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Large-scale agile transformations: experiences in the South African banking industry

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business

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ABSTRACT

The aim of this qualitative research study is to capture and derive meaning from the lived experiences of leaders implementing large-scale agile transformations in the SA banking industry. The study conducted was based on three research objectives, namely: 1) To explore the process of implementing large-scale agile transformations in the SA banking industry; 2) To explore the challenges of implementing large-scale agile transformations; and 3) To explore the success factors of implementing large-scale agile transformations.

Through the purposive sampling technique, 11 semi-structured one-on-one interviews were conducted with senior managers, department heads, functional heads and divisional executives steering business and technology areas within the SA banks. At the time of the interviews, each participant had been exposed to the agile transformation journey of at least one of the top 4 banks. Some participants also had agile experience in other sectors such as management consulting, telecoms, retail, technology start-ups, the health sector, and the broader financial services industry.

The study found that the agile transformation journeys of the top 4 SA banks were well underway and earning the incumbents some benefit in the form of a reduction in the time taken to land technical solutions, as well as improvements in customer experience. The study confirmed that many of the challenges and success factors of large-scale agile transformations previously documented in literature continue to be prevalent in, and relevant to the SA banking industry. In addition to these, the study found that the prioritisation of technical delivery over innovation was an emerging challenge in the industry. This was further highlighted by participants emphasising the need to ensure a much firmer relationship between the banks' strategic intent and the technical delivery achieved through agile – the study found this to be a critical success factor in implementing large-scale agile transformations.

While progress is being made, much more remains to be done for the SA banks to realise the full potential of their agile transformations. It is recommended that the incumbents shift their focus from speed through agile, towards greater prioritisation of innovation that solves for the less tangible needs of their customers.

KEYWORDS

Agile transformations, Large-scale agile, SA banking industry, Digital transformation, challenges, success factors

DECLARATION

I, Khuselwa Asanda Wayi, declare that this research report is my own work. It has not been submitted for examination or any degree in any other university. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business at Wits Business School, University of Witwatersrand, Johannesburg, South Africa. I further declare that I have properly acknowledged all sources of information used in this study.



……..

Khuselwa Asanda Wayi

Signed at Johannesburg

On the 21st day of February 2023

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First, I would like to thank my supervisor, Dr Euphemia Godspower-Akpomiemie, for your patience and support through this process.

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Last, I must thank my parents - Nonkululeko Wayi and the late Mbuyiseli Wayi. Your example has been the inspiration behind this and all previous dreams that I have been blessed to see come to fruition. My only hope is that I may be of similar example to my daughter Ziyanda, so that she too may fearlessly pursue whatever dreams she grows up to have. Ndiyabulela Ngaleka, ndiyabulela MaNkomo.

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LIST OF ACRONYMS

AT	Agile Transformation
CM	Change Management
COE	Centre of Excellence
COP	Centre of Practise
CVP	Client Value Proposition
CX	Customer Experience
DAD	Disciplined Agile Delivery
DT	Digital Transformation
IPA	Interpretative Phenomenological Analysis
LeSS	Large-Scale Scrum
NPS	Net Promoter Score
PMO	Project Management Office
SA	South Africa(n)
SA-csi	South African Customer Satisfaction Index
SAFe	Scaled Agile Framework®
SDLC	Software Development Lifecycle
TA	Technology Adoption
WFH	Work From Home

CHAPTER 1. INTRODUCTION

1.1 Purpose of the study

The purpose of this qualitative study is to explore and derive meaning from the lived experiences of leaders implementing large-scale agile transformations in the South African (SA) banking industry. From the perspective of these leaders, the study also aims to explore the process of large-scale agile transformations in the industry, including the challenges and success factors associated with the transformation.

1.2 Context of the study

Digital disruption together with frequently evolving customer needs, behaviours, and expectations present both challenges and opportunities for organisations across industries and geographic locations. Globally, the financial services industry is ranked within the top five industries most vulnerable to digital disruption (Shan et al., 2017). Other industries in the top five include media and entertainment, technology products as well as services, retail, and telecommunications (Shan et al., 2017). South Africa's banking industry is not sheltered from this disruption either (McKinsey & Company, 2019). In a study on the exposure of the SA economy to digital disruption, Armstrong (2018) confirms this, ranking banking as one of the industries in SA experiencing elevated levels of exposure to disruption.

As the SA banking industry continues to experience unprecedented rates and levels of change, competition within this industry is further intensified by the arrival of non-traditional competitors which include digital players such as Tyme Bank, Discovery Bank and Bank Zero (McKinsey & Company, 2019; PwC, 2018). These branchless new entrants have low-cost operating models and bring with them digital solutions that are unhampered by legacy systems, enabling them to pose a credible threat to incumbent banks (PwC, 2017).

To grow or even retain current market share, incumbents such as the FirstRand Group (FNB), Standard Bank Group, Nedbank Group and ABSA Group must find ways to become increasingly more creative, agile, innovative, and customer-centric (PwC, 2018; Mako, 2019). One of the ways in which these incumbents can achieve this is by accelerating their digital transformation journeys through incorporating agile transformation into their business strategies (PwC, 2017).

An enhanced understanding of the process, challenges, and success factors of large-scale agile transformations may aid players in the banking industry with implementing effective and sustainable agile strategies for continued business growth in this digital era.

1.3 Research problem

To compete in the digital era, organisations must incorporate customer-centricity into their business models, as well as become more responsive and adaptive to the environments within which they operate. The benefits of agile methodologies in this regard are well understood and documented, particularly in the software development space.

Agile methodologies were initially introduced in individual teams, small organisations, and in small software development projects (Dikert et al., 2016; Mako, 2019; Mudarikwa & Grace, 2018; Paasivaara et al., 2018). Where successfully implemented, agile software development has been known to improve efficiency, customer and employee satisfaction, as well as reduce time to market (Paasivaara et al., 2018; Mudarikwa & Grace, 2018; Dikert et al., 2016). The benefits realised in these settings have garnered widespread attention, driving agile adoption in many larger software development projects, and in non-technology departments and organisations (Paasivaara et al., 2018; Mako, 2019).

Agile adoption in the SA market is also prevalent, particularly in industries such as financial services, media, retail, and the health sector (Mudarikwa & Grace, 2018). Although adoption of agile in banking is growing, agile principles are often misaligned to the legacy management practices of these large, well-established

corporates (Mako, 2019; Mudarikwa & Grace, 2018). This misalignment, together with the organisational size, and the highly regulated and risk-adverse nature of the industry poses many challenges in the agile transformation journey of SA banks.

Numerous studies on the challenges and success factors of agile in general have been conducted, however, academic research specifically into large-scale agile adoption in well-established organisations is limited (Mudarikwa & Grace, 2018; Dikert et al., 2016; Mako, 2019; Paasivaara et al., 2018). In addition, the agile transformation case studies available in literature tend to be focused on individual organisations rather than attempting to provide a sectoral view.

This qualitative study explores the process, challenges, and success factors of implementing large-scale agile transformations from the perspective of leaders in the SA banking industry. The study looks to build on the understanding of large-scale agile transformation through exploring the experiences of the leaders whose core responsibilities include advocating for, enabling, and driving digital transformation within large organisations. This research further aims to add to the academic knowledge base through contributing to the process of marrying current literature on large-scale agile transformations with insights from industry leaders experiencing the change. Finally, the study looks to highlight agile transformation considerations for agile project teams and business implementation teams in the SA banking industry.

1.4 Research objectives

The main objective of the study is to explore the process, challenges, and success factors of implementing large-scale agile transformations in the SA banking industry from the perspective of its leaders.

This aim is divided into three research objectives used to guide the study, namely:

1. To explore the process of implementing large-scale agile transformations in the SA banking industry

2. To explore the challenges of implementing large-scale agile transformations
3. To explore the success factors of implementing large-scale agile transformations

1.5 Significance of the study

As many large corporates attempt the agile transformation journey, an enhanced conceptual and practical understanding of the process, challenges, and success factors of large-scale agile transformations may aid these organisations with implementing more effective and sustainable agile transformations.

To date, academic literature has provided limited guidance and support to large corporates undergoing agile transformations (Dikert et al., 2016). By gathering insights from industry leaders experiencing agile transformations, the study aims to provide leaders and practitioners in the SA banking industry with a view of what the common challenges that need to be prepared for are; and what success factors should be considered in formulating transformation strategies and roadmaps. The study also looks to highlight some practical implications for software development and business teams within these organisations.

1.6 Delimitations of the study

The study explores agile transformation in large corporates operating in the SA banking industry. Specifically, the study was focused on South Africa's top 4 banks namely, FNB, Standard Bank, Nedbank, and ABSA; other players in the SA banking industry are not included in the research study. The implication of centring the study on experiences in SA's top 4 banks is that the study can be seen to be contributing to the beginnings of creating a sectoral view of agile transformation based on lived experiences in the SA banking industry.

The study focused on banking industry leaders with experience in agile transformations. At the time of the study, the leaders must have undergone or be undergoing agile transformations in their respective organisations. Specifically, the study centred on the insights of middle managers whose core responsibilities

include advocating for, enabling and driving transformation within their organisations. In the SA banking industry, the middle management layer typically consists of senior managers, department heads, functional heads, and divisional executives. Other management layers were not included in the research study. The implications here are that the experiences of this management level can in future studies be compared to the experiences of other more senior and/or junior organisational levels.

The study did not investigate corporates that have fully transformed themselves into agile organisations but was instead centred on the four banks as well-established corporates that have introduced agile methodologies into their organisations at a large-scale.

1.7 Definition of terms

Below are the definitions of terms and key concepts as they pertain to this research study.

1.7.1 *Agile*

Agile is an umbrella term used to describe various sets of software development and project management frameworks and practices that have been developed based on the values and principles described in the Agile Manifesto (Agile Alliance, 2020). These frameworks and practices aim to optimise software development through emphasising customer-centricity, face-to-face collaboration, as well as incremental and adaptive solution delivery (Agile Alliance, 2020).

1.7.2 *Agile project team*

An agile project team or squad is an *"autonomous, cross-functional and self-organising team"* that collaborates to deliver customer-centric software solutions (Pountney, 2017). The main aim of the team is to iteratively create customer value and deliver enhanced value to the customer at regular, pre-determined intervals (Mako, 2019; Mudarikwa & Grace, 2018).

1.7.3 *Large-scale agile*

There is no commonly accepted definition of what is considered a large-scale agile undertaking (Conboy & Carroll, 2019). Several factors can be considered when determining the size of an agile project or initiative, these include project duration, number of product features, project budget and even the number of lines of written code (Dikert et al., 2016).

Many researchers and practitioners also consider the number and/or size of collaboration teams as an indicator of the size of the agile initiative. Mako (2019) considers an organisation with ten or more agile teams as large-scale. Kalenda et al. (2018) suggests that this is a *"very large-scale"* agile undertaking, and rather sees an organisation with between two and nine teams as undertaking large agile transformation. Dikert et al. (2016) also considers two to nine collaboration teams as large-scale, while Paasivaara et al. (2018) suggests large-scale agile transformations begins at six or more teams. Paasivaara et al., (2018) further suggest that teams of 50 or more individuals constitutes a large-scale agile undertaking.

For the purposes of this research study, a large-scale agile transformation is considered the introduction of agile methodologies into multiple departments within a large corporate and/or multiple segments within a large corporate and/or multiple collaboration teams across a large organisation.

1.7.4 *Agile transformations*

The traditional System Development Life Cycle (SDLC), commonly referred to as the *"Waterfall approach"* is a highly structured and sequential project management process which is characterised by substantial upfront planning, comprehensive requirements documentation and strict governance, approval and change management gates and measures (Dikert et al., 2016; Johnston & Gill, 2017; Mako, 2019). Agile is an alternative to the Waterfall method that, due to its iterative and incremental approach, is more suited to rapidly changing environments as well as complex problem-solving where solutions are initially unclear (Rigby et al., 2018).

To derive maximum value from agile methods, organisations need to move from *"doing"* agile, towards transforming themselves into agile organisations (McKinsey & Company, 2019). Agile transformation (AT) is therefore not limited to a change in software development and delivery methods, but instead includes changes in business operations, operating models, culture, ways of working and practices across a function, business unit, or the organisation as a whole (Johnston & Gill, 2017; Mako, 2019). Agile transformation can therefore be seen as a part of an organisation's digital transformation strategy.

1.7.5 *Digital transformation*

Digital transformation (DT) is the process through which an organisation moves from its current level of digital maturity to a different and superior level of digital maturity (Terrar, 2015). Westerman et al. (2012, 2014) and Buvat et al. (2018) suggest that there are two dimensions of digital maturity, namely 1) digital capabilities and 2) leadership capabilities.

Digital capabilities refer to the level of investment an organisation puts into leveraging technology to transform the way an organisation interacts with its customers; the operational efficiency of its internal processes; and the effectiveness of its business models (Buvat, et al., 2018; Westerman, et al., 2012, 2014).

Leadership capabilities refer to how far along in the process of creating the conditions required to drive organisational transformation an organisation is. This includes the digital vision, governance structure and engagement framework required to drive the transformation plan as well as the technology and business relationships required to execute on the transformation plan (Buvat, et al., 2018; Westerman, et al., 2012, 2014).

Both dimensions must be considered in an organisation's DT journey towards its desired level of digital maturity (Westerman, et al., 2012, 2014).

1.8 Assumptions

While conducting this study, it is assumed that the banking industry leaders selected as respondents in the study have participated in or were at the time of the study participating in agile transformations within their respective organisations. This implies that the respondents had experiences on and an understanding of agile transformations.

It is assumed that large-scale agile transformations in the SA banking industry do not occur in isolation, but rather, are implemented as a part of the organisation's greater digital transformation journey. This implies that the selected respondents had exposure to, and adequate appreciation of the digital and leadership dimensions impacted by the digital transformation strategies of their respective organisations, as well as how these may have affected the effectiveness of the agile transformation conducted.

Based on the management levels they occupied at the time of the study, it is assumed that the selected respondents were far enough into their careers to have experienced some prior organisational changes and/or transformations. This implies respondents were familiar with generic change management efforts and the practical implementation of these in large corporates.

Finally, during the course of the study, it is assumed that the selected respondents' exposure to the large-scale agile transformation journeys occurring in their respective organisations was adequately suited to enable the respondent to reflect and openly provide insights on the challenges and success factors at work, based on their lived experiences.

1.9 Research report structure

Chapter 1 of this research report provided the reader with an introduction into large-scale agile transformations in the SA banking industry and the context within which this research is being conducted. Chapter 2 reviews and discusses the available literature pertaining to the study, as well as the theoretical and conceptual frameworks that underpin it.

Chapter 3 details the research methodology used to ensure the credibility of the study. This chapter also highlights the techniques used in the research participant selection and data collection processes.

Chapter 4 of the report presents the reader with the data collected while conducting the research, including an analysis of this data, followed by an interpretation of the main findings.

Lastly, Chapter 5 of the report highlights the main conclusions of the study as it pertains to the research questions posed and closes off by offering some recommendations for future studies.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

This chapter outlines what is currently available in literature pertaining to the research study. It begins with background on software development in the banking industry, including how and why this has evolved in recent years, focusing specifically on the move to agile. The next section discusses the theories that underpin this research study, followed by a review of the banking industry specific considerations in the implementation process. *Section 2.5 and 2.6* of the chapter then review the challenges and success factors of large-scale agile transformation based on existing literature, before presenting the theoretical and conceptual frameworks that were used to guide the research. The chapter closes off by briefly summarising the literature review.

2.2 Background discussion

2.2.1 Software development lifecycle

In the global banking industry, Software Development Lifecycle (SDLC) has been the most accepted development framework for over 40 years (Johnston & Gill, 2017). Although this highly structured approach has proven suitable for large complex systems, it comes with many shortcomings. These deficiencies have been amplified in recent years considering digital disruption and changing customer needs (Johnston & Gill, 2017).

The SDLC challenges that standout the most in this digital era include the inability to respond or adapt to changing requirements and the long development cycles - large projects have been known to take 3 years or more to reach completion (Johnston & Gill, 2017).

2.2.2 Agile software development

Around the mid-1990s, agile software development came about due to frustrations within the software development industry regarding the slow pace at which business requirements were being converted into delivered solutions (Agile Alliance, 2020). Software development projects across industries were taking on average 3 years to complete (Varhol, 2015). Due to these long lead times, software solutions were often delivered into businesses or marketplaces that had changed and therefore now either required a different version of the solution, or no longer required the solution at all.

Software development practitioners and consultants responded to the need to streamline and optimise their processes by augmenting the traditional SDLC with newer methods. This progression brought about new frameworks and practices that were later consolidated and formalised through the documentation of the Agile Manifesto (Gunal, 2012; Varhol, 2015). A summary of the agile values and principles contained in the Agile Manifesto are presented in Figure 2.1

Agile is fast replacing SDLC in that it is an approach that can efficiently absorb and manage changing environments and/or requirements (Dikert et al., 2016). Agile is iterative in nature and focusses on incrementally building solutions, delivering working software to users frequently and continuously improving upon the initial delivery (Pountney, 2017).

The benefits of agile software development have been reported to include reduced time to market, improved customer satisfaction as well as enhanced staff engagement (Dikert et al., 2016; Johnston & Gill, 2017; Mudarikwa & Grace, 2018).

The Agile Manifesto	
"We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value":	
1. "Individuals and interactions over processes and tools" 2. "Working software over comprehensive documentation" 3. "Customer collaboration over contract negotiation" 4. "Responding to change over following a plan"	
"That is, while there is value in the items on the right, we value the items on the left more."	
The Agile Principles	
1. "Our highest priority is to satisfy the customer through early and continuous delivery of valuable software."	7. "Working software is the primary measure of progress."
2. "Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage."	8. "Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely."
3. "Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale."	9. "Continuous attention to technical excellence and good design enhances agility."
4. "Business people and developers must work together daily throughout the project."	10. "Simplicity - the art of maximising the amount of work not done - is essential."
5. "Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done."	11. "The best architectures, requirements, and designs emerge from self-organising teams."
6. "The most efficient and effective method of conveying information to and within a development team is face-to-face conversation."	12. "At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behaviour accordingly."

Figure 2.1: Summary of agile values and principles (adapted from Agile Alliance, 2020)

2.2.3 Large-scale agile

Although agile was originally introduced in small teams and organisations, over time agile has been used for large projects and has been adopted by large organisations (Dikert et al., 2016). Scaling agile for adoption and acceptance in large and well-established organisations has proven to be a complex process with many challenges (Mudarikwa & Grace, 2018; Kalenda et al., 2018). The most common of these challenges are discussed in *Section 2.5*.

2.2.4 Organisational digital maturity

According to Westerman et al. (2012, 2014) and Buvat, et al. (2018), there are two dimensions to organisational digital maturity, these are 1) digital capabilities and 2) leadership capabilities.

Westerman et al. (2012, 2014) refer to organisations that are mature in the digital capabilities dimension while being significantly less mature in the leadership capability dimension as “Digital Fashionistas.” Fashionista organisations experiment in a wide range of digital applications, but lack the strategic intent required to co-ordinate digital implementations in a manner that derives real benefit (Buvat, et al., 2018; Westerman, et al., 2012, 2014).

Organisations that are mature in the leadership capabilities dimension while being significantly less mature in the digital capability dimension are referred to as “Digital Conservatives” (Buvat, et al., 2018; Westerman, et al., 2012, 2014). Conservative organisations have compelling strategic vision and strong governance structures but tend to be too risk-adverse to execute on the vision (Buvat, et al., 2018; Westerman, et al., 2012, 2014).

“Digital Digiratis” are organisations that are mature in the digital *and* leadership capabilities dimensions (Buvat, et al., 2018; Westerman, et al., 2012, 2014). Digiratis leverage both these dimensions to create digital competitive advantage, thus outperforming their competitors in profitability and revenue generation efficiency (Buvat, et al., 2018; Westerman, et al., 2012, 2014).

2.2.1 Agile transformation

Agile transformations are like digital transformations in that they too are multi-dimensional. In addition to undergoing a change in software development methods, agile transformations also include departmental or enterprise-wide changes in business operations, operating models, culture, ways of working and practices (Johnston & Gill, 2017; Mako, 2019).

Numerous studies on the success factors and challenges of agile in general have been conducted, however, academic research specifically into large-scale agile

adoption in well-established organisations is lagging (Dikert et al., 2016; Mudarikwa & Grace, 2018; Mako, 2019; Paasivaara et al., 2018). A recent notable contribution in this regard is a case study on Ericsson's journey towards agile transformation conducted by Paasivaara et al. (2018). Some insights from the study have been incorporated into *Section 2.5* and *2.6* of this report.

2.2.2 Agile transformation frameworks

To assist large organisations through the agile transformation process, several scaling frameworks have been developed by practitioners and consultants over the past few years. Mako (2019) lists the most popular of these to be the Scaled Agile Framework® (SAFe); Disciplined Agile Delivery (DAD); and Large-Scale Scrum (LeSS).

While Scaled Agile Inc (2021) agrees that there isn't one seamless approach to implementing a large-scale agile transformation, the SAFe framework does attempt to offer a 12-step implementation roadmap that contains some common milestones in the journey, and is believed to assist with setting large organisations up to achieve the best possible results in their agile transformation journey – see Figure 2.2.

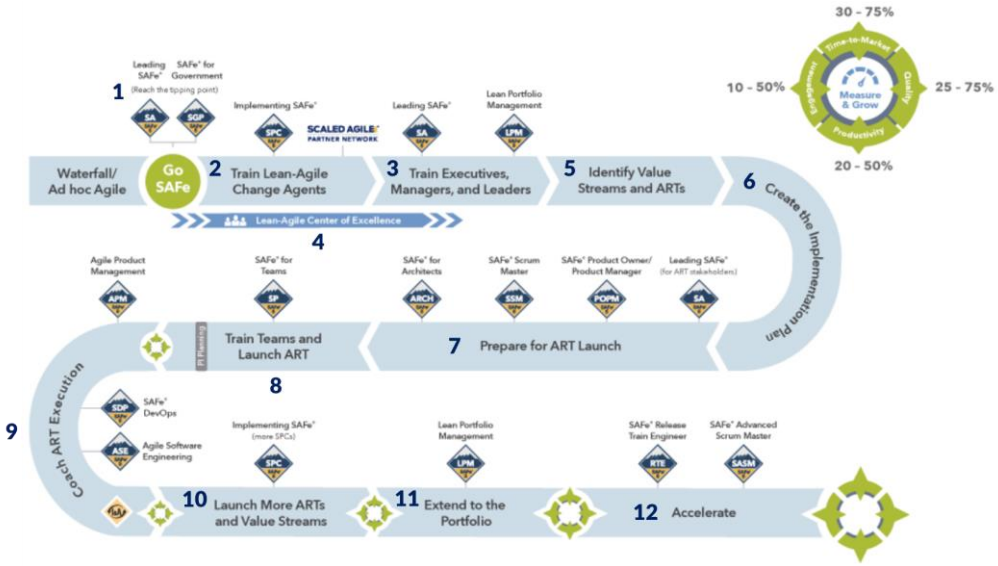


Figure 2.2: The SAFe Implementation Roadmap (amended to include step numbers; adapted from © Scaled Agile, Inc., 2021)

SAFe is one of the large-scale agile implementation frameworks that looks broader than the software development methodology changes of an agile transformation and attempts to consider the organisation more holistically (Almeida & Espinheira, 2021; Khoza & Marnewick, 2021).

Although AT frameworks are in use in various industries, there is limited research on how these can be effectively used, customised, or optimised (Dikert et al., 2016). There is also limited research verifying the effectiveness of these frameworks (Mako, 2019). A recent notable contribution in this research area is a 15-year retrospective on 13 agile transformation cases on the challenges of implementing large-scale agile frameworks in organisations such as Accenture, Dell, Ericsson, Intel, and Bank Co conducted by Conboy and Carroll (2019). Insights from the study have been incorporated into Section 2.5 and 2.6 of this report.

Naidoo and Rikhotso (2021) suggest that one of the major flaws of agile transformation frameworks is that they focus almost exclusively on autonomy rather than trying to propose a way in which autonomy and control can co-exist.

2.3 Theories of digital maturity and transformation

Various theories underpin technology adoption, digital maturity, and digital transformation. This research adopts the congruence theory and diffusion of innovation theory to explore the implementation of large-scale agile transformation in the SA banking industry.

2.3.1 *Congruence theory*

Organisational architectural frameworks are commonly accepted analysis tools used to better understand how organisations work (Lee, 2019). Scholars and consultants have proposed various frameworks e.g., Nadler and Tuchman's *"Model for diagnosing organisational behaviour"* as well as McKinsey's *"7-S Framework"* (Nadler & Tuchman, 1980; McKinsey & Company, 1980). What these frameworks have in common is that they are founded on the congruence theory. Congruency submits that an organisation can achieve compelling results

only when its essential components are closely aligned. While Nadler and Tushman (1980) names culture, people, structure, and work as the elements that should be aligned, McKinsey & Company (1980) emphasises alignment in strategy, structure, systems, staff, skills, style, and a shared mindset. For ease of reference, both frameworks mentioned here are presented in *Appendix E.*

Westerman et al. (2012, 2014) and Buvat et al. (2018) submit that digitally mature organisations achieve competitive advantage in their industries through alignment of their digital capabilities with their leadership capabilities. DT approaches are therefore also predicated upon the congruence theory in that the same organisational components mentioned here must be considered and aligned in planning the transformation journey. Similarly, organisational architectural frameworks can also be used to systematically align the different critical components of an organisation when planning for or implementing large-scale agile transformations (Lee, 2019).

Lee (2019) has proposed an updated architectural framework that also incorporates the external elements that can influence and be impacted by the organisation (see Figure 2.3). All elements of this architectural framework are relevant to this research study - for example, in the context of this research study, technological disruption can be understood to be one of the external environmental factors in the model, while bank customers can be understood to be one of the external beneficiaries depicted in the model. Table 2.1 offers the reader examples of factors or elements that can be considered to better understand the framework within the context of this study.

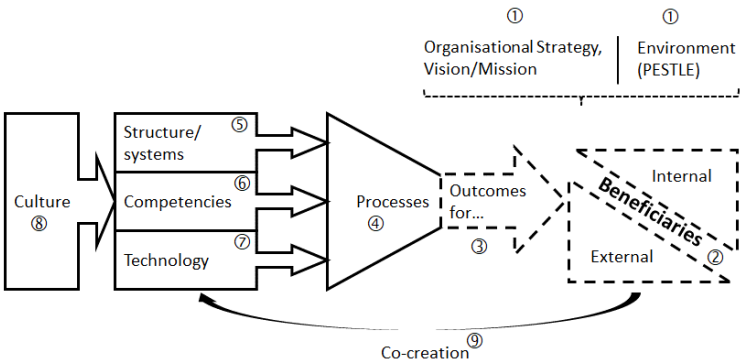


Figure 2.3: Proposed organisational architecture (Lee, 2019)

Table 2.1: Architectural framework with relevant examples pertaining to this research study

Architectural framework	Examples relevant to this research study
1. Organisational strategy, vision / mission & External environment	• Digital disruption • Evolving customer needs and expectations • The organisations' (i.e., FNB, Standard Bank, Nedbank, and ABSA) strategy, vision, and mission
2. Internal & External Beneficiaries	• Staff Members and Board Members • Clients, Partners, and Shareholders
3. Outcomes	• Enhanced staff and/or customer experience • Enhanced business value
4. Processes	• Internal operations processes • Organisational governance processes • Communities of practice and Centres of excellence
5. Structure/Systems	• Structuring the organisation and its systems in a manner that enables the desired level of agile transformation or digital maturity
6. Competencies	• Digital capabilities • Leadership capabilities • Permanent and contracting staff capabilities
7. Technology	• Leveraging new and emerging technology
8. Culture	• New ways of work and other efforts to create the desired organisational culture
9. Co-creation	• Agile, Lean, Design thinking, Systems thinking and other client-centred design frameworks that incorporate co-creation with internal and external clients

2.3.2 *Diffusion of innovation theory*

In the theory of diffusion of technology and innovation, Rogers (1995) suggests that individuals accept and begin to use technology at varying rates. Rogers (1995) further highlights that the pattern of adoption amongst individuals follows

a bell curve (see Figure 2.4) in that it is phased i.e., beginning with a few individuals, and then, over time gaining the momentum required to spread to the rest of the population.



Figure 2.4: Innovation Adoption Curve (Rogers, 1995)

This adoption pattern can also be expected to be observed within an organisation's population, where the individual adoption of agile values, principles and methodologies are concerned. Overall organisational technology and/or innovation diffusion is similar, although presenting its own adoption challenges and barriers.

Kane et al., (2019) suggest that the main challenges facing organisations grappling with digital disruption are rooted in the innovation diffusion theory and how it manifests in a corporate environment. For the organisational context, Kane et al., (2019) identify four elements that must be considered, these are: 1) the rate at which technology changes; 2) the rate at which individuals in the organisation begin to use new technologies; 3) the rate at which the organisation adapts to the changes in technology and individual behaviour and 4) the rate at which governing structures outside of the organisation incorporate these changes into policies and regulations.

In summary, Kane et al., (2019) observed that 1) *"Technology changes faster than individuals can adopt it";* 2) *"Individuals adapt more quickly to technological change than organisations can",* and 3) *"Organisations adjust more quickly to technological change than legal and societal institutions can"* - see Figure 2.5. This then implies that an organisation undergoing an agile transformation must, in its implementation, consider and solve for the varying rates of agile adoption at various levels and in different departments within the organisation, as well as

account for the slower rate of adoption in external organisations such as regulatory institutions (Kane et al., 2019).

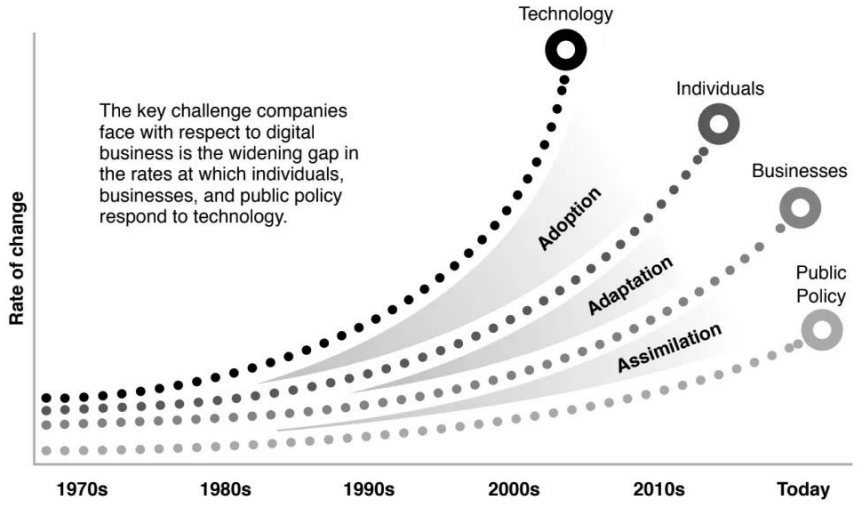


Figure 2.5: The different rates at which people, organisations and policy respond to technological advances (Kane et al., 2019)

2.4 The process of implementing large-scale agile transformations in the SA banking industry

As digital disruption in the SA banking industry accelerates, market and customer behaviour also continue to change. Incumbent banks are realising that they are increasingly competing with more digital players who by nature are more flexible and responsive to the market (McKinsey & Company, 2019). Over the past few years, incumbents such as FNB, Standard Bank, Nedbank and ABSA have, to varying degrees of success, begun digitally transforming their organisations.

Moving large well-established organisations towards agile methodologies has proven to be a complex process (Mudarikwa & Grace, 2018). Pountney (2017) and Mudarikwa and Grace (2018) suggest that there are additional complexities associated with transforming large corporates in bureaucratic and highly regulated sectors such as the banking industry. In addition to contending with matters of how to effectively implement the transformation process, SA banks also need to consider how to manage the impact of the transformation on the

distributed nature of their teams as well as its governance and risk management structures.

2.4.1 Agile implementation approach

Rigby et al. (2018) notes that the agile transformation journey is filled with many success stories as well as many disappointments across industries and geographies. This is primarily due to there being no standard or universally accepted agile transformation process or framework that is proven to be suitable for most organisations (McKinsey & Company, 2019; Mako, 2019). Since both industry and academia are still on the journey towards better understanding large-scale agile transformations, large corporates are dealing with elevated levels of uncertainty when trying to craft and effectively implement their agile transformation approaches (Rigby et al., 2018). The one certainty that literature and practitioners agree on is that, in addition to the change in software development methods, the agile transformation process also includes changes to organisational culture, operating models and ways of working (Johnston & Gill, 2017; Mako, 2019; Fuchs & Hess, 2018). In crafting their implementation strategies, SA banks must therefore prepare for enterprise-wide impacts.

2.4.2 Distributed teams

In introducing agile, large organisations typically adopt a phased approach i.e., beginning their journey by first introducing the methodology in one project or department before looking to extend adoption to other projects and business areas (McKinsey & Company, 2019). The main concern with this approach is projects in major banks tend to be large and are executed by large and distributed teams (Paasivaara et al., 2018). Major banks themselves are also often globally distributed (Paasivaara et al., 2018).

Considering the highly collaborative nature of agile and the emphasis on the importance of co-location of teams, when implementing agile transformations, SA banks need to take into consideration the distributed nature of their teams and in

some cases, find alternatives to co-location that will still enable close collaboration.

Since 2020, many organisations including SA banks have been forced to fast-track their digital transformation journeys to enable their business operations to continue during the COVID-19 pandemic lockdown restrictions (FSCA, 2022). During this period, teams have had to adjust to the emergence of various working arrangements. While some staff members have continued to work from the office, many team members have shifted to working from home or from other off-site locations, while others still have adopted a hybrid between working onsite and working remotely. Given these recent developments, SA banks may have started to figure out how to collaborate effectively, despite the challenges of not being fully co-located.

2.4.3 Governance and risk management

The highly regulated and risk-adverse nature of the banking industry has contributed to creating very rigid and bureaucratic organisational cultures and management practices in these large well-established corporates (Mudarikwa & Grace, 2018). Agile principles are often misaligned to these cultures and practices. While agile places emphasis on servant leadership, distributed decision making and wide collaboration and information sharing, traditional organisational structures in the banking industry have been centred around top-down decision-making and permission-based information sharing (Yoshida, 2018).

Creusen and Brittmark (2018) describe this misalignment within banking as a “clear discrepancy” between wanting to be flexible and innovation, while simultaneously being a large well-established corporate in reality. Overcoming this misalignment is an important consideration in the process of implementing agile transformation in SA banks.

Naidoo and Rikhotso (2021) argue that agile in the banking environment cannot work without both the autonomy that characterises agile delivery *and* the control that is inherent in the incumbent banks. To operate in this new era, governance

and regulatory models must find a workable balance between necessary bureaucracy and the need for agility, rather than try to enforce autonomy alone (Pountney, 2017; Naidoo & Rikhotso, 2021).

2.4.4 *Proposition 1*

From the literature, it is evident that there are many elements involved in the successful implementation of agile transformation strategies within large organisations in general, and within banks in particular.

Incumbent banks need to view the agile transformation process in the context of their wider digital transformation and technology adoption strategy (Fuchs & Hess, 2018). To achieve these strategic aspirations, the incumbents also need to employ robust change management techniques to ensure successful and sustainable execution of their transformation.

Research proposition 1 as derived from the literature review on the process of implementing large-scale agile transformation is stated below.

Large-scale agile transformations in the SA banking industry are more likely to succeed when implemented in conjunction with digital transformation, technology adoption, and change management strategies.

2.5 The challenges of large-scale agile transformations

This section of the research report provides a summary of the most common challenges of large-scale agile transformations as documented in literature. Although many more challenges have been mentioned in literature, the most common of these can all be mapped to the three categories described below.

2.5.1 *Organisational change management*

Conditions within an organisation need to be tailored to allow for and facilitate change. As with any organisational change or transformation, resistance to change at an individual and organisational level and changing organisational

culture are two of the most common challenges of large-scale agile transformations (Pountney, 2017; Dikert et al., 2016; Mudarikwa & Grace, 2018; Kalenda et al., 2018; Mako, 2019).

Kotter (2011) suggests that most organisational change efforts fail or do not achieve the desired results. Kotter (2011) further suggests that this is primarily due to change drivers within organisations not having an adequate understanding of the common stages of change, as well as effective ways to avoid the common challenges at each stage.

Organisational transformations consist of three generic phases, these are 1) Create awareness for the need to change; 2) Enable the whole organisation to prepare for the change and 3) Implement and sustain the change. These phases are interdependent in that the preceding step is required for the successful execution of the next, and all three phases must be properly implemented for the change effort to succeed (Kotter, 2011). To support them through these stages, organisations can utilise mature change management techniques such as the ADKAR model for individual change, Westerman's DT Compass, or Kotter's 8-step change model.

These models can also be used to effectively resolve the challenges that are not specific to agile transformation, but rather are well-known elements of organisational change (Mudarikwa & Grace, 2018). Table 2.2 maps these generic phases to the steps of the change management frameworks mentioned here. For the full individual models, see *Appendix C: Change Management Models.*

Table 2.2: Change Phases and Change Management Frameworks

Change phase	ADKAR model	Westerman's DT Compass	Kotter's model
1. Create awareness for the need to change	• *"Awareness"* • *"Desire"*	• *"Frame the digital challenge"*	• *"Create a sense of urgency"* • *"Build a guiding coalition"* • *"Form a strategic vision and initiatives"*

Change phase	ADKAR model	Westerman's DT Compass	Kotter's model
2. Enable the whole organisation to prepare it for the change	• *"Knowledge"*	• *"Focus investment"*	• *"Enlist a volunteer army"* • *"Enable action by removing barriers"*
3. Implement and sustain the change	• *"Ability"* • *"Reinforcement"*	• *"Mobilise the organisation"* • *"Sustain the transition"*	• *"Generate short-term wins"* • *"Sustain acceleration"* • *"Institute change"*

Source: *Adapted from each of the individual change management models (Kotter, 1995; Hiatt, 2006; Westerman et al., 2014).*

2.5.2 *Integrating with existing processes and structures*

Agile adoption often begins in one team or area within a large corporate. Due to the size and nature of business processes within large organisations, these pioneer agile teams often need to interface or integrate with other teams and departments that may not be operating in an agile manner (Paasivaara et al., 2018; Dikert et al., 2016). In practice, it is not unusual for organisations to launch many agile teams, only to have these bottlenecked by existing business processes, organisational structures, and slow-moving bureaucracies (Rigby et al., 2018; Kalenda et al., 2018; Mako, 2019). In addition to the challenge of managing interactions between agile and non-agile teams, Fuchs and Hess (2018) suggest that co-ordinating different agile teams within an organisation can be equally challenging for banks.

It is often initially unclear how agile teams should work with each other as well as other parts of the organisation effectively (Fuchs & Hess, 2018; Pountney, 2017; Paasivaara et al., 2018). This lack of alignment hampers an organisation's ability to realise the full potential and benefits of an agile transformation (Dikert et al., 2016).

For successful transformations, it is critical that other teams within the organisations support and adapt to working in more agile ways (Dikert et al., 2016). Leaders also need to determine ways in which teams that do not

necessarily need to fully adopt agile can still be included in the organisation's transformation journey (Dikert et al., 2016).

2.5.3 *Introducing agile expertise*

A common challenge to agile transformation sited in literature is the lack of knowledge, coaching, and training (Pountney, 2017; Kalenda et al., 2018 and Mako, 2019). Organisations that begin the agile transformation journey while not having enough people with agile experience within their ranks are advised to make use of external experts (Dikert et al., 2016). Quality coaching and training can contribute significantly to ensuring the correct implementation and understanding of agile values, principles, and practices within the organisation (Kalenda et al., 2018; Mudarikwa & Grace, 2018). Paasivaara et al. (2018) also found that coaching management can increase their support of agile methods.

Without actively ensuring that employees gain the relevant knowledge and support, organisations cannot hope to succeed in the transformation.

2.5.4 *Proposition 2*

Research proposition 2 as derived from the literature review is stated below.

The main challenges of large-scale agile transformations include organisational change management; integrating with existing processes and structures; and introducing agile expertise.

2.6 The success factors of large-scale agile transformation

The below section of the research report provides a summary of the most common success factors of large-scale agile transformations as documented in literature. Although many more success factors have been mentioned in literature, the most common of these can all be mapped to the three categories described here.

2.6.1 *Management support*

Management support and executive sponsorship are seen to be key critical in enabling the success of an agile transformation (Kalenda et al., 2018; Paasivaara et al., 2018; Dikert et al., 2016). Literature suggests that an agile mindset is primarily more important than the implementation of any methodology, process, system, or organisational structure in enabling successful agile transformations (Dikert et al., 2016; Mako, 2019). It is further understood that alignment in agile values and practices are equally important (Kalenda et al; Paasivaara et al., 2018). Visible management support within an organisation can be used to drive this mindset shift, in addition, managers also have the authority and mandate to demonstrate adaptive decision making as well as remove any obstacles agile teams may encounter (Dikert et al., 2016). Through executive sponsorship, managers can also make accessible the activities and resources required to facilitate the transformation to becoming an agile organisation.

2.6.2 *Customised transformation approach*

To assist large organisation through the agile transformation process, several scaling frameworks have been developed by practitioners and consultants. Literature suggests that many of these frameworks are primarily focused on software development rather than agile transformation as a whole; in addition, the frameworks fail to provide a well-structured gradual approach to the transformation process (Dikert et al., 2016; Pountney, 2017).

To use the existing frameworks effectively, literature suggests that organisations may be required to carefully customise them for their respective organisations or departments to gain the best benefits (Kalenda et al., 2018; Dikert et al., 2016; Paasivaara et al., 2018). A customised approach will also assist organisations with guarding against transformation obstacles such as placing undue emphasis on 100% adherence to the original framework or being overly aggressive with regards to rollout timelines (Kalenda et al., 2018; Conboy & Carroll, 2019).

2.6.3 *Agile training and support*

As noted in the challenges section, ensuring that employees are adequately trained and supported is critical to achieving agile transformation in an organisation. Training, support and coaching through internal agile support teams, agile consultants and trainers is required to ensure a consistent understanding and implementation of agile processes and practices throughout the organisation (Dikert et al., 2016). Agile coaches and experts also play a vital role in assisting large corporates with adjusting their legacy decision-making frameworks (Mudarikwa & Grace, 2018). Literature suggests that teams that are mentored and coached through the agile transformation journey perform better than teams without any agile coaching (Kalenda et al., 2018). For best results, coaching must be conducted in the real work environment rather than just through training sessions to facilitate the mindset shift required to enable and prepare staff to transform and operate in the new organisation (Paasivaara et al., 2018).

2.6.4 *Proposition 3*

Research proposition 3 as derived from the literature review is stated below.

The main success factors of large-scale agile transformations include management support; customised transformation approach; and agile training and support.

Table 2.3 summarises and links the research objectives, questions, and propositions of this study.

Table 2.3: Consistency Table - Research Questions and Propositions

Large-scale agile transformations: experiences in the South African banking industry			
Main Objective: *To explore the process, challenges, and success factors of implementing large-scale agile transformations from the perspective of leaders in the SA banking industry*			
RQ #	**Research Questions**	**Prop #**	**Propositions**
1	What are the lived experiences of leaders in the SA banking industry with regards to the process of large-scale agile transformations?	1	Large-scale agile transformations in the SA banking industry are more likely to succeed when implemented in conjunction with DT, TA, and CM strategies
2	What are the lived experiences of leaders in the SA banking industry regarding the challenges of implementing large-scale agile transformations?	2	The main challenges of large-scale agile transformations include organisational change management; integrating with existing processes and structures; and introducing agile expertise.
3	What are the lived experiences of leaders in the SA banking industry regarding the success factors of implementing large-scale agile transformations?	3	The main success factors of large-scale agile transformations include management support; customised transformation approach; and agile training and support.

2.7 The research framework

The research study was guided by a theoretical framework as well as a conceptual framework based on the literature review conducted.

2.7.1 *Theoretical Framework*

Presented in Figure 2.6 is the theoretical framework used to guide the research study. The literature review conducted here suggests that there is an overlap between digital transformation, technology adoption, and change management in an organisation. To become more digitally mature, organisations must align the core elements of their structures, systems, practices, and people towards the desired digital transformation. People and structures can be transformed through

change management efforts while targeted technology adoption is critical to transforming systems and practices. These elements of the transformation relate to the implementation process and were used to guide the study as it pertains to research question 1.

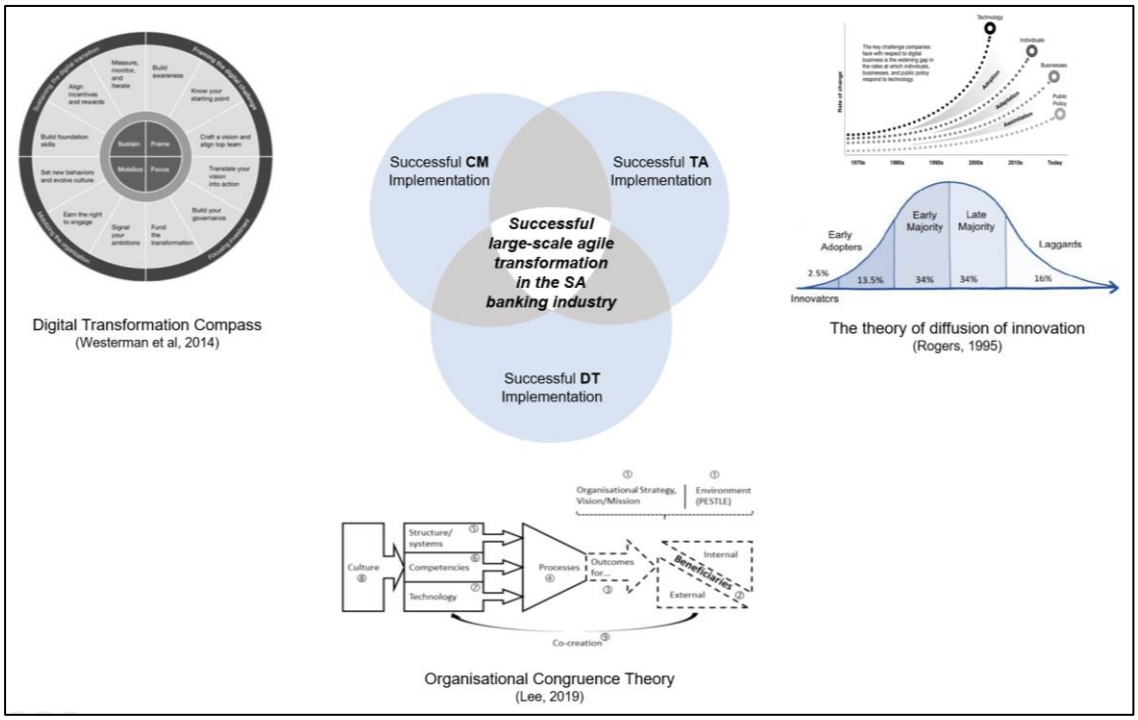


Figure 2.6: Theoretical framework guiding this research study

2.7.1 *Conceptual Framework*

Figure 2.7 is the conceptual framework used to guide this research study. As identified in the literature review, there are many challenges and success factors associated with large-scale agile transformations. The most common of these are highlighted in the conceptual framework this framework was key in guiding the study as it pertains to research question 2 and 3.

For organisations undergoing large-scale agile transformations, the three challenges and three success factors mentioned here are the main aspects that must be considered and incorporated into the transformation approaches described in the theoretical framework in *Section 2.7.1.*

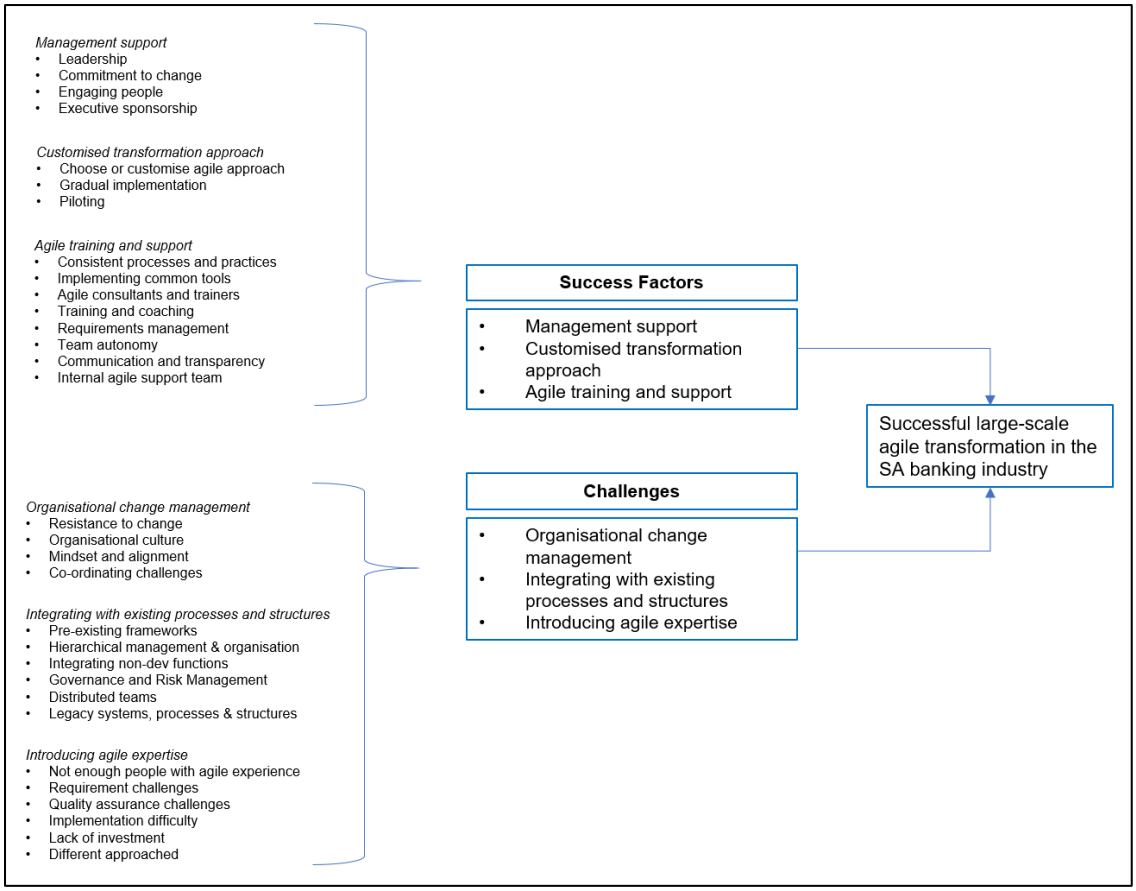


Figure 2.7: Conceptual framework guiding this research study

2.8 Conclusion of Literature Review

Large-scale agile transformations are complex and challenging undertakings. As both industry and academia seek to better understand how to implement these effectively, an enhanced appreciation of the process, challenges, and success factors is necessary. This study contributes to this through generating data on the lived experiences of leaders within the SA banking industry.

CHAPTER 3. RESEARCH METHODOLOGY

This chapter outlines the research methodology deployed in exploring the process, challenges, and success factors of large-scale agile transformations as experienced by leaders in the SA banking industry.

The chapter begins with detailing the research approach employed, including the research design, data collection methods and the research population and sample. The research instrument is also described in this chapter, including the procedures for data collection, analysis, and interpretation. Finally, the limitations, transferability, dependability, and credibility of the study are discussed followed by outlining the ethical considerations adopted in the study.

3.1 Research approach

The main aim of this study is to explore the process, challenges, and success factors of implementing large-scale agile transformations from the perspective and insights of leaders in the SA banking industry. Considering that the study is exploratory in nature and seeks to generate data on the lived experiences of industry leaders, a qualitative approach was selected as most appropriate. This approach assisted the researcher with the process of deriving meaningful insights and understanding through description (Schindler, 2019).

3.2 Research design

This study explores the perspectives and lived experiences of leaders within the SA banking industry - the phenomenology design approach was selected as most suited for this purpose. Phenomenology places emphasis on eliciting the personal knowledge, expertise, and insights of a select group of participants through qualitative data collection methods such as interviews (Lester, 1999; Schindler, 2019).

3.3 Data collection methods

To generate data on the perceptions, insights and experiences of leaders who have or are currently undergoing large-scale agile transformations, semi-structured one-on-one in-depth interviews were selected as the most suitable data collection method.

The one-on-one interviews were conducted online, using platforms such as Microsoft Teams, Skype and Zoom. The researcher posed open-ended questions to each respondent during an interview session that lasted between 45 minutes to 1 hour per participant. The study is cross-sectional in nature in that only one interview per participant was conducted during the research period (Schindler, 2019). Each interview was conducted using the interview questions described in *Appendix A,* guided by the research objectives, research questions and the propositions. The semi-structured nature of the interview allowed research participants to freely discuss and describe their own experiences as well as any reflections they had on the banking industry and agile transformation journeys in general.

3.4 Population and sample

This section of the research methodology describes and justifies the selected population and sample for the research study.

3.4.1 *Population*

The selected population for the study is the SA banking industry, and the target population within this industry is the top 4 banks, namely FNB, Standard Bank, Nedbank, and ABSA.

All four banks are current industry incumbents of comparable size that, due to the disruption in the industry, have in recent years begun to undergo large-scale agile transformations. Considering that the banking industry is one of the sectors that are on the forefront of large-scale agile adoption in South Africa, the selection of

this research population presents an opportunity to garner in-depth insights on the transformation process based on the experiences of leaders in this sector.

3.4.2 *Sample and sampling method*

The selected sample for the study consists of Senior Managers, Department Heads, Functional Heads and Divisional Executives operating in the top 4 banks. These leaders are often responsible for advocating for, enabling, and driving organisational transformations within their firms and are therefore considered the most appropriate sample for this study. Being that this sample is made up of a limited number of experienced managers with agile transformation experience and skills, purposive sampling is selected as best suited for this study.

To ensure a holistic view of large-scale agile transformations within the SA banking industry and to provide in-depth and valuable insights into the research questions, careful selection of appropriate interview respondents is required. Concerted effort was made to ensure that at least one interview respondent from each of the four banks was included in the study. In addition, respondents with experience across more that one of the top 4 banks were prioritised in the participant selection process.

Selected respondents were required to be leaders with at least two years of exposure and/or experience in agile teams or transformations. In addition, particular emphasis is placed on balancing the number of respondents who occupy roles within software development departments with those who occupy roles within business and support departments. Table 3.1 provides further details on this distinction through examples.

Table 3.1: Technical and Business Roles affected by agile transformations

Technology Roles/Areas	Business Roles/Areas
Delivery Management	Change Management
Enterprise Architecture	Business Implementation
Technical Enablement	Client Value Proposition
Technical Development	Design & Client Experience

Technology Roles/Areas	Business Roles/Areas
Quality Assurance	Product Management
Group Technology	Business Operations

3.5 The research instrument

This qualitative research study was conducted through semi-structured in-depth interviews with middle managers across South Africa's top 4 banks.

A sample of the interview guide is presented in *Appendix A.* Each interview was divided into three main parts, namely:

1. Introduction, general background, and experience
2. Lived experiences and insights
3. Perceived challenges and success factors

Part 1 of the interview placed emphasis on gathering the context and background information required to understand the respondent's point of view. This included a high-level understanding of the respondent's professional background, level of involvement and exposure to the SA banking industry and large-scale agile software development.

Part 2 of the interview involved a discussion on the respondent's lived experiences and insights based on the agile transformation journey(s) they had been a part of. This includes a view of their perceptions regarding the processes and approaches selected by their firm. The respondents were also asked to comment on any recommendations they had for more effective agile transformation implementation processes for the SA banking industry.

Part 3 of the interview explored the perceptions of the respondents regarding the challenges and success factors of implementing large-scale agile transformations. This includes the respondent's view on what these factors are, and what the respondents considered agile-specific nuances of these as compared to other organisational transformations. Participants were also asked

to reflect on their views regarding whether SA-specific and/or banking industry-specific challenges and success factors of large-scale agile transformations exist.

3.6 Procedure for data collection

Interview respondents from each of the 4 banks were selected and approached directly, based on the researcher's understanding of their exposure to and/or experience with large-scale agile transformations as well as their current management level within their organisations. The respondent's role in agile transformations (technology or business) was also considered as described in *Section 3.4.2.* All research participant characteristics were confirmed with the respondents and documented prior to scheduling of the interviews – see *Table 3.3.*

An interview guide was crafted for the purposes for this study - see *Appendix A.* As described in Section 3.5, this guide was used to frame the interview, however being an open-ended interview, respondents were able to express their views on the subject matter according to their level of experience and skill.

Each interview was conducted on an online platform rather than face-to-face. With the consent of each participant, an audio recording of each interview was created to facilitate the process of transcribing each interview verbatim for the analysis phase of the research. Transcription software was used to convert audio recording of the interviews into text. All transcriptions were manually reviewed for accuracy while listening to the interview recording and updated where necessary, prior to beginning the data analysis and interpretation phase of the research process.

3.7 Data analysis and interpretation

This study looks to contribute to an enhanced understanding of large-scale agile through exploring and deriving meaning from the lived experiences of a small purposively selected sample of participants. Considering this, the data analysis method selected as most appropriate for the study was Interpretative Phenomenological Analysis (IPA). Utilising the IPA approach allowed for the

study to generate detailed insights on what the experienced challenges and success factors are, while also allowing for new themes to emerge. This method also allowed the researcher to observe whether any organisational or industry-specific nuances would emerge from the data.

Although there is no formalised process for the IPA approach, a seven-step data analysis guide is used (see Figure 3.1)

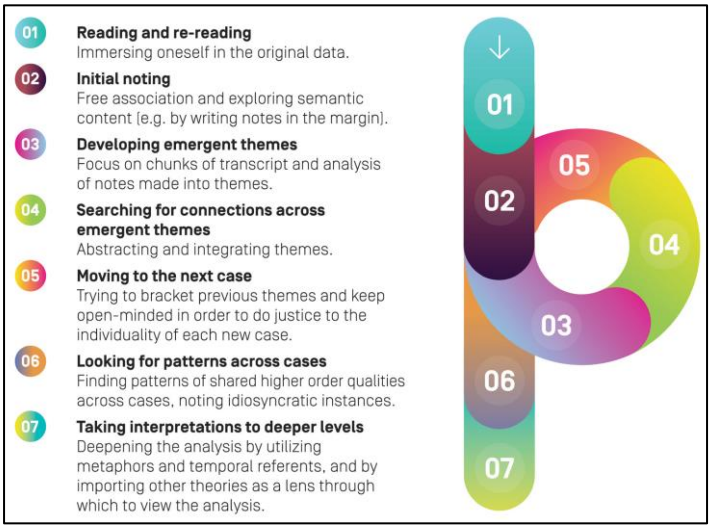


Figure 3.1: The seven-steps of IPA data analysis (Charlick et al., 2015 adapted from Smith et al., 2009)

To support this analysis and interpretation process, elements of the design research process, specifically design synthesis, were also incorporated – see *Figure 3.2*. Design synthesis is like the IPA method in that it is the process of externalising and sorting raw data into patterns, codes, and themes to convert the raw data into knowledge (Kolko, 2011).

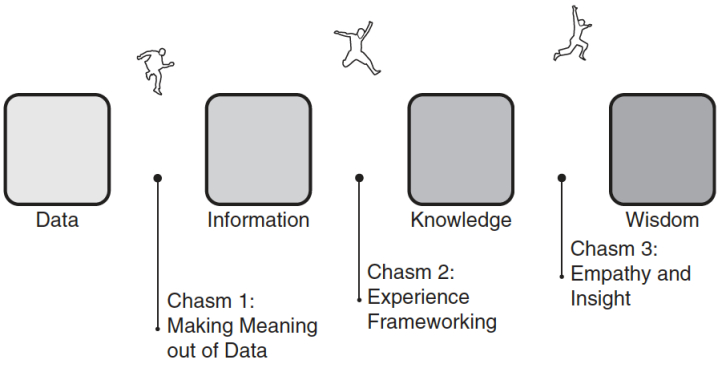


Figure 3.2: Converting data into insights through research synthesis (Kolko, 2011)

In line with this approach, the research interviews were re-listened to several times to ensure accurate transcription, and to identify key participant quotes and data points to be included in the analysis process. Interviewer notes taken during the interview as well as reflections documented after the interview were also included in the data points for analysis.

Key data points and quotes were then documented on post-it notes and physically displayed on a wall. The quotes were initially categorised based on the three main parts of the interview, namely 1) Introduction, general background, and experience, 2) Lived experiences and insights and 3) Perceived challenges and success factors. During the analysis phase, these three main parts were further dissected into smaller sections to allow for better analysis of the content.

Quotes and data related to the professional background section of the interview were broken down to display each respondents' occupational experience across banking, agile, business roles, technology roles as well as any other experience the respondents deemed relevant. This included surfacing and displaying comments and quotes by the respondents related to their general perception, insights, and views on the banking industry; agile transformations & agile as a methodology; digital transformation & innovation; as well as any other insights the respondents shared with the interviewer as context in the initial stages of the interview.

Quotes and data related to the lived experiences and perceived challenges and success factors section of the interview were broken down to surface specific details around what the respondents experienced during the agile transformation process within their organisations, as well as what their reflections on the challenges and success factors at work during the journey were. The shared details on experiences were organised into what the respondent's communicated as having worked well during the process, as well as what they felt could have been better executed.

These quotes and data points were organised into similar or related groups, and finally, similar, and related groups were organised into themes within each

research section. See *Figure* ***3.3*** for a graphic representation of the analysis conducted.

In addition to the manual analysis conducted, the NVivo qualitative analysis tool was used in the process of reviewing and understanding the gathered data.

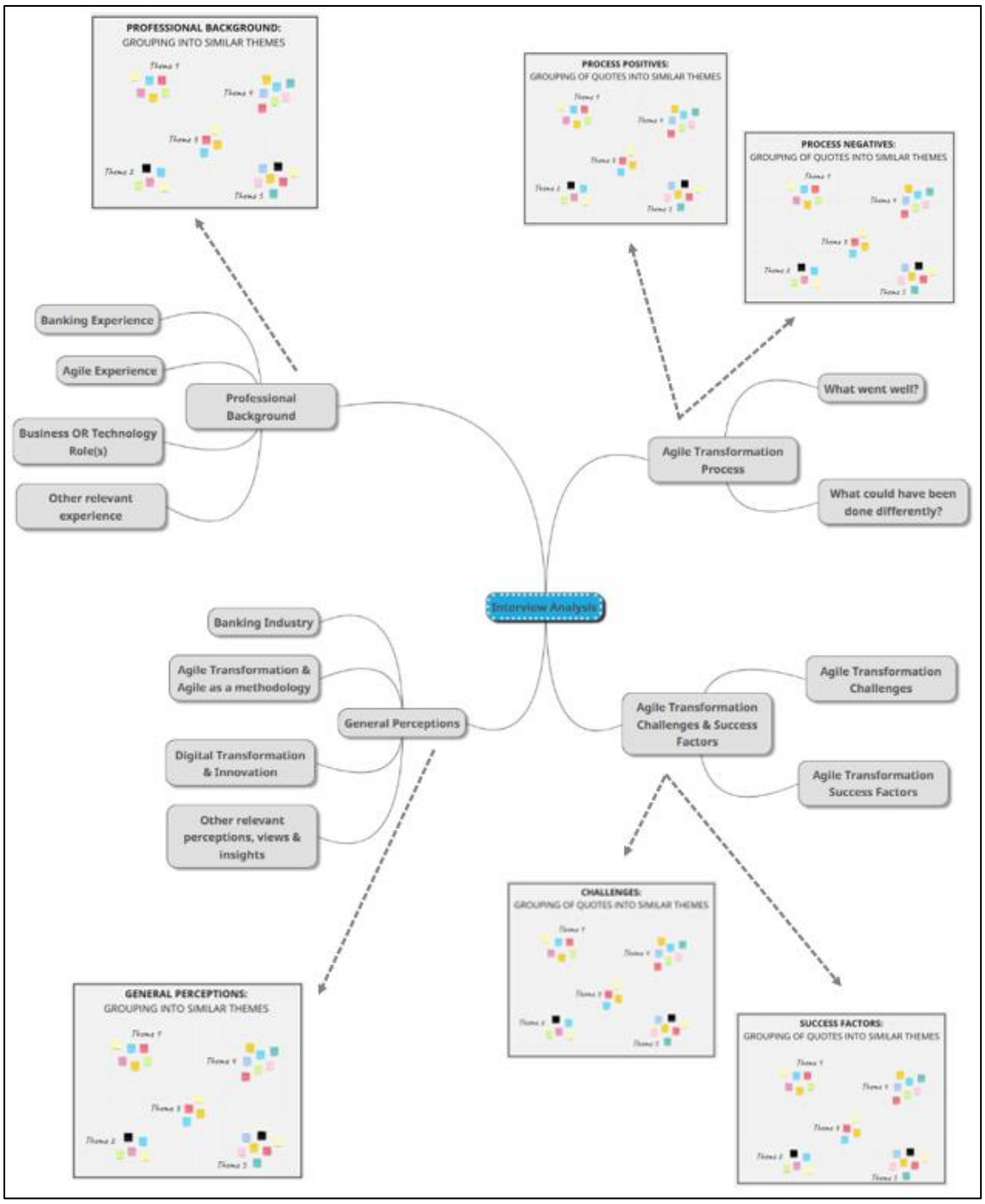


Figure 3.3: Summary of interview analysis conducted

3.8 Limitations of the study

The main limitation to this study is the use of purposive sampling technique. However, this is the only method suitable for this research due to the limited sample that is exposed to leading large-scale agile transformations in the SA banking industry.

3.9 Transferability, dependability, and credibility

This section of the report outlines the means taken during the research process to ensure the credibility of the study.

3.9.1 *Transferability and Dependability*

To ensure that the study can be repeated as well as transferred to another context, all details regarding the research study context, process and methods are documented by the researcher in this report (Korstjens & Moser, 2018).

The context of the study is defined as follows: geographically, the study is focused on South Africa. In terms of economic sector, the research considers the banking industry, specifically, it explores large-scale agile transformations in the top 4 banks within SA i.e., FNB, Standard Bank, Nedbank, and ABSA. The researcher has also defined the subject of the study to be the middle-management leadership layer within these organisations.

The purposive sampling technique was used in the process of conducting this research. Various methods were used to identify and approach appropriate potential research participants. In addition to using their own personal networks, the researcher also approached some potential participants cold, using social media (i.e., LinkedIn) and via email. Lastly, some potential participants were referred to the researcher by other research participants during the interview or by past and present colleagues.

Proven techniques of data collection, analysis and interpretation were used in this study. During the data collection phase, semi-structured one-on-one in-depth

interviews were conducted with the aid of an interview guide created by the researcher. All interviews were conducted online and were recorded; while some participants were comfortable with having their cameras on for the introductory part of the interview, the researcher did not request nor initiate this, but rather allowed the participant to choose and followed suit where possible. The bulk of the interview itself was conducted with cameras switched off due to network and bandwidth limitations. In scheduling the interviews, participants were asked for a suitable time for the interview; some interviews were conducted during working hours while others were conducted in the evening after the workday.

Post the interviews, the audio recordings were transcribed using dictation software. Interview recording were re-listened to in order to refine the transcripts before analysis. This process also assisted the researcher with immersing themselves in the research data.

During the data analysis phase, the researcher re-listened to the audio recordings and extracted relevant quotes from the research participants, recording these on in preparation for manual coding, sorting into categories based on the research questions asked, and the generation of themes within each of the three research objectives; see *Table 3.2: Data Analysis - Example of coding and theme generation process* for an example of this for research question 3.

Lastly, the qualitative analysis tool NVivo was also used in the data analysis phase to support the manual analysis conducted and to extract a summary of the data generated.

Since the context of this research study is documented in detail, and the process and method followed were based on accepted research principles, this study is both transferable and dependable.

Table 3.2: Data Analysis - Example of coding and theme generation process

Interview extracts	Codes	Theme
*"…I think honesty, so I think people are **scared** to actually speak their minds, so you need to almost foster a **culture** where you can speak your mind…"*	Fear Culture	Organisational Culture & Innovation
*"…if you've got a functional organisation, which is functionally set up to succeed, where there's a genuine **honesty** and **trust** in the **culture**, then these kinds of things I believe have got a much better chance of success…"*	Honesty Trust Culture	
*"…creating the skill sets the competences and the routines and **practices** that allow for **innovation**…"*	Practices Innovation	
*"…**innovation** and agile go hand in hand with like glue…"*	Innovation	
*"…changing the behaviours, the practices and routines and as you change practices and routines you then **shift the culture** to become a truly agile culture…"*	Culture	

3.9.2 *Credibility*

Triangulation is a well-known qualitative research technique used to ensure the credibility of a research study. Triangulation is the process of using multiple methods, data sources, observers, or theories to gain a holistic understanding of the subject matter being studied (Caulfield, 2022). In the case of this research, triangulation of sources or participant types was used to ensure the credibility of the study.

At least one participant from each of the top 4 SA banks was interviewed. Preference was given to participants with experience to the agile transformation journeys of more than one bank as well as participants who had some exposure with agile transformation journeys outside of the banking industry. This was to ensure perspectives and experiences from all 4 banks were included in the study and that participants could compare their experiences at smaller or less regulated organisations to the banks for further context on their experiences.

Participants across both technology-based roles as well as business-based roles were selected, the researcher attempted to balance the interviewee numbers between these role types to ensure both perspectives were included in the study.

Selected participants also had varying years of work experience relevant to the study i.e., tenures within the SA banking industry and years of agile experience. Including leaders with broad and diverse levels and years of experience across these categories assisted the researcher with ensuring an adequate spread of views were included in the study.

The research participant characteristics, as described above, are displayed in Table 3.3. In summary, most of the research participants interviewed had 20 years or more experience within the banking industry, while three participants had seven or more years' experience and two participants had between three and five years of banking experience.

Many of the participants had been exposed to elements of the agile transformation journey at more than one of the top 4 banks; most participants had experience at two or more of the top 4 banks while three participants had exposure to an agile transformation at only one of the banks.

Two participants had between nine and 12-years' agile experience, another two had seven years' experience, while two participants had five years' experience and the remaining four participants had between one to three years of agile experience. Many of the research participants had agile experience or exposure across multiple industries, in addition to banking. These industries included management consulting, telecoms, retail, technology start-ups, the health sector, and the broader financial services industry in general.

Table 3.3: Research participant banking and agile experience

Participant Tag	Role Category	Banking Experience	Agile Experience	Number of Top 4 SA banks exposed to
Participant 1	Business	20 years +	1 - 3 years	2
Participant 2	Business	3 - 5 years	1 - 3 years	1
Participant 3	Business	5 - 8 years	3 - 5 years	2
Participant 4	Technology	8 - 12 years	5 - 8 years	2
Participant 5	Business	20 years +	5 - 8 years	2
Participant 6	Business	20 years +	5 - 8 years	1
Participant 7	Technology	20 years +	1 - 3 years	1
Participant 8	Technology	20 years +	8 - 12 years	2
Participant 9	Technology	3 - 5 years	1 - 3 years	2
Participant 10	Technology	20 years +	5 - 8 years	2
Participant 11	Technology	5 - 8 years	5 - 8 years	3

3.10 Ethical considerations

In compliance with the ethical requirements of the University of the Witwatersrand, ethics clearance and approval were obtained from the ethics office prior to commencing with data collection for this study. Voluntary participation, anonymity, and confidentiality, and use of informed consent of all respondents was ensured to conform to the ethical requirements.

3.10.1 *Voluntary informed consent*

To ensure voluntary participation, informed consent was obtained, each participant was provided with a research participant information sheet, describing

the research topic and interview process (see Appendix B). Each participant was also provided with the research participant consent form displayed in Appendix C. Participants were required to sign and return the consent form to the researcher prior to participating in the research interview. Each participant was also informed that their consent could be withdrawn at any point during the research process.

3.10.2 *Protection of individual and organisational confidentiality*

To protect the confidentiality of all respondents, the names of the individual participants and their current and former places of work have been omitted from this report and all research materials. Anonymity tags such as *"Participant 1"* and *"Bank A"* were applied instead. Where the names of individuals and organisations other than the top 4 banks were mentioned in the interview, these were redacted in the interview transcripts generated by the researcher

Table 3.4: Consistency Table - Research Objectives, Questions, Propositions, Data Collection and Analysis

Large-scale agile transformations: experiences in the South African banking industry							
Main Objective: *To explore the process, challenges, and success factors of implementing large-scale agile transformations from the perspective of senior leaders in the SA banking industry*							
RO #	**Objective**	**RQ #**	**Research Questions**	**Prop #**	**Propositions**	**Data collection**	**Data analysis**
1	To explore the process of implementing large-scale agile transformations in the SA banking industry	1	What are the lived experiences of leaders in the SA banking industry with regards to the process of large-scale agile transformations?	1	Large-scale agile transformations in the SA banking industry are more likely to succeed when implemented in conjunction with DT, CM, and TA strategies	Interview guide questions 4, 5	IPA approach
2	To explore the challenges of implementing large-scale agile transformations	2	What are the lived experiences of leaders in the SA banking industry regarding the challenges of implementing large-scale agile transformations?	2	The main challenges of large-scale agile transformations include organisational change management; integrating with existing processes and structures; and introducing agile expertise.	Interview guide questions 6, 7	IPA approach
3	To explore the success factors of implementing large-scale agile transformations	3	What are the lived experiences of leaders in the SA banking industry regarding the success factors of implementing large-scale agile transformations?	3	The main success factors of large-scale agile transformations include management support; customised transformation approach; and agile training and support.	Interview guide questions 8, 9	IPA approach

CHAPTER 4. FINDINGS PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the findings of the research conducted, then discusses and explains these based on the three research questions of the study.

Section one of the chapter covers findings, and discussions regarding the process of large-scale agile transformations. Section two and three present the findings and discussions of Research Question 2 and 3 concerning the challenges and success factors of agile transformations.

In the last section, the chapter closes off by summarising the findings and interpretations discussed here.

4.2 Findings pertaining to Research Question 1

Research Question 1 of the study asks: *What are the lived experiences of leaders in the SA banking industry with regards to the process of large-scale agile transformations?*

In exploring this research question, participants were asked to reflect on their perceptions regarding agile in the banking context as well as some of the approaches and processes used to initiate the agile transformation in their organisations. In addition, participants were asked to discuss their opinions regarding which aspects of these agile transformation implementations worked well, as well as which aspects could have been better executed. Below are the findings of these three discussion points as they emerged during the analysis process.

4.2.1 *General Perceptions, Approaches and Processes*

Most research participants interviewed agree that the move to agile is required and is the right move for the banks to be able to respond to and deal with the current challenges they are being presented with regarding digital disruption and increasing competition. Many also acknowledged the benefits of moving to agile; some of the stated benefits participants mentioned include a greater level of versatility, a faster pace of delivery and some improvement in the relevance and usability of client solutions. Participants agreed that while progress is being made, banks are still behind many of their competitors when it comes to agility. Participants suggest that competition from digital banks and non-traditional competitors is and will continue to be a major challenge for the incumbent banks.

Participant 4: *"…banks definitely are notorious for taking long to get working software out... and now they can do it a lot quicker; I've seen that in a lot of areas… the FinTechs are still beating the banks by a lot, but the banks are starting to catch up…."*

Aware of the potential benefits an agile transformation could unlock within their respective banks, most participants shared some concerns regarding the current urgency and pace at which banks are transitioning to agile. Some participants suggested that these transformations should be fast-tracked for more agile benefits to be realised by their organisations.

Participant 8: *"…you've still got a large… amount of the portfolio spend that runs according to Waterfall... Waterfall needs to become 10% of what you do and agile needs to become 80% in reality; in budget spend; in the way you control; in the way you report; in the way you earn…"*

A few participants also suggested that to really mount a credible defence against their non-traditional competitors, banks would need to *"become technology players"* rather than operate as banks that just have or utilise technology within their businesses.

When probed about the large-scale agile transformation implementation approaches and frameworks employed within SA banks, most participants

advised that *"a version"* of SAFe as well as DAD were the most utilised approaches in guiding their transformation journeys. While some participants felt that SAFe and DAD were detailed, useful implementation frameworks, many felt that these could not be applied *"as- is"* but required a level of customisation based on the context and conditions in their own organisations. Participants suggest that this was a challenging task, fraught with complexity and uncertainty regarding whether the adjustments made would yield the expected results.

Participant 7: *"…various approaches [were] implemented and tweaked as required..."*

During the interviews, rather than focus on details regarding frameworks and methodologies, participants discussed what they considered agile transformation enabling factors at length, seeing these as more important to the SA banks than trying to choose the perfect implementation framework.

Participant 1: *"...people are getting stuck with the agile methodology; it's not about a methodology or practice, it's the organisation in which you deploy that…"*

Lastly, while reflecting on the role that technology adoption and digital transformation play in the large-scale agile transformation of banks, a few of the interview participants saw these as not new, but rather ongoing contemplations that are made, almost organically, throughout the life of an organisation.

Participant 11: *"…we built branches first because that's what technology adoption was then... to use an ATM, that was digital transformation then... there is digital transformation that is continuously happening."*

4.2.2 *Positive Implementation Experiences*

While reflecting on their lived experiences regarding which aspects of the large-scale agile transformation process worked well within the organisations they were exposed to, most of the research participants interviewed discussed themes relating to Training Initiatives and Leadership. *Figure 4.1* is a word frequency analysis based on these discussions, while the rest of this section expands on the findings and insights emerging from the discussions.



Figure 4.1: Word Frequency Analysis - Positive Implementation Experiences

a) Training Initiatives

Many participants across all four banks felt that training and enabling the acquiring of knowledge and skills in the agile methodology was well executed in their respective organisations. Participants commented that their organisations willingly invested in the process of upskilling their staff in agile, to the extent of making training that included certification available to any staff member at the banks' cost.

Participant 10: *"…the message was very strong; training must be easily accessible… and certification at the organisation's cost or 'free' was a requirement…"*

The two parts of the training initiatives participants were particularly pleased with included 1) the onboarding or contracting of experienced and knowledgeable agile facilitators and coaches to drive the upskilling and 2) making the training available at multiple tiers of leadership within the organisation i.e., training of core innovation teams; their line management layers, as well as the senior leadership in the organisation.

Participant 1: *"…specialists were introduced to help create agile competencies and capacity within the organisation…"*

While most participants reflected positively on the execution of training initiatives in their organisations, a few others mentioned observing “different interpretations” of agile at play within their organisations, resulting in some misalignment in expectations and ways of working among teams and areas. These variances in the staff’s understanding of agile were thought to be due to different external agile experts being brought into different areas of the same organisation to train staff.

In addition to agile, participants discussed other methodologies that they felt important and complementary to agile, these included design thinking and lean. Participants advised that many of these frameworks were also introduced into their organisations (some new, some several years prior) and similar investments into the training of staff, including senior leadership, on these methodologies were made to assist with driving innovation and the digital agenda within their organisations.

Participant 4: *“…the introduction of other methodologies, for example design thinking, that support agile was a positive and worked quite well in the organisation…”*

Participants commented that this investment into high quality training in agile and other supporting innovation-related methodologies were vital in enabling some of the successes experienced within their organisations with regards to the technical delivery of solutions through agile. Lastly, a few participants felt that their organisations did well to manage the available agile facilitators, coaches, and early adopting staff in the process of implementing the agile transformation.

Participant 3: *“…I think we are very effective in how we distributed… a limited resource pool… across teams for impact…”*

b) Leadership

Around half of the interviewed participants felt that there were some elements of the role that their leadership played in the agile implementation that were well executed.

Participants commented that the areas within their organisations that were adopting agile well were often areas managed by influential leaders that understood the methodology, actively sought buy-in from more senior leadership levels, and persisted over time where that buy-in was not holistic or obtained upfront.

Although not the case across all areas of their organisations, participants shared having experienced leadership styles that embraced learning and getting better "step by step" during their agile transformation. Participants felt that this together with leaders being accessible to teams as they started to adoption agile, and the new ways of working, led to some of the small, early successes they were able to achieve.

Participant 7: *"...our leaders have always been accessible... especially with projects impacting digital platforms..."*

Despite various challenges in their agile transformation journeys, many participants expressed confidence that their organisation would eventually succeed in becoming agile due to there being sufficient attention and ambition from their leadership to transform their organisations and instil an agile way of working. Participants acknowledged that reaching full operationalisation of their agile transformation would be a long struggle, requiring a *"persistent, consistent, even insistent drive"* from the ranks of leadership.

4.2.3 *Negative Implementation Experiences*

While reflecting on their lived experiences regarding which aspects of the large-scale agile transformation process could have been better executed within the organisations they were exposed to, participants discussed various themes, the bulk of which related to Organisational Structure and Operational Alignment within their banks - *Figure 4.2* presents a word frequency analysis based on these discussions.



Figure 4.2: Word Frequency Analysis - Negative Implementation Experiences

a) *Organisational Structure and Operational Alignment*

Eight of the 11 participants felt that there were misalignments and disconnects within their organisations which had a negative impact on the successful implementation of the agile transformation in their respective banks. The misalignments experienced and described by the participants can be roughly grouped into two types based on where they occur, namely: between business areas and technology areas and between agile practising and non-agile practising areas within the banks.

Participants felt that the misalignments in both cases were brought about due to the different areas being at different maturity levels in their agile adoption. In addressing the agile adoption maturity levels within their organisations, participants described scenarios where some areas were very mature in agile, others were only just starting out, while a few others in some cases were very resistant to the change.

To facilitate the continued operation between these areas, participants advised that teams sometimes employed a hybrid between agile and waterfall methods, which introduced an additional layer of complexity into their agile transformation.

Participant 10: *"...until you're end to end agile... you're going to have to do these non-agile, waterfall-type stuff to accommodate these adjacent areas... and that's a bit complicated…"*

Participants suggested that organisational structure and operating model changes were required to resolve the misalignment. There were varying opinions regarding whether these changes should have been affected before, during or after the technical software development processes within the organisations were formally converted from waterfall to agile. Most participants felt that the structural changes should have come first, to enable a smoother transformation to agile. However, a few participants felt that efforts may be better spent on adapting organisational culture to enable agile rather than focusing on structural changes.

Participant 4: *"...organisational structure is one thing… but structure will never …create autonomy, or autonomous, digitally active workforces…"*

4.3 Discussion pertaining to Research Question 1

The research study confirmed the move to agile as the most appropriate for SA banks to respond to current market conditions. At the time of the interviews, the top 4 banks were starting to observe some of the promised benefits of agile, although not fast enough or to the level that their leaders expected or desired. The benefits observed were specifically around reduced time to market for technical solution delivery and some improvements to customer experience. These benefits are in line with agile benefits documented in literature by the likes of Dikert et al. (2016), Johnston and Gill (2017), as well as Mudarikwa and Grace (2018).

A look at the South African Customer Satisfaction Index (SA-csi) can offer an objective view of whether customer experience has in fact improved within the SA banking industry over recent years. The SA-csi, as administrated by Consulta, is an independent view of customer satisfaction levels in SA. For banking, the SA-csi combines insights on customer expectations, perceived value, and perceived quality to provide a measure of overall customer satisfaction. In addition, the Net Promoter Score (NPS) is accepted in the SA banking industry as a measure of customer loyalty (Consulta, 2020). *Figure 4.3* presents the trend of these two measures over the past few years for each of the top 4 banks.

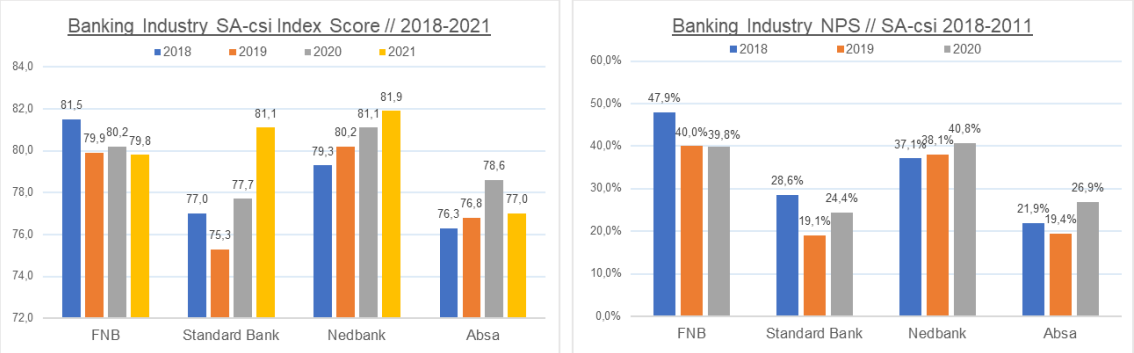


Figure 4.3: South African Customer Satisfaction Index and Net Promoter Score for Banking (adapted from Consulta, 2020; Consulta, 2021& BusinessTech, 2022)

While some fluctuation is observed, the SA-csi and NPS across the banks has been improving over the last few years, suggesting that the agile transformation steps taken thus far by banks have in fact yielded some customer experience benefits. Consulta (2021) advises that technology acceleration and adoption due to COVID-19 pandemic has resulted in higher customer expectations regarding digital banking channels and customer experience. Customers now expect banks to offer user-friendly digital solutions as a standard or minimum requirement (Consulta, 2021).

While banks may have enjoyed improving customer satisfaction scores over the recent past, digital innovation alone may not be enough to sustain this into the future (Consulta, 2020). The digital transformation journeys of banks may need to begin considering innovation that solves for some of the non-digital need of customers. In addition to the agile methodology incorporating client co-creation, SA banks have also introduced other innovation approaches such as lean and design thinking into their organisations; these have been found to be important in supporting the agile transformation of SA banks (Khoza & Marnewick, 2021; Almeida & Espinheira, 2021). Banks may need to leverage these innovation approaches into the future to continue to achieve their customer satisfaction targets.

SAFe and DAD seem to be the most used agile scaling frameworks in the SA banking industry, however experiences to-date suggests that the customisation of these approached, sometimes on-the-go, to best fit the existing structures, processes and agile adoption levels present within the organisation remains

important. Banks have managed to customise and adjust the available AT frameworks as a part of their transformation journeys, however this customisation approach does not seem to have been successful in eliminating or at least mitigating against some of the common challenges of implementing agile at scale.

Literature suggests that changes to business operations, operating models, culture, and ways of working is a necessity in the large-scale agile transformation process (Mako, 2019; Johnston & Gill, 2017). The lived experience of leaders in the SA banking industry confirmed this. The disconnects and operational misalignments that continue to exist between IT and business areas as well as agile and non-agile areas highlight that organisational structure and operating model changes are required to enable organisations to work within the agile philosophy. Khoza and Marnewick (2021) as well as Almeida and Espinheira (2021) argue that the SAFe implementation framework encourages autonomy at an agile team level, while incorporating integration across agile teams and solutions at a portfolio and enterprise level. This does not seem to have materialising in practice within the SA banks. Naidoo and Rikhotso (2021) theorise that the main reason that agile scaling approaches fail in highly regulated environments such as banks is due to their emphasis on autonomy, without considering the option of a workable balance between autonomy and control.

One of the parts of the AT that were well executed by the banks was the successful rollout of quality certified training and coaching at all levels of the organisation, including the senior leadership level. Literature suggested that training on agile is a major challenge in these types of transformation efforts (Pountney, 2017; Kalenda et al., 2018 & Mako, 2019; IQ Business, 2021). However, this study found that SA banks have overcome this in recent years, and have managed to successfully build agile knowledge, skill, and capacity within their organisations. What is unclear from the study is whether the training implemented was as a part of a once-off initiative to introduce the agile methodology to leadership, or whether this is ongoing at the leadership level to ensure continuous re-enforcement and maturing of the organisation's understanding and practise of the methodologies.

4.4 Findings pertaining to Research Question 2

Research Question 2 of the study asks: *What are the lived experiences of leaders in the SA banking industry regarding the challenges of implementing large-scale agile transformations?* During the interview process, to gather data to assist with answering this research question, participants were asked to discuss their views regarding the main challenges of large-scale agile transformations in the SA banking industry. This section of the research report presents and discusses these views, based on the main themes that emerged during the analysis process.

Figure 4.4 represents the output of a work frequency analysis conducted using all participant responses related to research question 2. The word cloud assists the reader by highlighting in summary, some of the main topics raised by the participants, while the rest of this section presents the findings and insights for each of the resultant themes.



Figure 4.4: Word Frequency Analysis - Main Challenges

4.4.1 *Leadership*

The interviewed participants felt that leadership influence over staff adoption of agile within the SA banking industry was inherently strong, and that this could be leveraged positively in the agile transformation journey where the leader has bought in; or could be a major challenge where the leader has not fully embraced

agile. Most of the participants felt that the latter was the experienced reality, and that leadership was a major challenge in the agile transformation journey.

In addition to buy-in, participants discussed related factors that can mobilise or demobilise the transformation process. These included whether a leader understands the agile methodology and how that practically changes the project implementation process; and whether a leader enables agile teams to work autonomously.

Participant 11: *"...if the head of some area says I want things working in this way, I can promise you everyone else is gonna line up behind him, but if he's indifferent, silent, or even against it, nothing is going to happen…"*

These discussions were pertaining to the individual leader level and the impact this has on the agile transformation progress of individual areas, resulting in varying agile adoption outcomes across different areas in large organisations such as banks. The discussions were also not limited to "positional" leaders, but included influential team members and stakeholders that could impact the agile adoption within an area.

Lastly, some participants commented that the natural result of a lack of leadership buy-in or support of agile is staff within that area beginning to compromise some of the agile philosophies and principles they have been trained on, to satisfy the spoken and unspoken expectations of the leader.

4.4.2 *Technical Delivery over Innovation*

Participants felt that agile did well to improve the pace of delivery within the banks but was lacking in ensuring that strategy and execution remain well aligned throughout the large-scale agile transformation process.

Participant 2: *"...we have this agile delivery process, but it doesn't link back to the strategic outcome we're trying to deliver… or the link is very difficult to make."*

In discussing potential reasons for this lack of alignment, participants offered various opinions, the most common of which was that banks are innately delivery-

lead, and carry a bias towards technical output, sometimes to the detriment of innovation.

Participants felt that while innovation frameworks were present and in use within their organisations, these were not always consistently applied. The pressure to deliver working software quickly at times meant teams were not afforded the necessary time to ideate and validate their idea before and during the technical development phases. A few participants commented that this external pressure on agile teams sometime affected the way projects or features were evaluated, resulting in the delivery of technical solutions being prioritised over taking the time to ensure that the solution being delivered is appropriate from a strategy, business, and client-value point of view.

Participant 3: *"...agile as implemented in banks has a bias on output or delivery; a bias on speed. It's one thing to move quickly, it's another to ask ourselves in the direction of what…"*

Participants felt that while banks understood the value of client co-creation, they still needed to more deeply appreciate the iterative nature of this process. Participants suggested that to truly address their client's unmet needs and to achieve their own strategic aspirations, banks need to better support teams in properly and consistently engaging the innovation process - allowing them to stay in the process even when it takes longer than desired, and even when it brings up difficult to solve for challenges.

4.4.3 *Organisational Culture and Innovation*

Six of the 11 participants cited culture as a major challenge in the implementation of large-scale agile transformations.

Participant 4: *"...the biggest hurdle of agile is not frameworks or [technology] but setting a different culture…"*

Internal competition, fear, self-preservation, and legacy mindsets of command-and-control are some of the factors participants listed as being present in some banking environments that do not enable or support agile transformations.

Participants discussed how these factors can result in staff shying away from fully adopting agile and willingly operating in the new ways of working.

Participant 8: *"...no one wants to go and adopt something where the minute you make a mistake you get kind of smacked for it, then you're gonna have lip service to the transformation, but actually people are going to be doing something completely different... you're just not gonna get it to work…"*

Participants also felt that the culture within SA banks negatively affected the organisation's ability to innovate. Various opinions were offered regarding the main reason for this. Some participants felt that banks have always been fast followers rather than innovators, while others commented that parity with competitors was prioritised over true innovation. Lastly, some participants suggested that leaderships' resistance to more autonomous way of working also stifled innovation within SA banks.

Contrasting this with some of their experiences in other, less regulated industries or smaller organisations, participants commented that autonomy and innovation were significantly more prevalent due to these organisations having much fewer resources and therefore having to trust teams more and leverage decentralised decision-making models more.

Participant 4: *"... [smaller organisations] don't have the luxury of all the resources of an established organisation… [they] have to get the best people and [they] have to trust that they will do the work."*

Some participants mentioned various initiatives their organisations have undertaken and continue to drive to address the organisational culture gaps discussed here, and to encourage or prioritise innovation and collaboration. While acknowledging the existence of these, many participants commented that the initiatives were not sufficiently matured ahead of the agile transformation being kicked-off at their banks.

Participant 10: *"...we need to be able to reach across levels to get things done... servant leadership is a part of agile... the bank invested in courses for all employees to understand servant leadership…"*

4.4.4 *Governance and Approval Processes*

Participants suggested that a successful large-scale agile transformation requires banks to reorganise all their critical functions across the organisation and align them to the agile ways of working. These functions, as mentioned by the participants, include the business areas, customer-facing areas, and support areas in addition to the technology delivery areas. Many of the interviewed participants felt that these areas were not effectively aligned within their organisations, resulting in them not yet being able to achieve the full benefits of their agile transformations.

Participant 5: *"…you need to actually take the entire way in which a large organisation operates and agile it, and I don't know if that is 100% possible, I think you can get 80% of the way there…"*

While the technical delivery aspects of agile seem well entrenched within the banking industry, governance and funding approval processes seem not to have been adequately adapted to enable or support the agile transformation effort. Seven of the 11 participants shared several ways in which the current governance structures and approval processes hinder and slow down the agile process, making it difficult to fully transform the organisation.

According to the participants, the main contributing factor to these hindrances was pertaining to the pace at which leaders were adopting agile and making the required behaviour adjustments to allow teams to operate within the principles and practises of agile.

Participant 6: *"...leadership hasn't fully adjusted yet... we are still managing by committee... there are still lots of hoops to go through in the approval process…"*

Some participants compared this experience to other organisations outside of banking, stating that due to the much smaller size of the organisations, not only was collaboration much easier, but decision making was much faster due to specific individuals, as opposed to forums or committees, being the final decision makers.

Participant 9: *"...the bank is extremely conservative... decision making is a lot slower; information flow is a lot slower, and there isn't one person who can make a decision... in many instances it's not even a single committee... those kinds of things slow down your ability to be agile…"*

Participants also commented on supporting areas such as the Project Management Office (PMO), Centres of Practice (COPs & COEs) and finance still having bureaucratic approval and gate processes that have not been adjusted to align to the iterative nature of agile. Participants acknowledged that making the required changes in the project governance and finance spaces could introduce undue risk and may therefore be exceedingly difficult to implement in the banking environment.

Participant 4: *"…these processes have been working and now to just change processes obviously causes a level of inconvenience and a level of risk…"*

Participants also pointed out that not finding ways to resolving these misalignments will result in banks that say they are agile, but do not actually operate in an agile mindset.

4.4.5 *People*

Seven of the 11 participants mentioned that workforce resistance and managing the 'people-aspects' of the journey was a challenge in the implementation of large-scale agile transformations in the SA banking industry.

Participant 8: *"...there's definitely a clinical aspect of agile which we all can understand... but there's a psychological aspect that people don't appreciate that needs to be managed and if that's not managed, …you're not going to get an agile transformation…"*

The ability to live and work with uncertainty was highlighted as a major factor in the resistance. Participants discussed the heavily governed nature of the banking industry and how the adoption of agile practices and principles was often a difficult mindset shift for people at all levels within the banks to make. Agile brings with it greater autonomy, greater responsibility, and much less reliance on

waterfall governance gates, while simultaneously requiring people to operate with more fluidity and uncertainty.

Participant 9: *"...the other thing is feeling like you're constantly breaking things, it's almost like you feel like you're constantly failing, and I guess it's just being used to and being comfortable with failing early. Those things are what get people uncomfortable and quite frustrated…"*

Participants suggested that resilience and maturity at an individual, leadership and organisational level would be required to overcome this challenge and manage the discomfort, fear or frustration that is sometimes experienced by staff in the transformation process.

Finally, a few participants felt that the banks should have prioritised creating a strategy to manage these 'people-aspects' and further suggest that this strategy should have been implemented upfront in the agile transformation journey.

Participant 4: *"...banks started the digital transformation journey with tech and are all trying to get workforces to adapt... digital transformation should start with the workforce before technology…"*

4.5 Discussion pertaining to Research Question 2

From the perspective of industry leaders, the main challenges of large-scale agile transformations in SA banks include leadership, technical delivery being prioritised over innovation, organisational culture and innovation, governance, and approval processes as well as people.

Many of these challenges align with what has been documented in literature as well as by practitioners to-date. Mudarikwa and Grace (2018), IQ Business (2021) and Kotter (2011) highlight the change management related challenges, which include leadership commitment, and affecting changes to the organisational culture; while the challenges of integration with pre-exisiting structures and processes are highlighted by Paasivaara et al., (2018) and Dikert et al., (2016).

One of the challenges highlighted by this study and not well documented in literature is that of technical delivery being prioritised above innovation in SA banks. Participants observed banks to be very delivery-led, in that they lay emphasis on recognising, and rewarding technical solution output. The main driving force behind the banks' adoption of agile as a methodology has been to deliver solutions into the market in significantly reduced timeframes. This hyper focus on speed seems to have resulted in a culture of being delivery-led, at times to the detriment of innovation.

Innovation frameworks such as design thinking and lean require practitioners to remain in the problem for long periods of time, empathising with the end user and immersing oneself in the aspirations of the end users, as well as the details of the problem before making any attempts to start solving it (Alkema & Chen, 2016). See *Figure 4.5* for a summary of the Design Thinking steps.

While agile and design thinking are both iterative in nature, agile as implemented in SA banks seems to place emphasis on speed to delivery, while design thinking places emphasis on ensuring the correct problem is solved in a customer-centric way. Depending on where an organisation places its value, these methodology priorities can begin to compete as opposed to complementing each other.

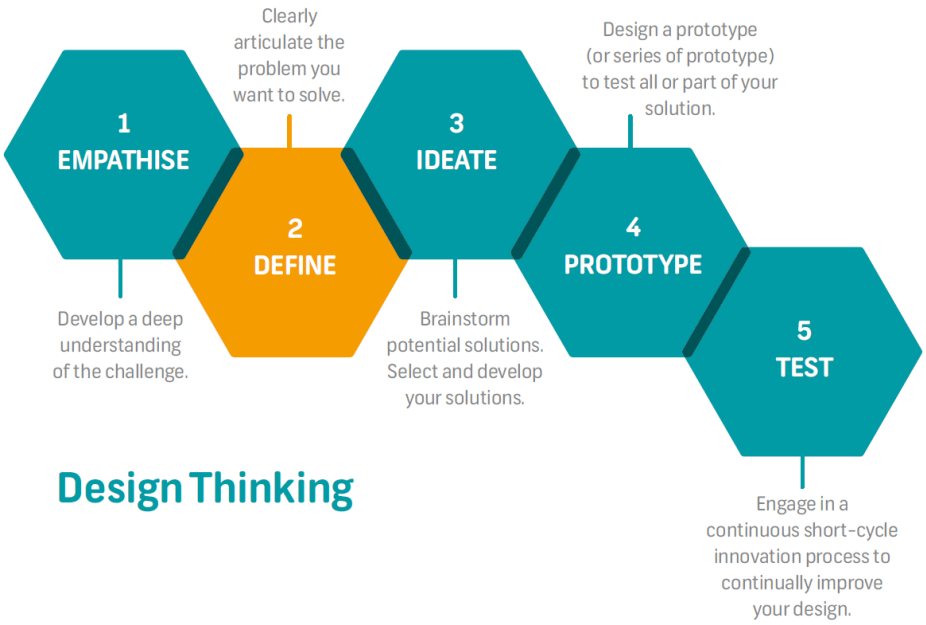


Figure 4.5: Innovation Methodologies - Design Thinking (Source: Alkema & Chen, 2016)

SA banks have done well to adopt agile within their technology departments, resulting in improvements in technical solution delivery, however the banks are still struggling to move this success from only pockets within the organisation into being prevalent across the organisation. The main barriers to achieving full operationalisation of agile are related to ensuring alignment and congruency across the organisation. This includes alignment of leadership across business and IT areas; alignment of supporting areas such as the PMO, COE/COPs, compliance, finance, as well as alignment of the governance and approval processes that regulate how the organisation operates.

4.6 Findings pertaining to Research Question 3

Research Question 3 of the study asks: *What are the lived experiences of leaders in the SA banking industry regarding the success factors of implementing large-scale agile transformations?* In exploring this research question, participants were asked to consider their agile transformation experiences across the top 4 banks as well as outside of the banking industry and offer their views on what the key success factors of large-scale agile transformations are. *Figure 4.6* summarises the main topics discussed by the participants, followed by the presentation and discussion of these views, based on the main themes that emerged during the analysis process.



Figure 4.6: Word Frequency Analysis - Main Success Factors

4.6.1 *Leadership*

All 11 participants interviewed highlighted leadership as a key and enabling success factor in the agile transformation journey. Participants felt that leadership was often the difference between organisations or areas within an organisation conducting a successful agile transformation as compared to those that do not.

Participant 4: *"...specific teams under specific leadership are adopting agile faster or better than others…"*

Participants saw the role of leadership in the agile transformation of their organisations in two parts: 1) setting the direction and expectation regarding the bank's move to agile, including the reasons why this is required and important for the organisation and 2) leadership themselves buying into the transformation and actively supporting and enabling its successful implementation.

a) Setting the direction

Participants suggested that the first and most crucial step in the agile transformation journey is for leadership to make the decision to implement an agile transformation in the organisation and to then communicate this decision in a persuasive way that mobilises the organisation's workforce towards its successful execution.

Participant 1: *"...for any change or transformation the context is important... a statement of intent or a case for the change... 'So we don't get left behind' is not a compelling story…"*

Many participants placed emphasis on how leadership is required to give individuals in the company the 'go-ahead' to change as part of the transformation. Participants suggested that this was particularly important in the banking industry where legacy culture and governance have historically created a command-and-control type of environment, where workforces may often wait for permission, or the directive from leadership before beginning to adopt new practices or methodologies. In addition, participants also proposed that leadership's role is to paint a picture of the organisation's desired future in a manner that not only grants

permission but also creates willingness to go on the journey at both an individual and organisation level.

Participant 1: *"...agile requires a huge level of organisational maturity... unlocking the willingness to change at an organisation and individual level..."*

While participants acknowledged the benefits of bottom-up approaches to manage change within large organisations, many commented that a top-down approach, where leadership is actively involved in driving the change, was mandatory for the agile transformation to be fully operationalised throughout an organisation.

Participant 5: *"...Sustainable and pervasive change will require top-down... the psychological aspects especially in banking where command-and-control is the culture; [the workforce] is conditioned to wait for permission…"*

b) Support and Enablement

Participants commented on some of the factors they considered important regarding leadership supporting and enabling the organisation's agile transformation. These factors included leadership understanding agile as a methodology and having a sound appreciation of the practical and psychological implications of the transformation to the organisation. Participants felt that it was also important that leaders, as well as any other key stakeholders within the organisation, genuinely demonstrate their commitment throughout the agile transformation, and deliver the required maturity and resilience to persevere through the transformation for the process to be successfully implemented.

Participant 8: *"...whenever you're doing something that's significantly transformative, I think you need to get the key decision makers, influencers, leaders... to genuinely sign up... and have the emotional intelligence to realize that they are either genuinely signed up or genuinely signed off… [leadership] has got to understand the theory and they've got to understand the implications of the theory, and then they must support it with their whole emotional aspect of managing the change…"*

Participants advised that one of the ways in which leaders could demonstrate their active support for the agile transformation was through ensuring an environment where agile teams are not only provided the space to learn and explore, but are also provided with autonomy, either through the delegation of decision-making authority, or through easy access to the relevant decision makers.

Participant 9: *"...agile with smaller teams... and if not decision making authority, then we need to have access to the person with the decision-making authority…"*

Some participants went as far as to say the actual methodology or framework used for implementation was less important. Any methodology and any implementation framework could yield the desired results, provided leadership first, successfully manages to communicate the desire to change in a way that mobilises the workforce; secondly, actively supports the process of conducting that change; and finally, sustains the communication and support until the change is successfully realised.

Participant 2: *"...leadership; a shared vision and accountability are human things that are more important than what delivery model you use. Any model can work if this is in place…"*

4.6.2 *Strategy*

Many participants noted organisational strategy as an important success factor in achieving large-scale agile transformation within the banking industry. Participants commented that while agile ensures flexibility and pace in execution, strategic clarity with regards to what the organisation will be leveraging their agile transformation towards, is potentially a more important success factor than the ability to develop solutions using agile. Some participants highlighted that while technology and software development methodologies such as agile are required in the banking industry, they are still just a means of achieving the organisation's aspirations, in that a successful agile transformation is not the end goal, but rather a means to the organisation achieving its business outcomes.

Participant 3: "I think organisations... would be well served to understand that agile is a way of work in the service of something… speed implies moving forward quickly… velocity you have to consider both speed and direction… agile should include making sure you build the right thing as well…"

Participants also discussed strategic alignment across various parts of their organisations as important to ensuring the correct initiatives and solutions are prioritised within the agile transformation. The correct initiatives and solutions would therefore be those that best support the organisation's stated business strategy.

Participant 6: *"...crystal clear strategic intent aligned to a purpose... there are many methods and approaches, but you must still make the correct strategic choices and understand where you're going to play and how you're going to win... leadership just needs to manage those priorities, making sure that they make clear choices… clearer strategies will result in better execution..."*

4.6.3 *Organisational Culture and Innovation*

More than half of the interviewed participants identified the creation and fostering of a culture that enables staff to operate within the principles of agile as a major success factor. Some of the characteristics of this culture, as described by the participants, include an environment that encourages and supports innovation; a safe space that allows project teams the room to test, iterate and pivot where required, and a culture of trust, not only between project team members, but also between project teams and stakeholders. Participants further suggested that a mature and deliberate approach would be required to successfully create this kind of culture.

Participant 4: *"...creating a culture that supports or enables agile... a safe space for the workforce to voice their opinions and their knowledge... embracing failing forward as opposed to punitive leadership styles…"*

Some participants also expressed their opinions regarding the time investment required to successfully build the desired organisational environment and culture.

Participants felt that training for all staff is only one of the necessary steps; intentional day-to-day practice and reinforcement over time is required to bring about the required cultural changes.

Participant 7: *"…organisations or teams should stick to principles and values of agile more consistently and consciously... be deliberate and conscious about changes in behaviour, practices and routines and keeping one another in check... this will shift the culture over time…"*

4.6.4 *Organisational Structure*

Many participants saw organisational structure and operational alignment to be an important consideration for banks implementing a large-scale agile transformation. Participants felt that while it is possible to achieve some of the gains that agile promises relatively early in the implementation process; to realise the full benefits of the undertaking and derive sustainable returns, participants suggest that banks need to reorganise their internal structures to enable the optimal operation of an agile way of working. Participants advised that this could mean extensive changes throughout the organisation to dismantle the more sequential and predictable nature of banking in the waterfall world and introduce agile-friendly structures that also support better collaboration and iterative innovation within the organisation.

Participant 8: *"...so many things that you would normally typically do in terms of waterfall thinking now need to be changed throughout the organisation to iterative type thinking and that in itself is a paradigm shift... governance, finance, development, specifications, testing, deploying; everything's got to change to iterations not just single events…"*

Some participants went further to suggest that the many governance forums, committees, and centres of excellence typically found in banks, needed to assess their primary objectives in the context of the agile world and potentially consider a move away from waterfall gate-approval related activities primarily, towards actively participating in and even driving the organisation's large-scale agile transformation.

Participant 3: *"…the primary order question that I believe [governance forums] should be dealing with is… 'How do we mobilise everybody in this organisation; practitioners, non-practitioners…, clusters, supporting clusters; how do we mobilise everybody to activate this aspiration?'…"*

While some participants felt that their bank's still required significant organisational structure and operating model changes to be implemented, others commented that these were either in progress, or that the necessary changes had already been conducted in various parts of their organisations.

4.6.5 *People*

Proper consideration and management of the psychological aspects and mindset shifts required from the workforce was highlighted as a success factor. Some of the elements mentioned by the interviewed participants were 1) remaining close to project and non-project teams attempting to work in an agile manner, and 2) understanding the challenges that these team could experience because of working in an iterative manner which includes higher levels of uncertainty than teams may be used to. Participants suggested that these elements be managed through introducing new ways of working in the organisation, as well as implementing ways to support and incentivise the desired behavioural shifts.

Participant 8: *"...you've really got to manage by walking around and understanding the insecurities that people have… so know they'll feel nervous and make them feel OK about it. Then… the other people that might hold them to account… make sure they give them some leeway because you're adopting something new and different…"*

A few participants also suggested that identifying early adopters or influential stakeholders and team members in the organisation with the ability and willingness to learn, and leveraging this to demonstrate the required mindset shift and build the initial success use cases that will drive organisation-wide adoption.

Participant 9: *"...a useful way of doing it would be to identify people who can... deal with the discomfort of building up new skills and new capabilities…"*

4.6.6 *Change Management & Implementation*

Six of the 11 participants cited change management and implementation as a critical success factor in driving an agile transformation. Emphasis was placed on both top-down and bottom-up change management efforts being required throughout the implementation process. Participants expressed that they saw value in starting off the agile transformation small or in a contained environment, to gathering learnings and use these to improve their implementation approach and processes before attempting to systematically transform other parts of the organisation.

Participant 6: *"...start small, show the success, and iron out imperfections adjust or remove what's not working well, then expand. Don't go big bang; test, learn improve. Scaling too quickly will result in scaling the imperfections as well…"*

Participants highlighted the lengthy time required for this transformation to move from only being successfully implemented in some pockets of the organisation to becoming the main way of operating for the organisation. A few participants suggested that large organisations such as the SA banks would require much longer than smaller, more nibble organisation to fully transform.

Participant 11: *"...it's going to take years, 7 to 10 years in my opinion, before it perfects the way it executes these types of projects versus a start-up which is 7 to 10 months... because the bank's internal structures are so big…"*

Lastly, participants also highlighted the need for measures to determine progress and incentivise the move towards agile.

Participant 8: *"...then you actually have to walk the talk... you've got to have some kind of measurement structure in place that helps the leadership know whether you as an organisation are actually walking the talk and whether you are not walking the talk…"*

4.7 Discussion pertaining to Research Question 3

The literature review conducted here suggested that the main success factors of a large-scale agile transformation include management support, a customised transformation approach and agile training and support (Dikert et al., 2016; Kalenda et al., 2018; Paasivaara et al., 2018; Pountney, 2017 & Mako, 2019).

Management support speaks to leadership buy-in and commitment to the transformation and the alignment of agile values and practices (Kalenda et al., 2018; Paasivaara et al., 2018; Dikert et al., 2016 & Mako, 2019). The study found that the key role of leadership in the transformation is to set the direction for the change, then support and enable it. These steps align to those detailed in literature regarding change management in large organisations (Kotter, 2011). There are mixed opinions regarding whether banks are getting this right, however consensus exists in concluding that more top-down change management efforts are required, including measures and incentives.

The part of the leadership responsibility that did not seem to come up in detail in the literature but came up strongly in the study was strategy. The importance of ensuring there is clarity in what the organisation's agile transformation is being leveraged towards i.e., the link between organisation's strategic aspirations and the execution through agile methodologies. SA banks seem to be struggling with this, focusing on speed of delivery as the main challenge they are trying to overcome in their move from waterfall, and maybe not paying enough attention to ensuring top-down alignment with execution layers.

Literature documents various challenges with AT frameworks and concludes that these need to be customised by the implementing organisation in order to be effective in their environments (Kalenda et al., 2018; Dikert et al., 2016 & Paasivaara et al., 2018).

This study confirms that while frameworks such as SAFe are attempting to include overall organisational considerations, customisation of frameworks for the conditions in SA banks remains a crucial step in the implementation process. The banks seem to be managing this aspect adequately, displaying a willingness to

adjust and amend frameworks as required while also introducing hybrids where necessary to assist their large structures with the transition. The study further highlighted the approach of starting small, piloting, and resolving weaknesses before scaling agile throughout the organisation as being key to ensuring that gaps and process failures are not scaled as well.

Agile training and support was also listed as one of the success factors in literature (Paasivaara et al., 2018; Dikert et al., 2016; Mudarikwa & Grace, 2018 & Kalenda et al., 2018). While agile training was discussed as one of the agile implementations aspects that are well executed in the SA banking industry, the study did not find this to be a success factor. It would be erroneous to deduce that the reason for this is due to training no longer being a key factor in large-scale agile transformations; rather, the finding of the study suggests that organisation-wide training has been well implemented in most SA banks. Experts and coaches have been leveraged well, staff is competent in the principles and practises of agile and SA banks have successfully moved past this phase of their implementation journey.

4.8 Summary of the findings and discussion

SA banks have done well to begin their digital transformation and large-scale agile transformation journeys in earnest. Some of the benefits that have started to materialise include reduced time to market and improved customer experience. While progress is being made, the incumbents are not yet reaping the full potential and rewards of agile.

Banks have adopted and customised agile scaling frameworks such as SAFe in their transformation journeys. While these have been useful, they have not adequately assisted banks with managing misalignments between business and IT areas, and between agile and non-agile areas within the organisations. Naidoo and Rikhotso (2021) suggest that the reason AT frameworks fail is due to their over emphasis on autonomy. Highly governed organisations such as banks should consider adopting agile scaling approached that balance autonomy and control for more effective agile transformations.

While technical delivery through agile is progressing, SA banks still seem to be struggling with a range of factors in the AT journey. These include leadership's attitude towards agile; creating innovation-and-agile-friendly organisational culture; adjusting governance and funding processes to better align with iterative ways of working and effective management of the people-aspects of the agile transformation. An additional challenge which emerged from the study, and which has not been highlighted in literature is the prioritisation of technical delivery over innovation within the banking industry.

In discussing the success factors of agile transformation in SA banks, the study found that aspects such as leadership, organisational culture and innovation, organisational structure as well as change management and implementation to be of significance. Many of these align with what was noted in literature and the banks seems to have incorporated initiatives to leverage these success factors into their implementation journeys. An additional success factor that emerged from the study and requires resolution is finding ways to ensure a much tighter link between the organisation's strategic aspirations and the technical delivery achieved through agile methodologies.

CHAPTER 5. CONCLUSION & RECOMMENDATIONS

5.1 Introduction

The closing chapter of this report details the main conclusions of the research study conducted. Section two to four of the chapter presents conclusions based on the three propositions included in the research study. This is followed by a section offering some recommendations for incumbent banks, including project teams and business implementation teams undergoing large-scale agile transformations in the SA banking industry. The last section of the chapter offers fellow researchers some suggestions for future study.

5.2 Conclusions regarding Proposition 1

Proposition 1 states that *large scale agile transformations in the SA banking industry are more likely to succeed when implemented in conjunction with digital transformation, change management, and technology adoption strategies.*

This proposition was confirmed to be an accurate representation of the reality being experienced by leaders in the SA banking industry. The study found that large-scale agile transformations in the SA banking industry would be more effective and sustainable if greater organisational congruency existed in the banks (Lee, 2019).

Digital transformation deals with congruency across and organisation's digital capabilities and leadership capabilities to achieve digital maturity (Buvat, et al., 2018; Westerman, et al., 2012). Change management deals with alignment across people practises and the organisational structures required in the agile transformation implementation process. Lastly, technology adoption deals with the ways in which varying agile maturity levels within and outside of the banks can be managed effectively. All three facets must be considered to successfully implement large-scale agile transformations in the SA banking industry. See *Table 2.1: Architectural framework with relevant examples pertaining to this research study* for a summary of the various parts of SA banks the that would need to be aligned to achieve organisational transformation.

5.3 Conclusions regarding Proposition 2

The main challenges of large-scale agile transformations as described in literature and confirmed by the lived experiences of leaders in the SA banking industry are organisational change management and integrating with existing processes.

Organisational change management speaks to leadership's ability to create awareness of the agile transformation need within their organisations; support and enable execution of the transformation, then finally implement and sustain the transformation through ongoing measurement and management. Integrating with existing processes deals with the implementation of initiatives to drive the required culture, structure and governance and approval process changes to enable agile to operate correctly within the organisations.

Literature suggested that introducing agile expertise was also a major challenge in implementing large-scale ATs, however this study found that this aspect of the agile transformation was well executed and did not fall under the main challenges discussed by the interviewed participants.

While organisational change management and integrating with existing processes remain major challenges, introducing agile expertise into banking environments is not. Instead, the prioritisation of technical delivery over innovation has emerged as a new challenge to large-scale agile transformations in the SA banking industry.

5.4 Conclusions regarding Proposition 3

Proposition 3 states that *the main success factors of large-scale agile transformations include management support; customised transformation approach; and agile training and support.*

This study confirmed management support as a success factor, further stressing the importance of leadership's role in the change management and implementation process, in managing the people-aspects of the transformation

and in creating an organisational culture and structure that enables agile to operate properly within the bank.

Customisation of agile scaling frameworks also remains an important success factor, however agile training and support did not feature in the list of success factors discussed in this study. Strategy came out strongly as a new success factor in the study; this aspect emphasised the need for banks to remain cognisant that technology and agile are just tools in the digital transformation journey. Banks should therefore guard against neglecting the strategic intent behind their agile transformations and becoming *"Fashionista"* organisations as described by Westerman et al. (2012, 2014) and Buvat, et al., (2018).

5.5 Recommendations

To implement more effective and sustainable large-scale agile transformations in the SA banking industry, it is recommended that the incumbent banks:

- Explore a balance between autonomy and control as suggested by Naidoo and Rikhotso (2021) to better manage the challenges that still exist regarding organisational structure and operational misalignment within the banks.

- Explore how the primary function of COE/COPs, governance committees and other supporting areas may need to change where a balance between autonomy and control is being prioritised across the organisations.

- Explore ways to better align their business strategies to execution through elevating innovation and solving for the emotional, or less tangible needs of customers, above the delivery of technical solutions.

- More deeply contemplate the human aspects of large-scale agile transformations in the SA context

5.6 Suggestions for further research

As the adoption of agile becomes more prevalent in SA, an increasing number of large corporates are implementing large-scale agile transformations. As more corporates in increasing industries experience this transformation journey, many opportunities for further study, to validate, revise and/or add to the findings of this research, are emerging. Below are a few suggestions for fellow researchers.

a) *Experiences of other leadership layers in the SA banking industry*

This research study centred on the experiences and insights of senior managers, department heads, functional heads, and divisional executives in the top 4 SA banks. These leaders are typically responsible for driving the agile transformation agenda within their organisations, therefore their experiences and views regarding how effective they have been in this task may differ from those of other more senior (e.g., Group Executives) or more tactical (e.g., Team Leads) leadership layers within their organisations.

It is suggested that a similar study, including and contrasting the experiences of other management layers within the top 4 banks is required to assist with a more homogenous understanding of large-scale agile transformations in the SA banking industry.

b) *The agile transformation of large corporates in SA*

While sectors such as financial services and telecommunications have led agile in SA, agile adoption is now growing outside of these industries into large corporates in industries such as professional services and consulting, retail, legal, as well as the health sector (IQ Business, 2021). In addition, the global pandemic and shift to WFH is sure to have fast-tracked this adoption further across all industries (FSCA, 2022).

This research study explored large-scale agile transformation experienced in the SA banking industry, and specifically the top 4 banks. It is suggested that a similar study, be conducted to explore agile implementations in large SA corporations in

general, thus building on the body of knowledge on large-scale agile transformations in the SA context.

c) *A deeper dive into the human aspects of large-scale agile transformations in SA*

During the interviews conducted in this research study, participants discussed the 'people-aspects' of large-scale agile transformations at length. Some of the topics covered included individual maturity and resilience in the SA context and how this may impact organisational maturity and resilience; as well as the more emotional and psychological considerations of the transformation, and whether these are currently being mishandled due to agile implementation being more focused on technical delivery as opposed to the human factors of the transformation.

While the human elements of change management in general are well understood, it may be worthwhile to more deeply understand this in the context of the large-scale agile transformations in SA specifically as a country that overall is still in the infancy stages of its digital transformation journey.

REFERENCES

© Scaled Agile, Inc. (2021, February). *SAFe Implementation Roadmap*. Retrieved January 2023, from Scaled Agile Framework®: https://www.scaledagileframework.com/implementation-roadmap/

Agile Alliance. (2020). *https://www.agilealliance.org/agile101/*. Retrieved from https://www.agilealliance.org.

Alkema, P., & Chen, D. J.-J. (2016). *Digital disruption and the SA banking industry: New imperatives for leadership and innovation.* Gordon Institute of Business Science; University of Pretoria.

Almeida, F., & Espinheira, E. (2021, March). Large-Scale Agile Frameworks: A Comparative Review. *Journal of Applied Sciences, Management and Engineering Technology, Volume 2* (Issue 1), 16-29.

Armstrong, B. (2018). *Exposure of the South African Economy to Technological Disruption – A Sectoral View (Working Paper).* Wits Business School.

Braun, V., & Clarke, V. (2012). Thematic analysis. *APA handbook of research methods in psychology APA handbook of research methods in psychology, Vol. 2: Research designs: Quantitative, qualitative, neuropsychological, and biological*, 57-71.

BusinessTech. (2022, March 16). *South Africa's best and worst banks, according to customers*. Retrieved from BusinessTech: https://businesstech.co.za/news/banking/568616/south-africas-best-and-worst-banks-according-to-customers-3/

Buvat, J., Puttur, R. K., Bonnet, D., Slatter, G. W., Marisa, & Crummenerl, G. W. (2018). *Understanding digital mastery today: Why companies are struggling with their digital transformations.* Capgemini Research Institute. Retrieved from https://www.capgemini.com/wp-content/uploads/2018/07/Digital-Mastery-DTI-report_20180704_web.pdf

Caulfield, J. (2022, November 25). *How to Do Thematic Analysis | Step-by-Step Guide & Examples*. Retrieved from Scribbr: https://www.scribbr.com/methodology/thematic-analysis/

Charlick, S., Pincombe, J., McKellar, L., & Fielder, A. (2016). Making sense of participant experiences: IInterpretative Phenomenological Analysis in Midwifery Research. *International Journal of Doctoral Studie, 11*, 205-216. Retrieved from http://www.informingscience.org/Publications/3486

Conboy, K., & Carroll, N. (2019). Implementing Large-Scale Agile Frameworks: Challenges and Recommendations. *IEEE Software*. doi:10.1109/MS.2018.2884865

Consulta. (2020, March 18). *The Banking sector needs to strike a balance between digital and traditional delivery channels*. (South African Customer Satisfaction Index (SA-csi) for Banking) Retrieved from https://blog.consulta.co.za/the-banking-sector-needs-to-strike-a-balance-between-digital-and-traditional-delivery-channels/

Consulta. (2021, March 15). *The Battle of the Banks in Customer Loyalty and Satisfaction Stakes Hits a High in Digital COVID Economy*. (South African Customer Satisfaction Index (SA-csi) for Banking) Retrieved from https://blog.consulta.co.za/the-battle-of-the-banks-in-customer-loyalty-and-satisfaction-stakes-hits-a-high-in-digital-covid-economy/

Creusen, S., & Brittmark, H. (2018). *Demystifying Agile: The case of a fantasy project?* Lund University.

de Souza, J. V. (2020). *Moving from traditional to Agile information systems development in a large organisation: two complementary models of organisational Agile implementation.* Curtin Business School; Curtin University, School of Information Systems.

Dikert, K., Paasivaara, M., & Lassenius, C. (2016). Challenges and success factors for large-scale agile transformations: A systematic literature

review. *The Journal of Systems and Software, 119*, 87–108. doi:http://dx.doi.org/10.1016/j.jss.2016.06.013

FSCA. (2022). *Financial Sector Outlook Study.* Genesis Analytics in partnership with the Financial Sector Conduct Authority.

Fuchs, C., & Hess, T. (2018). Becoming Agile in the Digital Transformation: The Process of a Large-scale Agile Transformation. *Thirty Ninth International Conference on Information Systems.* San Francisco.

Gunal, V. (2012, August 3). Agile Software Development: Approaches and Their History. *Enterprise Software Engineering 2012: Agile Software Development (Seminar).*

Hiatt, J. (2006). ADKAR: A Model for Change in Business.

IQ Business. (2021). *State of Agile Africa.*

Johnston, K. A., & Gill, G. (2017). Standard Bank: The Agile Transformation. *Journal of Information Technology Education: Discussion Cases, 6*. doi:https://doi.org/10.28945/3923

Kalenda, M., Hyna, P., & Rossi, B. (2018). Scaling agile in large organizations: Practices, challenges, and success factors. *Journal of Software: Evolution and Process*. doi:10.1002/smr.1954

Kane, G., Phillips, A., Copulsky, J., & Andrus, G. (2019). *The technology fallacy: How people are the real key to digital transformation* (1st ed.). London: The MIT Press.

Karlsson, J. (2019, January 9). *Principles of Good Large-Scale Agile*. Retrieved from The New Stack: https://thenewstack.io/principles-of-good-large-scale-agile/

Khoza, L., & Marnewick, C. (2021, May). Challenges and Success Factors of Scaled Agile Adoption – A South African Perspective. *The African Journal of Information Systems, Volume 13*(Issue 2, Article 2). Retrieved from https://digitalcommons.kennesaw.edu/ajis/vol13/iss2/2

Kolko, J. (2011). *Exposing the magic of design: a practitioner's guide to the methods and theory of sysnthesis.* New York: Oxford University Press.

Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice, 24*(1), 120-124. doi:10.1080/13814788.2017.1375092

Kotter, J. P. (2011). Leading Change: Why Transformation Efforts Fail. *Harvard Business Reviewww, HBR's 10 Must Reads on Change Management, 73*, 59-67.

Lee, G. J. (2019). *Designing Organizations for People-Led Sustainable Competitiveness.* Silk Route Press; 1st Edition (January 13, 2019).

Lester, S. (1999). An introduction to phenomenological research. Taunton UK.

Mako, T. (2019). *Leadership challenges of large-scale agile transformations.* Gordon Institute of Business Science, University of Pretoria.

McKinsey & Company. (2019, August 27). A discussion on Agile in banking: Beyond buzzwords. Retrieved 09 24, 2020, from https://www.mckinsey.com/industries/financial-services/our-insights/banking-matters/a-discussion-on-agile-in-banking-beyond-buzzwords

Mudarikwa, G., & Grace, T. D. (2018). Agile System Development Methodologies Usage and Acceptance in South African Banking Firms: An Exploratory Analysis. *Proceedings of South African Institute of Computer Scientists and Information Technologists*, 248 - 257.

Nadler, D., & Tushman, M. (1980). A model for Diagnosing Organizational Behaviour. *Organizational Dynamics, 9*(2), 35-51.

Naidoo, R., & Rikhotso, S. (2021). Balancing Autonomy and Control Tensions in Large-Scale Agile. *Information Systems Development: Crossing Boundaries between Development and Operations (DevOps) in Information Systems (ISD2021 Proceedings)*, *29th International*

Conference on Information Systems Development. Valencia, Spain: Universitat Politècnica de València.

Paasivaara, M., Behm, B., Lassenius, C., & Hallikainen, M. (2018). Large-scale agile transformation at Ericsson: a case study. *Empir Software Eng, 23*, 2550–2596. doi:https://doi.org/10.1007/s10664-017-9555-8

Pountney, P. (2017). *Agile beyond the sweet-spot: insights and recommendations.* Research Gate. Retrieved from https://www.researchgate.net/publication/340883319

PwC. (2017). The future of banking: A South African perspective. South Africa. Retrieved from www.strategyand.pwc.com

PwC. (2018). A marketplace without boundaries 2.0: Digital disruption in the South African banking sector.

Rigby, D. K., Sutherland, J., & Noble, A. (2018, May). *Agile at Scale*. Retrieved from Harvard Business Review: https://hbr.org/2018/05/agile-at-scale

Rogers, E. (1995). Diffusion of Innovations. (4th, Ed.) *New York: The Free Press*.

Schindler, P. S. (2019). *Business Research Methods, 13th Edition.* New York, United States of America: McGraw-Hill/Irwin, a business unit of The McGraw-Hill Companies, Inc.

Shan, J., Wade, M., & Noronha, A. (2017). *Life in the Digital Vortex - The State of Digital Disruption: 2017.* Global Center for Digital Business.

Terrar, D. (2015, February 15). *What is Digital Transformation?* Retrieved from theagileelephant.com: http://www.theagileelephant.com/what-is-digital-transformation/

Varhol, P. (2015, August 26). *To agility and beyond: The history—and legacy—of agile development*. Retrieved from techbeacon.com: https://techbeacon.com/app-dev-testing/agility-beyond-history-legacy-agile-development

Westerman, G., Bonnet, D., & McAfee, A. (2014). Leading Digital: Turning Technology into Business Transformation. Harvard Business Review Press.

Westerman, G., Tannou, M., Bonnet, D., Ferraris, P., & McAfee, A. (2012, November). The Digital Advantage: How digital leaders outperform their peers in every industry.

Yoshida, T. (2018, May 22). *A pretty good summary of Lean, Agile, Scrum.* Retrieved from A cornerstone article by Lifecycle : https://lifecycle.management

APPENDIX A: Interview Guide

Objective	Research questions	Interview questions
Introduction *(On email before scheduling of the online interview)*	None	• Explain purpose of the study • Explain interview process • Request participation • Obtain consent
Respondent background information	None	1. Professional experience and exposure: banking industry and agile 2. Current role 3. High-level perceptions regarding bank(s) agile transformation journey
1. To explore the process of implementing large-scale agile transformations in the SA banking industry	1. What are the lived experiences of leaders in the SA banking industry with regards to the process of large-scale agile transformations?	4. Which transformation processes, frameworks or approaches have you been exposed to during agile implementations? 5. Considering your experience in agile transformations, what worked well and what do you think could have been done differently?
2. To explore the challenges of implementing large-scale agile transformations	2. What are the lived experiences of leaders in the SA banking industry regarding the challenges of implementing large-	6. Based on your own experience, what are the main challenges experienced in large-scale agile transformations? 7. Were these challenges specific to large-scale agile transformation or

	scale agile transformations?	general organisational transformation challenges?
3. To explore the success factors of implementing large-scale agile transformations	3. What are the lived experiences of leaders in the SA banking industry regarding the success factors of implementing large-scale agile transformations?	8. Based on your own experience, what are the main success factors for large-scale agile transformations? 9. Were these success factors specific to large-scale agile transformation or general organisational transformation success factors?

APPENDIX B: Research Participant Information Sheet



Research Participant Information Sheet

Good Day

My name is Asanda Wayi, and I am a Master of Management student in the field of Digital Business at the University of the Witwatersrand, Johannesburg. As part of my studies, I must undertake a research project, and I am investigating large-scale agile transformations under the supervision of Dr Euphemia Godspower-Akpomiemie. The aim of this research project is to explore and derive meaning from the lived experiences of leaders implementing large-scale agile transformations in the SA banking industry.

As part of this project, I would like to invite you to take part in an interview. This activity will involve a single session of answering questions related to your thoughts and experiences with large-scale agile transformations and will take around 45 - 60 minutes. With your permission, I would also like to record the interview using a digital device.

There will be no personal costs to you if you participate in this project, you will not receive any direct benefits from participation but there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The interview will be completely confidential and anonymous as I will not be asking for your name or any identifying information during the interview, and the information you give to me will be held securely (in digital form and with all identifying features removed) and not disclosed to anyone else. To further protect the confidentiality of all organisations and individuals concerned, I will be using tags such as *"Participant 1"* and *"Bank A"* to represent your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me on the details listed below. This study will be written up as a research report which may be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you. With your permission the data collected from this research project may be used by other researchers. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrec-medical.researchoffice@wits.ac.za

Yours sincerely,
Asanda Wayi

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APPENDIX C: Research Participant Consent Form



Research Participant Consent Form

Title of project: *Large-scale agile transformations: experiences in the South African banking industry*

Name of researcher: *Khuselwa Asanda Wayi*

I, ……....., agree to participate in this research project. The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please select the relevant options below)

I agree that my participation will remain anonymous	☐ YES	☐ NO
I agree that the researcher may use anonymous quotes in their research report	☐ YES	☐ NO
I agree that the interview may be audio recorded	☐ YES	☐ NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	☐ YES	☐ NO

……..… *(signature)*
…… *(Name of participant)*
…… *(date)*

…… *(signature)*
……..… *(name of person seeking consent)*
……..…… *(date)*

APPENDIX D: Organisational Architecture Frameworks

Presented below are two popular examples of organisational architectural frameworks:

1. Nadler-Tushman Congruence Framework

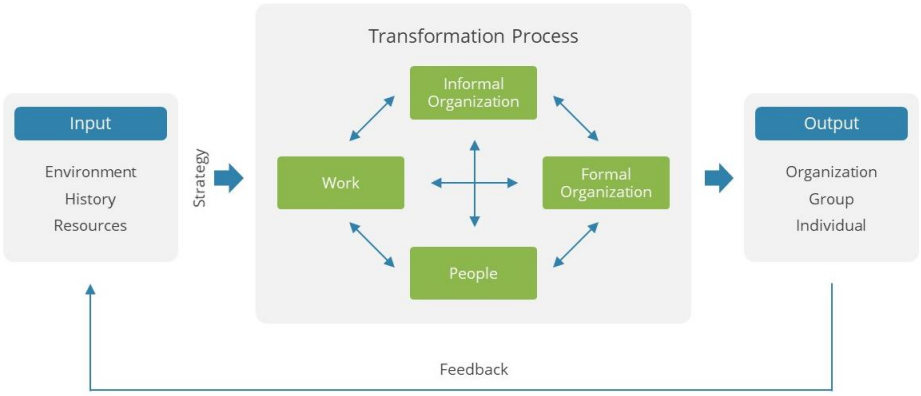


Figure E-0.1: "A model for diagnosing organisational behaviour" (Nadler & Tushman, 1980)

2. McKinsey 7-S Framework

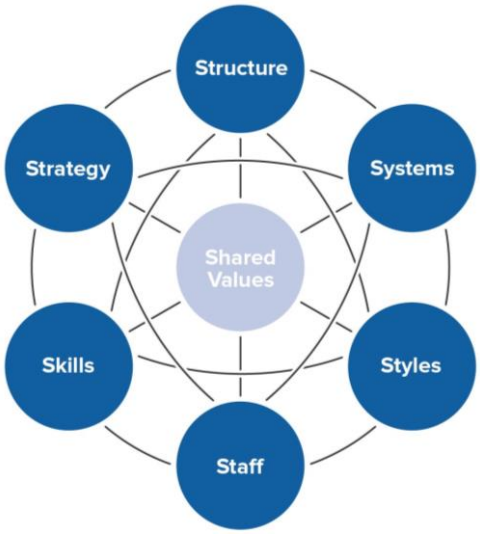


Figure E-0.2: McKinsey 7-S Framework (McKinsey & Company, 1980)

APPENDIX E: Change Management Models

Presented below are three popular examples of organisational change management models:

1. ADKAR Model for Individual Change



Figure F-0.1: ADKAR model for individual change (Hiatt, 2006)

2. Kotter's 8-step Change Model



Figure F-0.2: Kotter's 8-step change model (Kotter, 2011)

3. Westerman's Digital Transformation Compass



Figure F-0.3: Digital Transformation Compass (Westerman et al., 2014)