc. to transform client experiences, business models and business processes?

APPENDIX B: Email invitation to participants

Dear Sir/Madam,

I am a front-line consultant in CIB and a Master of Management candidate at Wits Business School. I am conducting research that aims to assess the digital transformation journey and the digital maturity level in CIB. One of the objectives of this case study is to explore the enablers and hinderances of digital transformation in CIB.

This is an area of research that is not fully understood and will benefit immensely from a diverse set of perspectives. At the core of this study are one-on-one, face-to-face interviews that I am conducting with select participants. Interviews will comprise semi-structured questions that allow for flexibility in responses and will take approximately 1.5 hours to complete.

Names of participants will be anonymised for privacy and confidentiality. The treatment of interview material will adhere to strict protocols put in place by the school's ethics committee.

I would sincerely appreciate your assistance in my research that will hopefully be of value to CIB in the end.

Regards,

Jared Pillay

Student number: 2288443

Email: 2288443@students.wits.ac.za

Supervisor: Dr Manessah Alagbaoso

Email: Obinali.Alagbaoso@wits.co.za

APPENDIX C: Participant information sheet



Dear Sir / Madam,

My name is Jared Pillay. I am studying a Master of Management degree in the field of Digital Business at the Faculty of Commerce, Law, and Management at the University of the Witwatersrand. My supervisor is Dr Manessah Alagbaoso. The purpose of this study is to explore the hinderances and enablers of digital transformation in a South African corporate bank through the lived experience of a cross section of its leaders and employees. The study title is, "Enablers and Hinderances of digital transformation in a South African corporate bank".

I am inviting you to take part in an interview. If you decide to take part, the duration of your participation in this research study will be approximately 90-minutes. The interview will take place in person at your offices at a time to be confirmed with you should you wish to participate.

With your permission, I would like to audio record the interview. This data will be stored in my personal computer that is password protected. Only the researcher will have access to the data.

The interview will be anonymous. When I share the results of the research study, I will not include your name or anything else that could identify you.

If you decide to take part in the research study, it should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You do not have to answer any questions if you do not want to. You will not get any direct benefits if you choose to join the research study. You will not lose any services, benefits, or rights you would normally have if you decided not to join. Taking part in the research study will not cost you anything. You will not be paid for being in this research study.

The risks for this research study are no more than what happens in everyday life.

This research study will be written up as a dissertation. The report will be available on the university library website. If you would like to receive a summary of this report, I will be happy to send it to you.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisor on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Regards,

Jared Pillay

Student number: 2288443

Email: 2288443@students.wits.ac.za

Supervisor: Dr Manessah Alagbaoso

Email: Obinali.Alagbaoso@wits.co.za

APPENDIX D: Consent form

Consent for Interview

Title of project: Enablers and Hinderances of digital transformation in a South African corporate bank

Student number: 2288443

Email: 2288443@students.wits.ac.za

Supervisor: Dr Manessah Alagbaoso

Email: Obinali.Alagbaoso@wits.co.za

I,, agree to participate in this research project.

I agree to the following: (Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that I can volunteer to take part in the study	YES	NO
I agree that the interview will be audio recorded	YES	NO
I agree that direct quotations from my interview may be used by the researcher in their dissertation	YES	NO
I agree that my participation will remain anonymous (my name will not be used by the researcher) in their research report	YES	NO

..... (signature)

..... (name of participant)

..... (date)