

**Digital Leadership Skills that South African Leaders need for Successful
Digital Transformation**

Asmitha Tiekam
Student No: 98102398

A research report submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration

11 November 2019

ABSTRACT.

Digital transformation is occurring all around us and leaders need the right skills to lead in this disruptive age, or face having their organisation being replaced by more dynamic and adaptive competitors. South African leaders and organisations are considered laggards in digital transformation. The purpose of this research is to understand the digital leadership skills, the type of leader required to carry out successful digital transformation, by investigating those leaders that have carried out digital transformation successfully in their organisations, and how they acquire and maintain these skills.

The research approach took the form of a qualitative, exploratory research design that involved 17 face-to-face, semi-structured, in-depth interviews across 9 different industries. The participants interviewed included CIOs, Managing Directors of IT, CDOs, Directors of Digital Transformation, Digital Transformation Officers, Heads of Digital, Heads of IT, and a Head of HR, all of whom are directly involved in the decision making and execution of digital transformation in their organisations.

The research aimed to determine if adaptive leadership, based on the Complexity Leadership Theory was relevant for a disruptive digital transformation environment, and if the key traditional leadership skills from the Skills Strataplex i.e. cognitive skills, business skills, influencing/interpersonal skills, and strategic skills were relevant for successful digital transformation. The results from the study indicated that adaptive leadership is relevant and that all four key traditional skills were equally required; however, additional skills namely entrepreneurial skills/mind-set, having a challenger mind-set, and meta-cognitive skills were also required. The key digital leadership skills identified as necessary include an understanding of technology, a leader's ability to learn from failure, resilience and the ability to stand up for one's beliefs, and the ability to collaborate. These skills, together with the kind of leadership required, would impact the people and the cultures that were emphasised by the study as being key components to successful digital transformation, and have resulted in the creation of the Adaptive Digital Leadership Skills Model. The findings from this study contribute to the extant literature in the field of digital leadership skills.

KEYWORDS.

Digital Transformation, Digitalisation, Digital Leadership, Leadership, Digital Skills, Skills, Adaptive leadership.

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Signed: Asmitha Tiekam

Date

CONTENTS

CHAPTER 1: PROBLEM DEFINITION AND PURPOSE	1
1.1 Introduction and Description of the Problem	1
1.2 Purpose of the Research	4
1.3 Research Problem.....	5
1.4 Research Scope	6
1.5 Research Definitions	6
1.6 Research Structure	7
CHAPTER 2: LITERATURE REVIEW	8
2.1 Introduction	8
2.2 Digital Transformation	8
2.2.1 What is Digital Transformation?	8
2.2.2 Digital Transformation in South Africa	11
2.3 Theory on Leadership.....	18
2.3.1 The Importance of Leadership in Digital Transformation	18
2.3.2 Adaptive Leadership	21
2.3.3 Digital Leadership	25
2.4 Skills	28
2.4.1 Leadership Skills	28
2.4.2 Leadership Skills Strataplex	28
2.4.2 The VUCA PRIME Model	31
2.4.3 Digital Leadership Skills	33
2.4.4 How can these skills be kept up to date	35
2.5 Conclusion	38
CHAPTER 3: RESEARCH QUESTIONS	40
3.1 Introduction	40
3.2 The Research Questions	40
CHAPTER 4: RESEARCH METHODOLOGY	43
4.1 Introduction	43
4.2 Research Methodology and Design.....	43
4.3 Population	46
4.4 Unit of Analysis	46
4.5 Sampling Method and Sampling Size.....	47
4.6 Research Instrument	49
4.7 Data Collection.....	50

4.8	Data Analysis	52
4.9	Data Validity and Reliability	54
4.10	Research Limitations.....	54
CHAPTER 5: RESULTS		56
5.1	Introduction	56
5.2	Description of Sample	56
5.3	Presentation of results	58
5.4	Results for Research Question 1	58
5.5	Results for Research Question 2.....	60
5.5.1	Organisation Examples of Digital Transformation.....	60
5.5.2	Factors Contributing to Successful Digital Transformation	61
5.6	Results for Research Question 3.....	65
5.6.1	What kind of leadership is required for digital transformation?	66
5.6.2	To what Extent does Adaptive Leadership Contribute to Digital Transformation?	74
5.7	Results presented for Research Question 4.....	80
5.7.1	Respondents' Understanding of Digital Leadership.....	81
5.7.2	Key Skill Types – Cognitive, Behavioural, Strategic, and Influencing	83
5.7.3	Digital Leadership Skills for South African Leaders.....	92
5.7.4	Which Digital Leadership Skills are Most Important.....	97
5.7.5	Which Digital Leadership Skills used in Respondents' Organisations were Key for Successful Digital Transformation.....	101
5.8	Presentation of Research Question Research Question 5	104
5.8.2	How are digital leadership skills being acquired?	105
5.8.3	How are digital leadership skills being kept up to date?	108
5.9	Additional Key Themes that came out of findings	110
5.9.1	New theme: People	110
5.9.2	New theme: Culture	111
5.10	Conclusion	112
CHAPTER 6: DISCUSSION OF RESULTS		114
6.1	Introduction	114
6.2	Discussion of Results for Research Question 1.....	114
6.2.1	What is digital transformation?.....	114
6.2.2	Conclusive findings for Research Question 1.....	117
6.3	Discussion of Results for Research Question 2.....	118
6.3.1	Factors that Contribute to Successful Digital Transformation	119
6.3.2	Conclusive findings of Research Question 2	124
6.4	Discussion of Results for Research Question 3.....	125

6.4.1 What kind of leadership is required for digital transformation?	126
6.4.2 Discussion of Results as per Research Sub-Question 3.2.....	132
6.4.3 Conclusive findings for Research Question 3	137
6.5 Discussion of Results for Research Question 4.....	138
6.5.1 Leadership’s Understanding of Digital Leadership	138
6.5.2 Digital Leadership Skills Needed for Successful Digital Transformation	140
6.5.3 Conclusive findings in answering Research Question 4.....	152
6.6 Discussion of Results for Research Question 5.....	154
6.6.1 How are leaders acquiring digital leadership skills	154
6.6.2 How are leaders Keeping these Digital Leadership Skills up to Date	156
6.6.3 Conclusive findings of Research Question 5	157
6.7 Conclusion	158
CHAPTER 7: CONCLUSION AND RECOMMENDATIONS	160
7.1 Introduction	160
7.2 Principal Findings.....	160
7.3 Implications for Management and other Stakeholders Impacted by Digital transformation	165
7.4 Limitations of the Research	166
7.5 Suggestions for Future Research.....	166
7.6 Conclusion	167
REFERENCE LIST	168
APPENDIX 1: INVITATION LETTER.....	182
APPENDIX 2: CONSENT FORM.....	183
APPENDIX 3: INTERVIEW GUIDE.....	184
APPENDIX 4: ETHICAL CLEARANCE LETTER	185
APPENDIX 5: CONSISTENCY MATRIX	186
APPENDIX 6: FIGURES FROM RESPONDENT - P3	188
APPENDIX 7: CODE BOOK FROM ATLAS TI.	190

LIST OF FIGURES

FIGURE 1: DIGITAL LEADERSHIP SKILLS FRAMEWORK.....	39
FIGURE 2: KEY COMPONENTS OF RESEARCH.....	42
FIGURE 3: POINT OF SATURATION REACHED.....	52
FIGURE 4: COGNITIVE SKILLS MODEL	84
FIGURE 5: ADAPTIVE DIGITAL LEADERSHIP SKILLS MODEL.....	161

LIST OF TABLES

TABLE 1: INTERVIEW SAMPLE	48
TABLE 2: LIST OF INTERVIEWEE'S AND THEIR INDUSTRY	57
TABLE 3: KEY FACTORS FOR SUCCESSFUL DIGITAL TRANSFORMATION	65
TABLE 4: KIND OF LEADERSHIP REQUIRE FOR SUCCESSFUL DIGITAL TRANSFORMATION	74
TABLE 5: COMPARISON OF LEADERSHIP FOR DT AND ADAPTIVE LEADERSHIP CHARACTERISTICS	76
TABLE 6: ADAPTIVE LEADERSHIP SKILLS.....	80
TABLE 7: INTERPRETATION OF DIGITAL LEADERSHIP CHARACTERISTICS	83
TABLE 8: COGNITIVE SKILLS COMPARISON PER MODEL AND FROM RESPONDENTS	84
TABLE 9: BUSINESS SKILLS PER RESPONDENT'S	86
TABLE 10: INFLUENCING SKILLS AS PER RESPONDENT'S.....	88
TABLE 11: STRATEGIC SKILLS AS PER RESPONDENT'S.....	89
TABLE 12: ALL KEY STRATAPLEX SKILLS	92
TABLE 13: DIGITAL LEADERSHIP SKILLS FOR SOUTH AFRICAN LEADERS.....	96
TABLE 14: MOST IMPORTANT SKILLS LISTED FOR SUCCESSFUL DIGITAL TRANSFORMATION	100
TABLE 15: DIGITAL LEADERSHIP SKILLS USED IN RESPONDENTS' ORGANISATION	103

CHAPTER 1: PROBLEM DEFINITION AND PURPOSE

1.1 Introduction and Description of the Problem

Digital transformation is occurring all around us at all times (Reddy, Reinartz, & Reddy, 2017). Digital transformation, also known as digitalisation, is defined by Fitzgerald, Kruschwitz, Bonnet, & Welch (2013) and Singh & Hess (2017) as the use of the latest digital technologies such as, implanted devices, social media, mobile technologies, or analytics that are integrated into all parts of business or an organisation, fundamentally changing how they operate. Value is delivered by restructuring operations, enhancing customer experiences, or creating new business opportunities.

Most organisations today have to implement the relevant technologies and ensure successful transformation, or they face being displaced by their competitors (Fitzgerald et al., 2013 ; Bughin & Van Zeebroeck, 2017). It has been indicated by Fitzgerald et al. 2013, that even organisations that have digitally-savvy leaders and a digital strategy still struggle to successfully undertake digital transformation. Many transformational information systems projects are known to fail with less than forty percent of projects being successful and only thirty percent being successful for larger projects that last longer than three years that cost over a hundred million dollars (Scheepers & Whelpton, 2018).

Despite the need for digital transformation, many organisations are struggling to achieve the core benefits of these technologies for their business, as a result of limitations in leadership and management competence and lack of experience in digital transformation (Fitzgerald et al., 2013). Organisations like Blockbuster, Kodak, Nokia, and Blackberry are examples of organisations in which incorrect decisions were made due to lack of digital foresight and digital leadership competencies, as well as failure to understand the environment and long term benefits, costing these companies a fortune in missed opportunities and profits (Lucas & Goh, 2009; Sainger, 2018).

According to Uhl-Bien, Marion, & McKelvey (2007, p. 298), *“We’re in a knowledge economy, but our managerial and governance systems are stuck in the Industrial*

Era.”. The way businesses operate in the myriad of technologies today has led leadership to realise that they cannot continue using their traditional leadership competencies in the digital era. Companies are rapidly changing to the digital ways of working, but leadership has not yet transformed. As per a report conducted by Deloitte in 2017, high-performing leaders in today’s day and age need more diverse skills and competencies than before. However, most organisations have not progressed fast enough to encourage leadership growth and development in existing and future digital leaders (Deloitte, 2017).

As the world evolves in this digital era it is imperative that leadership gains the right skills with which to manage the impacts on the survival and competitive advantage of the organisation. South African leadership have been known to be digital laggards(BusinessTech, 2018), with only a small percentage of individuals being digital leaders. A report by audit firm Price Waterhouse Cooper’s (PWC) in 2018 has indicated that South African CEOs are concerned about their leadership’s digital skills and the impact this is having in the digital transformation space (PricewaterhouseCoopers,2018; ITWeb, 2018)

Leadership’s role in digital transformation is crucial to every aspect, as it decides the strategy, culture, and skills of its employees and plays a key role in the decision making to take the organisation forward in this digital age. However, as argued by Uhl-Bien, Marion & McKelvey (2007) and other scholars, leadership cannot continue to make decisions with its current leadership skills.

Therefore, digital transformation is not about the technologies alone, a key component is the leadership and the digital leadership skills required to drive successful digital transformation through organisations. Digital Leadership has been defined as, “doing the right things for the strategic success of digitalisation for the enterprise and its business ecosystem” (El Sawy, Amsinck, Kraemmergaard, & Vinther, 2016, p. 148). Decisions around digital transformation cannot be made in isolation anymore, leaders need to consider the surrounding environments and happenings (El Sawy et al., 2016; Deloitte, 2017). Research has also indicated that leadership skills in digital transformation impact an organisation’s maturity, resulting in it not being able to compete in terms of digital leadership (Westerman & McAfee, 2012). According to a 2017 study run by Deloitte on the rules of the digital age, a

critical requirement for organisations is that leaders develop digital capabilities (Deloitte, 2017).

Many leaders want to achieve transformation of their organisation through the new technologies, but not all leaders know how to bring about this transformation (Lordanaglou, 2018). This is because the innovative digital technologies such as mobile technologies, social media, implanted devices and cloud, demand more diverse mind-sets and skillsets than previous generations of technology (Fitzgerald et al., 2013). Companies like Apple, Google, Amazon, and Starbucks are examples of where leaders execute digital transformation approaches well.

Although a some research on leadership in the digital era has been conducted from a global perspective, limited research and literature addressing the combination of digital leadership skills and successful digital transformation globally and in South Africa exists (Provost, Allan Johnston, Tanner, & Allan, 2018). According to Khan (2016), most research has been focused on how digital transformation has been managed or digital change has been led, and is also limited or still exploratory in its field. Digital disruption has been regarded as difficult to identify and understand at times, due to its complexity (Provost, Allan Johnston, Tanner, & Allan, 2018), and the rapid advances in technology and its implications on leadership not being taken into account, resulting in the lack of research. This thus stressing how little is known about digital transformation, and leadership (Schwarz Müller, Brosi, Duman, & Welppe, 2018).

From a South African market perspective, organisations are considered laggards in technology, and according to the global competitive index 4.0 2018 rankings, South Africa dropped five places since 2017 to being ranked 67th out of 140 countries in terms of its global competitiveness, with sub-Saharan countries still ranked the lowest when it comes to competitiveness, innovation, and technology transformation (Schwab, 2018). However, there is limited research relating to the general digital leadership skills needed in South Africa, across any industry to successfully implement digital transformation.

This is further confirmed by Khan (2016, p. 4), who states that “Digital Transformation has not been a strong focus, with most scholars more focused on leadership

theories, and styles that explain leadership practices in complex and changing organisations. The scarcely populated intersection of research between contemporary leadership practices and digitalisation therefore becomes of great interest to further indulge in”.

Therefore in order for South African leaders to acquire the correct digital leadership skills and understand the kind of leader they need to be to carry out successful digital transformation, it is clear that they need to learn from those leaders who have implemented digital transformation successfully so that they can embark on a similar journey to acquire and maintain these skills. In so doing the people of the organisation will think and behave accordingly to the actions of their leaders, thus creating a new digital ready organisational culture (Christensen,2006); (Weiling & Wei, 2004)

1.2 Purpose of the Research

As organisations now compete in volatile, uncertain, continuously changing and a disruptive digital world, leaders are finding that their traditional leadership skills are no longer sufficient (Uhl-Bien, Marion & McKelvey, 2007) and that it is important for the leaders to become digital leaders and acquire the necessary skills to take their organisations forward and ensure their survival in this rapidly-changing world. The purpose of this research is to understand the digital leadership skills South African leaders require to carry out successful digital transformation. The research also intends to build on the study conducted by Duburu (2018), who focused her research, ‘The Critical Competencies of Leaders in Digital Transformation in Banking in South Africa’ only on the banking sector in South Africa. However, this research intends to determine the digital leadership skills required by digital leaders in organisations belonging to any sector that has implemented successful digital transformation for their organization, as well as to understand the kind of leader required and how these successful leaders are acquiring and maintaining their skills.

In understanding the skills that are required by digital leaders, and the kind of leader they need to be for successful digital transformation, this will serve as a guide for management in large corporates, human resource departments, and government departments such as the Department of Trade and Industry (DTI), and other

stakeholders to understand the skills that will be required by their leaders to carry out successful digital transformation. The study aims to also guide leaders in these institutions and even unions on how and where their leaders and future leaders can go about acquiring these digital leadership skills and maintain them to keep abreast in the field.

A lack of research in the field of digital leadership skills and digital transformation has clearly been indicated by scholarly research by Provost et al. (2018), Schwarzmüller et al.(2018) and Khan (2016) and industry research conducted by Deloitte, McKinsey, and MIT Sloan. There is a need for this type of study as not much research has been conducted in the combined field of leadership skills and digital transformation, as is indicated by Duburu (2018). Scholars such as Mumford, Campion, & Morgeson (2007) have argued that, despite the numerous leadership theories available, it is believed that leadership skills have not received sufficient attention. Much of the research in this field has been from a quantitative perspective, thus, this study intends understanding the skills in more detail and the kind of leader required from an South African context, using a qualitative approach.

1.3 Research Problem

The aim of this research is to gain a deeper understanding of what the digital leadership skills are that leaders need to carry out successful digital transformation. The research also intends on understanding the kind of leader that is required, by understanding if being an adaptive leader and its skills are suitable for digital leaders to carrying out successful digital transformation. Finally the research intends on understanding how are leaders acquiring the skills and maintaining them to keep in touch with the happenings of the digital era.

The literature review in Chapter 2 focusses on understanding the kind of leader required for digital transformation, the key digital leadership skills that are needed and the various ways leaders can acquire and maintain their skills. This research aims to be of benefit to leadership by providing a digital leadership skills model for successful digital transformation, which is developed from the existing theories and new insights gained from the interviews with various senior and executive business leaders.

1.4 Research Scope

The scope of this research was to understand what the digital leadership skills are that South African leaders need across any industry to carry out successful digital transformation in their organisations. The Skills Strataplex by Mumford et al. (2007) which is a study of leadership skills over the decades was used as a foundation in understanding if these traditional leadership skills still applied. Complex Leadership Theory was used along with leadership theory to understand the kind of leader one had to be and whether adaptive leadership was relevant for the disruptive environment of digital transformation and how similar the skills were to digital leadership. The research also wanted to understand how do these digital leaders acquire and maintain their skill set to stay ahead for constant digital transformations they have to face. The research will then compare the theory with the findings obtained in the interviews with senior and executive leadership from various industries in South Africa that had carried out successful digital transformation in their organisation.

1.5 Research Definitions

For the purpose of this study, the following definitions apply:

Digital transformation has been defined by Singh & Hess (2017); Fitzgerald et al. (2013a); Westerman, George; Bonnet, Didier; McAfee (2014); and Kohnke (2018), as new digital technologies such as mobile technologies, social media, implanted devices or analytics that is integrated into all parts of business or an organisation, fundamentally changing how business operates and value is delivered. This is achieved by restructuring operations, improving customer experience, and improving operations or creating new business prototypes, thereby enabling major business improvements.

Digitalisation has been defined by Parviainen, Tihinen, Kääriäinen, & Teppola, (2017, p. 64) as “the conversion of analogue data into digital format or the changes associated with the application of digital technology in all aspects of human society”.

Leadership is defined as “in terms of individual traits, leader behaviour, interaction patterns, role relationships, follower perceptions, influence over followers, influence on task goals, and influence on organizational culture.” (Yukl, 1989, p. 252). Leadership is

therefore considered to be about influencing people or a group of people to achieve a common goal (Daft, R. L., 2011) and (Breuer & Szillat, 2019).

Skills has been defined according to Sousa & Rocha (2019) as both an individual and an organisation's resources, which allow the organisation to be more productive and competitive. Mumford et al. (2007) confirm that skills are important and represent competencies that can be developed.

1.6 Research Structure

The remainder of the document is as follows:

- Chapter Two provides an argument, using the current academic literature, on the reason for this study.
- Chapter Three describes the purpose of the research and the various research questions that will need to be answered.
- Chapter Four describes the research methodology used to carry out this study.
- Chapter Five presents the findings from the research that was conducted.
- Chapter Six compares the findings from Chapter Five to the literature reviewed in Chapter Two to understand if the research questions were answered.
- Chapter Seven presents the main findings of the research and provides stakeholder recommendations and areas for future research.

CHAPTER 2:LITERATURE REVIEW

2.1 Introduction

The objective of this chapter is to review the theory that supports this research in terms of understanding the digital leadership skills that South African leaders require for successful digital transformation. The literature review unpacks the three constructs of this research which are digital transformation (DT), which entails an understanding of it and the factors contributing to its success. Another construct is that of leadership, understanding the importance of leadership in this digital age in terms of what kind of leader is required, and investigating whether adaptive leadership is relevant, and understanding what a digital leader is. The final construct that will be explored is that of skills, entailing an understanding of the skills required for successful digital transformation and how leaders can acquire these skills.

2.2 Digital Transformation

2.2.1 What is Digital Transformation?

Since the nineties the impact of technology and technological disruption has grown enormously. According to Fitzgerald, Kruschwitz, Bonnet, and Welch (2013), technology has become of increasing importance in the way people live their lives, the products and services they require, and the choices they make. Loonam, Eaves, Kumar, and Parry (2018) and Bharadwaj, El Sawy, Pavlou & Venkatraman (2013) support this point, stating that organisations supported by digital technologies are bound to grow in performance in this digital age.

Hence, digital transformation, also known as digitalisation, has been defined by Singh & Hess (2017); Fitzgerald et al. (2013); Westerman, George, Bonnet, Didier, and McAfee (2014); and Kohnke (2018) as the integration of new digital technologies such as social media, mobile access, analytics, or implanted devices into all parts of a business or an organisation, essentially changing how they operate. Its value lies in restructuring operations, improving customer experience, and improving operations or creating new business prototypes, thereby enabling major business improvements. Hess, Benlian, Matt, & Wiesböck (2016, p. 124) add to this definition, stating that “digital transformation is concerned with the changes digital technologies

can bring about in a company's business model, which result in changed products or organizational structures or in the automation of processes". These definitions will be used throughout this paper to define the components of digital transformation. Kohnke (2018, p. 70) states that digitalisation comprises four types of technologies at present:

- "a) Analytic technologies and applications including 'big data' that allow innovative forms of information processing for better insights and decision making.
- b) Mobile technologies like smartphones and tablets as well as applications that enable new business scenarios for customers, partners, suppliers, and employees.
- c) Cloud technologies and solutions that offer flexible and shareable digital capabilities (e.g., marketplaces, software as a service) to drive business agility.
- d) Social media technologies and applications that facilitate new forms of social interactions."

Digital Transformation is therefore occurring all around us at all times and impacting almost everything, according to Reddy et al. (2017) and Kohnke (2018). As a result, leadership can no longer ignore the impact of technology and transformation on their organisation. They need to adapt or face a competitive disadvantage that will result in their non-existence. As argued by Kohnke (2018), technology is advancing at a super speed and becoming quite powerful that many organisations are realising the impact of digitalisation and are wanting to digitise. Thus the author believes that it is important for leaders to ensure that they have the right skillset to transform their organisation and stay current.

Despite knowing the benefits of digital transformation South African businesses are stumbling. According to an article by IT Web, South African businesses are slow at adopting digitalisation (Staff Writer, 2018). This has been attributed, according to Vey, Fandel-Meyer, Zipp, & Schneider,(2017) and Kohnke (2018), to the rapid change of the business landscape and pressure to innovate, thereby resulting in organisations hesitating to react to the change. This hesitance to adapt is confirmed by research conducted by Fitzgerald et al.(2013), which showed that the main reasons for many organisations not adopting digital transformation, or failing to implement it correctly, is the absence of a vision, roles and responsibilities not being clear, and a lack of leadership skills. Based on the research this scholar further

argues that there is also no sense of urgency by leadership to achieve digital transformation (Fitzgerald et al., 2013).

However, in further research conducted by Fitzgerald et al. (2013), they confirm that organisations which invest in important new technologies and manage them well are more profitable than their non-adaptive industry counterparts. Their research states that most of the companies implementing digital transformation well are known as the digirati, and are combining digital activity with leadership to convert technology to digital transformation (Westerman, Bonnet, McAfee, 2014). This is due to digital maturity, which impacts performance in digital transformation. However, to lead digitally leaders are required to have a strong vision. These scholars further argue that, based on research they conducted, most executives are changing three key areas of their business, that relate to business models, the experience of the customer and the practices of their operations (Westerman, Bonnet, & McAfee, 2014)

Schwarz Müller, Brosi, Duman, & Welpé (2018) argue that digital transformation, with all its rapid new technological advances in disruptive technologies such as mobile computing, virtual reality, sensory embedded devices, and robotics, is now impacting the way we work and how leadership is executed in the workplace, as more flexibility is brought in. Leadership are now having to analyse big data and make decisions faster due to the change in ways of working, and therefore needs new skills and ways of leading (Schwarz Müller, Brosi, Duman, & Welpé, 2018). Another argument put forward by G.C. Kane, Palmer, Phillips, Kiron, & Buckley (2015b), state that digital transformation is not about technology, but rather about defining and executing a good strategy to ensure the success of the transformation and the business (Hess et al., 2016). Additionally, a forward-looking perspective and a change-orientated mind set is key, according to G.C. Kane, Palmer, Phillips, Kiron, & Buckley, (2015a). The role of leadership is critical for running successful digital transformation, and there is a need for strong digital leaders, according to Kane (2018). Having senior leadership buy in is also key to ensuring successful digital transformation (Kane, Palmer, Phillips, Kiron, & Buckley, 2016)

In addition, Kohnke (2018) argues that new digital skills and organisational capabilities, together with leaders understanding the impact of digitalisation and their people effectively working on these initiatives, is what digital transformation is all

about. G.C Kane (2018) refers to developing the talent of their people so that they may become the next digital leaders, by providing them with the right skillset and empowering them to think differently. G. C. Kane,Palmer, Phillips (2016) state that many companies are investing and aiding digital transformation by developing existing talent and acquiring new talent. According to G. C. Kane et al. (2016), some organisations are allowing the cross collaboration of their teams by restructuring them. To support the approach of digital transformation, it has been put forward by Kohnke (2018, p. 70) that “a digital transformation isn’t a single effort but rather a portfolio of initiatives that work together to scale the change.” This means that digital transformation is not a once-off effort, but needs to happen continually.

It is critical that South African organisations learn to digitally transform themselves and do so successfully in order to be able to compete on the global stage, or they risk becoming obsolete. Based on this literature, it is important to understand what South African leaders understand by ‘digital transformation’ and what has been done in their organisations based on the technologies that relate to it. It has also become clear that digital transformation is not just about technology, but also about leadership and other components.

2.2.2 Digital Transformation in South Africa

With digital transformation being a global phenomenon and many countries racing to get on the bandwagon, South African organisations, according to a PWC report, are being left behind as they are not agile enough to adapt the new technologies in their organisations fast enough due to their complex legacy systems, and other systems that still need to be upgraded (“South Africa falling behind with digital transformation,” 2018)This point is confirmed and built on by Wright (2019), who adds that South African organisations are trying to deal with their huge legacy system issues or are struggling to figure out how to get onto the digital transformation path, while there are other companies that are leading the race due to creativity or competition. Most organisations are aware of the need to digitally transform, but many are held back due to legacy systems, lack of leadership and digital foresight, and shortage of skills(Wright, 2019); (ITWeb, 2018); (Deloitte, 2017). This affects the consumers as they are losing out from cost and product perspectives, particularly in the financial services and telecommunications sectors. However, Wright (2019) argues that transformation varies among industries and according to the contextual issues of

South Africa, such as brain drain in organisations, infrastructure issues, a change in culture and mind-set is required to think more digitally, so organisations can adapt. The author further confirms that digital transformation is not only about the technical aspects, but the human element as well. Hence, South African organisations have started investing highly in this area. It would therefore be of interest to this study to understand the digital transformation approaches and factors across various industries in the South African market that have implemented digital transformations successfully.

2.2.3 What are the Aspects or Factors that Contribute to Successful Digital Transformation?

Digital transformation is synonymous with the use of technology. Kohnke (2018) elaborates this point by stating that a lot of focus has been put on the technology side of digital transformation, and organisations are forgetting about other factors that also contribute to successful digital transformation such as the people aspect, operational processes, and the culture and structure components. This point is further elaborated by G. C. Kane et al. (2015b) on the factors that contribute to the success of digital transformation, such as strategy, the maturity of the organisation, the talent that the organisation has in terms of skills, the culture of the organisation and leadership have been highlighted as key attributes to successful digital transformation.

Fitzgerald et al. (2013) confirm that many organisations have struggled to carry out successful digital transformation using new technologies. However, when companies developed the technological and management skills needed, digital transformation was carried out successfully. The attributes that affect digital transformation vary, based on leaders' experience. G. C. Kane, Palmer, Phillips, Kiron, & Buckley, (2015) states that determination is a key underlying factor required for successful digital transformation.

The following elaborates on these and other factors that the literature highlighted:

Good Strategy

Having a good digital strategy has also been argued by Hess et al. (2016); G. C. Kane, Palmer, Phillips, Kiron, et al. (2015a) as being key to successful digital

transformation, as it drives better operational performance. Unfortunately, there are many recent examples of organisations that have been unable to keep up with the digital era. The known example is that of the movie-rental company Blockbuster, who were unable to move fast enough and implement a digital business, according to Hess et al. (2016). Therefore Hussain, Alouini, & Hasna (2012) state that, to have a good digital transformation strategy, leaders must understand their organisations.

G. C. Kane, Palmer, Phillips, Kiron, & Buckley (2015a) and Kohnke (2018) brings to the forefront the fact that digital transformation is not only about technology, but also in the implementation of a clearly defined strategy and leadership to drive the right culture to change and adapt to the new. Having the right, risk-averse culture is challenging and requires leadership to have a different mind-set when it comes to new ways in digital transformation according to G. C. Kane et al. (2015a).

Leadership

Elements needed for driving change, according to Westerman, George; Bonnet, Didier; McAfee (2014), include leadership and a vision which shows the direction of change. Sainger, (2018) confirms that the necessity of leadership by stating that any changes in organisations are introduced by top management, based on the needs of and benefits to themselves and the organisations. As mentioned by Sainger, (2018, p. 3), “Digital transformation is not possible without a leader who creates the platform for it and drives stakeholders towards action. It is the leader who gives a thoughtful application of technology to drive a sustainable business success”.

Thus, Horlacher and Hess (2016) argue that digital transformation has become a key leadership issue that requires new leadership competencies and skills to lead effectively. Managers have to simultaneously balance the exploration and exploitation of their firms’ resources to achieve organisational agility which is a necessary condition for the successful transformation of businesses (Horlacher & Hess, 2016).

Sainger (2018) and Fitzgerald et al. (2013) further concur that digital transformation is fundamentally about change driven by leaders, and that even companies that in the past could leverage technologies effectively struggle now with the new technologies, as they require a mind-set and skillset change from previous

transformational technologies. Ramesh and Delen (2019) argue that when leaders are actively involved, an adaptive culture is stimulated, which leads to successful digital transformation. G. C. Kane, Palmer, Phillips, Kiron, et al. (2015a) confirm that leaders are constantly being watched, making leading by example important. The study also emphasises that being digitally fluent does not mean that you need a high level of technological understanding, but that just showing support of employee initiatives and showing how they contribute to the bigger business plan is enough (G. C. Kane, Palmer, Phillips et al. 2015a).

As Weiling(2004) confirms, literature has largely confirmed that leadership is critical to the success of IT adoptions and changes to the organisation culture. It also confirms that a leader's vision, behaviour, and attitude are constantly being watched and have a critical impact on how employees perceive various IT innovations and how they are adopted. Leaders need to be cognisant of this at all times.

Open to Experiment and Learning from Failure

According to research conducted by G. C. Kane (2018) many leaders are encouraged to create environments for their employees to experiment and learn from failure. This type of environment is said to encourage employees to explore various technologies and solutions without the fear of not succeeding. G. C. Kane (2018) stipulates that leaders are also encouraged to allow collaboration to occur between other parties and universities to allow for more learning and exploration, in order to see what works for the organisation.

Culture

Culture is regarded as an important component of an organisation. According to Christensen (2006, p. 1), there are many definitions of culture, one of which is "the norms that evolve in close working groups, observed behavioural regularities that occur when people interact, or the philosophy that guides an organisational policy towards employees and customers". As Schein, a renowned scholar in organisational culture, puts forward, organisational culture is only found where a certain group has a history of being together to create a culture together. (Christensen, 2006).

Christensen (2006, p. 2) argues that culture is dynamic and changes with situations and the times and “evolves with new experiences”. Culture is the tool of the leader, in that they cannot be part of every decision or action taking place in their organisations as they grow; however, they can ensure that the organisations understand the goals and priorities so that people make the right decisions without intervention.

The rapid advancement of technologies has changed the way organisations compete and attend to their customers, as well as the fundamentals of their operating environment. Hartl and Hess (2017) state that in order to benefit from the new technologies organisations need to transform as well. Firms need to think holistically to ensure business improvements, by transforming their business models, structures, processes, and culture. According to Weiling & Wei (2004), an organisation’s culture is created by the way people think, which impacts the ways they behave. Thereby culture acts as “ the social glue that holds organizational members together and expresses the values, social ideals, and beliefs that members share” (Weiling & Wei, 2004, p. 430). This scholar further emphasises that an organisation’s beliefs and values therefore impact employees’ perspectives and perceptions.

As mentioned by Hartl & Hess (2017) and put forward by various scholars such as G. C. Kane, Palmer, Phillips, Kiron, & Buckley (2015), culture in digital transformation is considered a key strategic element, but can also be the main reason that prevents change from occurring, as seen in a few cases such as Kodak and Motorola. Weiling (2004) further emphasises that when the IT system and the culture do not agree, the IT system will either have to be rejected or modified to fit the culture.

Therefore G. C. Kane, Palmer, Phillips, & Kiron (2015) and Hartl and Hess (2017) also argue that culture is critical for successfully implementing digital transformation in an organization and that having a digital mind-set is also a key contributor.

Mind-set

Weiling (2004), G. C. Kane, Palmer, Phillips, & Kiron (2015), and G. C. Kane (2016) argue that the relationship between organisational culture and digital technologies requires a mind-set change, in order to allow the effective use of digital technologies.

Gerald C. Kane, Doug Palmer, Phillips (2015) state that, based on research done, digital leaders drive transformation through their digital strategy, culture and leadership. However there have been many instances of organisations that have focussed on the technologies and not the skills or capabilities thus resulting in failure. This failed implementation has been due to organisations expectation falling short because organisations did not change their mind-set, processes or did not build cultures that adopted change.

(Dweck, 2012) further argues that one's mind-set changes the way one perceives things. One can have either a fixed mind-set, where one believes things cannot be changed, or a growth mind-set, which allows one to expand and persevere when things are tough, enabling one to thrive in the most challenging times (Dweck, 2012).

Dweck (2012) further confirms that companies which have succeeded in being continuously successful are those that have a growth mind-set, as they constantly try to improve themselves and those around them, try to understand the skills needed in the future, and surround themselves by the most able people. The author therefore believes that mind-set is a key success factor for digital transformation.

People/Talent

Fenech, Baguant, & Ivanov (2019) state that in a bid to maintain a competitive advantage through digital strategy, intellectual capital, knowledge and human capital, are critical components. According to research conducted by G. C. Kane, Palmer, Phillips, & Kiron (2015), hiring the right talent is key to digital transformation, as organisations need digitally-savvy employees.

Most people, especially the younger generations, want to work for organisations that are at the forefront of technology, that are deeply committed to the digital process, and wherein employees can grow and learn (G. C. Kane, Palmer, Phillips, 2015). Working with millennials is also regarded as key to digital transformation, as they are thought to be highly educated, extremely proficient and skilled in technology, and confident. They therefore expect to be stimulated accordingly, be allowed to collaborate and work in different ways, and be compensated accordingly. Holt, Marques, & Way (2012) state that this new generation of workers want to know they

are valued and looked after by their leaders and organisations, and are gaining long-term value through being trained. Due to their natural technical abilities and different way of thinking, organisations can use this generation and learn from them (Holt et al., 2012)

Collaboration

One of the key soft skills required by leaders for digital transformation is collaboration, as leaders need to collaborate with various parties in and out of their organisation (G. C. Kane et al., 2016). This is built on by Westerman et al. (2014), the use of new technologies has enabled some organisations to allow their employees to work virtually, from home, or at certain locations in the office. G. C. Kane et al. (2016) adds further that some organisations are allowing the cross collaboration of their teams by restructuring them. According to Westerman et al. (2014) and (Schwarz Müller et al., 2018), this approach has allowed teams to cross collaborate with each other using various networking and technology tools, enabling them to share their knowledge, work across silos, and develop cross-functional teams.

Entrepreneurial Skills and Mind-set

Leffel, Hallam, & Darling (2012) define an entrepreneur as someone who develops an opportunity and then creates an organisation to achieve that opportunity. Entrepreneurship has been linked to the term of 'risk taking', as that is what it is all about. Entrepreneurship has a significant impact on an individual's development as it leads to growth, and development. However entrepreneurship depends on the person's personality, motivations, cognitive ability, skills, the environment, and the person's experiences to name a few. According to Mohan & Bharti, (2017, p. 1514) "the foundation of an entrepreneurial mind-set are metacognitive in nature", where in realising and appreciating of what one already knows, this is strategized to apply the relevant skills to a particular situation. Metacognitive ability refers to self-reflecting and looking at the alternatives to help with a problem or decision. (Mohan & Bharti, 2017)

Leffel, Hallam, & Darling, (2012 p. 14) also mention that technology entrepreneurs are those that bring about "the aspects of the technical and business world to produce economic value in the market place". These roles apply to many leaders in the technology field due to the innovative thinking and approaches that have to be

applied. These leaders create new business opportunities that generate wealth, jobs, value and progress in the organisation (Leffel, Hallam, & Darling, 2012)

Skills

As illustrated in the previous sections, digital transformation is not just about the technologies, but also leadership and its important role as a driving force. Leadership therefore needs the right skills to drive transformation. Section 2.4 will discuss details regarding the various skills further.

G. C. Kane, Palmer, Phillips, & Kiron (2015) state that envisaging new technologies in the future is challenging; however, a business' success is more reliant on its ability to implement these technologies innovatively by rethinking culture, talent, and strategy. Other factors for successful digital transformation that have been highlighted are leadership, being open to learning and experimenting, mindset, skills and collaborating as has been discussed.

Transformation is not a straightforward process, and there are different possible options. Hussain et al. (2012) confirm that it would be constructive for managers to know about the factors associated with successful transformation. Hess et al. (2016) and Hussain et al. (2012, p. 2) further emphasise that "we need to know more about how companies actually face such a transformation, what makes them successful, and how organizations approach their transformation". Authors such as Horlacher & Hess (2016); Sainger (2018); Fitzgerald et al. (2013); Kane, Palmer, Phillips, Kiron, & Buckley (2015); and Kohnke (2018) have also indicated that more research into the leadership skills required for successful digital transformation is required. The author therefore believes it to be vital that we understand whether the factors or attributes stated contribute to success digital transformation in South African organisations.

2.3 Theory on Leadership

2.3.1 The Importance of Leadership in Digital Transformation

The study of leadership is endless and has occurred over centuries to determine core characteristics for effective leadership (Higgs, 2003). Leadership thus has many

definitions. According to Yukl (1989, p. 252), leadership is defined “in terms of individual traits, leader behaviour, interaction patterns, role relationships, follower perceptions, influence over followers, influence on task goals, and influence on organizational culture”. Most definitions of leadership relate to the influence process i.e. who exerts influence, and how influence is exerted (Yukl, 1989). According to Daft, R. L. (2011) and Breuer & Szillat (2019), leadership is seen to be about influencing people to achieve a common goal or a vision in mind. Therefore leadership is a key component to the success or failure of an organisation.

However, as time has passed and technology has evolved, so have the roles and capabilities of leadership. Leaders have realised that they cannot lead and manage organisations as they did in the past. Their skills and competencies also need to adapt and change with the times to ensure successful organisations and a competitive advantage. This is supported by Uhl-Bien et al. (2007, p. 300), who concur that as we have moved from the industrial era to the knowledge era of information, technology, and communication, a “new competitive landscape driven by globalization, technology, deregulation, and democratization” has come about.

In the past traditional leadership was designed to lead for efficiency and effectiveness, and organisations were lead to operate as complicated and siloed units in predictable commercial environments (Deloitte, 2017). Considering the new environments we work in today, which are high in innovation and employee wellbeing, leadership concerned with ethical and caring behaviour has become more important. Therefore, according to Dierendonck (2011), servant leadership has been defined as serving others and serving first by creating an environment to allow employees to grow, which is distinct from other leadership types, who are there to see to the wellbeing of the organisation. Key characteristics of servant leadership have been identified as empowering and developing people by being authentic, humble, accepting others, and providing guidance (Dierendonck, 2011).

However, as put forward by Uhl-Bien et al. (2007), in most organisation contexts, transformational leadership is associated with effective leadership as it allows for improved organisation performance. However, in today’s digital age, the environment is much more unpredictable and disruptive. Leadership would have to adjust and adapt to these environments based on the context of the situation and

what needs to be achieved. The presence of a leader is what drives all activities in an organisation. Therefore, according to Uhl-Bien et al. (2007), the knowledge development, adaptability, and innovation are relevant in organisations that are complexly adaptive.

The above proves that leadership depends on the context, as also argued by Osborn, Hunt, & Jauch (2002), where the pattern over time must be considered and depends on history. Therefore, the author believes that leadership has progressed over time from the industrial era to the knowledge era, and that one has to consider the different types of leadership for the times and environments leaders now need to lead in.

Contextual leadership

According to Oc, (2018), due to past research on leadership, it was difficult to find universal traits and behaviours that applied to all leaders, so researchers focused more on the situation or context in which leaders operate. As argued by Osborn et al. (2002, p. 78) "leadership is embedded in the context". Leadership is derived from the context of the patterns it operates in and in terms of prior work or its history (Osborn et al., 2002), as well as how it takes place in specific contextual settings (Oc, 2018), thereby illustrating that the demands, restrictions, and adoptions of a leader depends on their context.

It is clear that, in today's digital age, the environment is much more unpredictable and disruptive. Leadership would have to adjust and adapt to these environments based on the context of the situation and what needs to be achieved.

Resilient Leaders

Resilience is the concept where organisation leaders manage a crisis situation and builds the ability to deal with future turbulences (Lane, McCormack, & Richardson, 2013). Leaders who are resilient according to Bennis, (2013), are said to come back and rebound after a difficult situation. This is considered to be an adaptive capability as per this scholar and is due to the interaction between the leaders personality and the external environment (Bennis, 2013). In today's unpredictable and disruptive world we work in, resilient leaders look at how to manage these disruptions and lead with resilience by keeping their organisations focused regardless of the external

disturbances. Hence this leader not only needs to be adaptive but Lane, McCormack, & Richardson, (2013) state that they need to be flexible, creative and innovative too.

Assertive leaders

Assertiveness is seen to occur when one's behaviour is not aligned to the goals of the situation and other people are interdependent on these goals as well. This then results in a judgment of the behaviour as it is not aligned to that of others (Ames, Lee, & Wazlawek, 2017). Assertiveness is caused as per Ames, Lee, & Wazlawek, (2017) due to one's own personal motivations and the value attached to getting our way or doing what needs to be done. The behaviour results in one acting out our emotions, or being forceful or controlling as is seen by many leaders in the organisations, to control the situation (Ames et al., 2017). In the digital space according to Williams, (2001) leaders need to be assertive in their communication to get their agenda's across.

Bold and Brave Leaders

Leaders need to be brave in all that they do from creating, implementing and communicating their critical agenda's and initiatives, so as to ensure they get the support for the decisions that follow. They also need to be brave to create the environment, and work place cultures that ensure people will want to continue working for them and future employees will want to come work for their organisation (Silver, 2018). Therefore according to Silver, (2018), bold leaders are those that take well thought out risks, to ensure their organisations in critical situations feel confident and safe with their decisions, and in so doing they have to be brave as well.

2.3.2 Adaptive Leadership

Böck & Lange (2018), stated that adaptive leadership was developed so that people could learn how to resolve their own problems and challenging situations. According to Northouse (2006), leaders use adaptive leadership styles to bring about change at the organisational, societal, or individual level.

Uhl-Bien et al. (2007) opine that, since moving into the knowledge era from the industrial era, our leadership styles have not changed. The knowledge era is described as being driven by completion, technology, globalisation, deregulation, and democratisation (Uhl-Bien et al. 2007).

Over the years and due to the nature of technology and the rapid advances in the market and industry, leadership has had to adapt and adjust to survive. Adaptive leadership, also known as effective leadership by Uhl-Bien et al. (2007) or flexible leadership by Yukl & Mahsud (2010), has been defined by Uhl-Bien et al. (2007) as being a change in behaviour that emerges when faced with various interactions, networks, interdependence, and complex, constantly changing environments. G. C. Kane (2018) add that in a continuous changing environment leaders are expected to deal with new challenges, and need to adapt their leadership style and their organisation to this new environment. To meet this complexity in their work environments, Uhl-Bien et al. (2007) put forward that knowledge era leaders need “a change in thinking away from individual, controlling views, and toward views of organizations as complex adaptive systems that enable continuous creation and capture of knowledge” (Uhl-Bien et al., 2007, p. 301). Lichtenstein & Uhl-bien (2006) build on this notion of complexity theory and illustrate that leadership is more than a competency, but rather emerges through continuous interactions in various environments.

Despite the changes of this knowledge era Uhl-Bien et al.,(2007) states that leadership theory is still based on the traditional style of leading, which is a more bureaucracy based, controlled, structured, and top down leadership style (Uhl-Bien et al., 2007). In the knowledge era, the success of a corporation lies more in its social assets, its corporate organisation IQ and learning capacity than in its physical assets (Uhl-Bien et al., 2007).

Uhl-Bien et al. (2007) therefore propose the use of Complexity Leadership Theory (CLT), which is a framework for leadership that enables learning, creativity, and adaptability in complex adaptive systems (CAS) in organisations. There are three types of leadership that CLT recognises; i) administrative leadership that relates to the administrative activities creating a plan, building a vision, finding resources and managing the strategy; ii) adaptive leadership that relates to being adaptable, being a creative problem solver, and learning from complex adaptive systems; and iii) enabling leadership which enables parts of adaptive leadership and creativity (Uhl-Bien et al., 2007). According to CLT, these three leaderships are intertwined,

however, adaptive leadership is said to be “arguably, *the*, proximal source of change in an organization” (Uhl-Bien et al., 2007, p. 306).

Adaptive change occurs when there is incompatibility of ideas, knowledge, and technologies, which then results in new, creative ideas, knowledge, adapting, and learning. Adaptive leadership is recognised when new knowledge and adaptive ideas create an impact and are accepted by others (Uhl-Bien et al., 2007). Randall & Coakley,(2007) further argue this point that adaptive leadership entails six phases when executing change in a complex organisational environment. This entailed the identification of the adaptive challenge, making the stakeholders aware of the change by focussing on the problem, trying to keep their attention, focussing towards change to ensure continuous change, and “securing ownership of both the problem and solution from the stakeholders themselves, and creating a safe environment for them by providing the resources and the ‘right cover’ so no retribution will occur” (Randall & Coakley, 2007, p. 328)

Doyle (2016) opines that changes and pressure from the external environment are triggers for adaptation within an organisation. This adaptation then leads to new capabilities and an adaptive culture which serves to provide a competitive advantage. Adaptive leaders thereby contribute to the success of the organisation by encouraging employees to discover creative and innovative solutions (Doyle, 2016). Thus, as simplified by Doyle (2016), gathering the right people to solve complex problems and grow, is what adaptive leadership is.

For the purpose of this study, Complexity Leadership Theory (CLT) will be used as a theory for leadership that enables the learning, creative, and adaptive capacity of complex adaptive systems (CAS), where adaptive leadership is key. CLT offers a new approach to understanding leadership that has moved from the industrial era to the new ways of leading in the knowledge era (Uhl-Bien et al., 2007).

The author therefore believes that adaptive leadership can be thought of as being the relevant leadership type for complex, constantly changing environments. It would also be interesting to understand South African leaders understanding of adaptive leadership and whether it is relevant to digital transformation.

a) Adaptive Leadership Skills

Interest in leadership skills has been around for many years, but interest in adaptive leadership skills specifically has grown in the recent years and in the complex environments we now lead in (Yukl & Mahsud, 2010).

Thus, according to literature relating to complexity theory, organisational learning, and leadership development theory, Doyle (2016) argues that adaptive leadership should comprise the following knowledge and skills; organisational knowledge and interdependencies, strategic thinking, ability to control personal feelings, comfort during uncertainty and ambiguity, listening and communication skills and conflict resolution. Yukl & Mahsud, (2010) argue further that adaptive leaders need skills that involve understanding different situations and being flexible when faced with instances that require a change in strategy or behaviour. Accordingly, the skills relevant for adaptive leadership are:

Cognitive Complexity and Systems Thinking

Cognitive complexity and systems thinking, according to Yukl & Mahsud (2010), entails understanding how different parts of an organisation relate to one another and how a change in one part can affect other parts, as well as the impact of the external environment on the organisation. A leader with these basic skills will develop a better understanding of these complex causal environments. (Yukl & Mahsud, 2010).

Social Intelligence Skills

Social intelligence skills are also regarded as important as they entail understanding the leadership situation and possessing emotional intelligence in terms of empathy (understanding others' emotions to be able to influence and motivate them), self-awareness (understanding one's own values and motives to influence others), and regulating one's own feelings – this entails avoiding quick or emotional reactions that would impact the problem solving of situations (Yukl & Mahsud, 2010).

Openness to learning

In terms of leadership traits and behaviours, a skill regarded as one of the big five traits by Yukl & Mahsud (2010) is openness to learning, which entails the ability to

learn new and better ways to solve problems and willingness to accept and learn from negative feedback given by peers, employees, and others.

Technical, Conceptual, and Inter-Personal Skills

Yukl (1989) argues that inter-personal skills, conceptual skills and technical skills are necessary for most leadership roles. However, the importance of these skills varies depending on the situation.

As put forward by Hsieh et al. (2014), organisations with a desire to adapt need adaptive leaders to drive the learning and change processes. These leaders will need to decide on the best approach to deal with upcoming adaptive challenges. Härtel & Roux (2018), argue that in order to be a sustainable and effective leader, one needs to develop a growth mind-set, understand who you are as a leader, and be quite self-aware. In addition, these effective leaders need to be adaptable, resilient, collaborate, have reputable networks and be open.

2.3.3 Digital Leadership

According to Gartner, digitalisation refers to when Information Technology (IT) innovation and business innovation are more integrated, and the organisation moves from a legacy perspective of working to a more digital perspective, suggesting there is a need for digital leadership. During research done in 2015 on US management professionals, it was discovered that successful digital transformation is more concerned with strategy, culture, and people development than with technology. However, respondents were not sure that their leaders had the capabilities to lead organisation in a digital environment (El Sawy et al., 2016).

Digital transformation is not possible without a leader who creates the stage for it and drives interested parties towards achieving it. Sainger (2018) emphasizes that it is the leader who gives a great deal of thought to the relevant technology needed to drive continued business success. As put forward by Bennis (2013), leaders need to understand how to utilise the various technologies and tools of the digital world, and understand the impact they have on their relationships with various stakeholders such as customers, partners, and employees, or they will be left behind in this digital age. Digital leadership can be defined by its contributions and how it functions in a

knowledge society. El Sawy et al. (2016) define digital leadership as when leaders do what is right strategically to ensure the success of digitalisation for the organisation and its business environment.

According to Goethals, Sorenson, Burns, & Burns (2003), digital leaders stand out from other leaders as they require a combination of new skills, attitudes, knowledge, and different experiences. Digital leaders need a vision for what they want to achieve, must be in search locally and globally for solutions, must have a passion for what they do, and must possess a hunger for constant learning from both their competitors and their peers (Goethals et al., 2003).

Westerman, George; Bonnet, Didier; McAfee (2014) concur with what has been said, stating that digital leaders need a vision on how to transform their organisation digitally. To drive this they need strong leadership and “new ways to redefine the way they work in the new digital era” (Westerman et al., 2014, p. 6). Van Outvorst, Visker, & De Waal, (2017) build on this further stating that digital leadership must be able to use modern communication technology, be able to guide the people in their organisations and in society to use it correctly to communicate, and make proper use of the information they gather. Digital leaders need to be more open and transparent in their communication due to the nature of the rapidly-changing information and their ability to assess the quality, reliability, and validity of the information they are receiving (Van Outvorst et al., 2017)

However to know where the organisation is going leaders need a vision, however this is only one of the main characteristics. The other important aspect is that the vision needs to be communicated to the various parties to inspire them so that they will want to be part of the vision and make it happen (Lane-Schmitz, 2012). Communication is an important interpersonal skill in today’s global business environment (Robles, 2012) and in a digital economy, as leaders need to communicate their leadership agenda’s to their customers, employee and partners to maintain them and keep them informed. Leaders therefore need to know how to have good influencing skills as they have to continuously influence, listen and persuade when they are communicating. (Williams, 2001)

In today's technologically evolving environment, leaders need good listening skills. This entails according to Mewton, Ware, & Grantham (2009, p. 12) to be an "active listener, listen to understand, and focused listening brings the reward of relating more fully". Listening skills form part of one's emotional intelligence as it relates to having empathy by listening and reacting accordingly, hence These capabilities as per Riggio & Lee (2007) and Goleman (2000) are social skills that comprises being a visionary leader, having the ability to influence, communication skills, carry out conflict management , building bonds, ensuring teamwork ability, and collaboration

Mihardjo, Sasmoko, Alamsjah, & Elidjen (2019) reaffirm that digital leadership is an amalgamation of digital culture and digital competence, and therefore group digital leadership into five areas: " i) Thought leader, having the ability to be tough in facing market and competition change; ii)Creative leader, having the creativity and innovation mind-set to formulate the idea into reality; iii) Global visionary leader, being able to provide direction and become an orchestra in transforming the digital business transformation; iv)Inquisitive leader, having the learning capability to face complex and dynamic ecosystems due to volatility, uncertainty, complexity, and ambiguity (VUCA) factors; v)Profound leader, having in-depth knowledge and comprehension to make interpretations and assumptions, and synthesising of information in making decision." (Mihardjo et al., 2019, p.1750)

Digital leaders in this knowledge era need new digital skills to lead their organisations effectively (Deloitte, 2017), but most organisations have not progressed fast enough to develop and encourage digital leaders to build new ways of leading. MIT Sloan and Deloitte, in research conducted on more than 4300 global executives, reveal that strong digital leadership is very much in demand (G. Kane, Palmer, Phillips, Kiron, & Buckley, 2018) and (G. C. Kane, 2018).

As argued by G. C. Kane (2018), organisations must recognise that looking for and growing the right talent for digital leadership is challenging – due to the continually changing competitive environment, leaders are facing new challenges and must adapt both their organisation and their leadership style. To do this, leaders need new skills and capabilities than those used in the past.

2.4 Skills

2.4.1 Leadership Skills

Due to the advancement of technology and organisational and economic factors in the eighties, the concept of skills started to develop more importance. According to Sousa & Rocha (2019) skills are regarded as both individual and organisational resources that allow the organisation to be more productive and competitive.

Sousa & Rocha (2019) and T. Mumford et al. (2007) have argued that, despite the numerous leadership theories out there, leadership skills have received not enough attention. T. Mumford et al. (2007) confirm that the focus on skills is important as it is believed that leadership capability requirements highlight that leaders can improve, as skills represent competencies that can be developed.

According to Sousa & Rocha (2019), due to the constant change in technology and globalisation resulting in complexity and uncertainty, managers have had to acquire the right skills to help overcome the challenges to their organisations.

2.4.2 Leadership Skills Strataplex

Leadership skills are described by T. Mumford et al. (2007, p. 155) as being “stratified by organisational level, and a complex of multiple categories called a Strataplex, which captures the stratified and complex nature of leadership skill requirements and their relationship with the level in the organization”. This Skills Strataplex encapsulates all of the skill types available in 4 key skill types. Hence, this Skills Strataplex will form the foundation of testing the skills needed for successful digital transformation. Previous literature has indicated that skills can be divided into four different categories, namely: cognitive skills, interpersonal skills, business skills, and strategic skills:

a) Cognitive Skill

Cognitive skill is regarded as the underpinning requirement for skilful leadership. According to T. Mumford et al. (2007); M. D. Mumford, Todd, Higgs, & McIntosh, (2017), cognitive skills are seen as a leader’s most important skill. This entails basic skills that relate to cognitive capabilities such as gathering, understanding, and distributing information and learning. These skills entail speaking so as to

communicate appropriately, listening skills to understand the context, written communication and learning skills, and critical thinking skills, which entails using logic to analyse various situations (T. Mumford et al., 2007). According to M. D. Mumford, Todd, Higgs, & McIntosh (2017), there are also nine critical cognitive skills that leaders need for problem solving, these relate to understanding the problem, determining the goal, understanding the constraints, planning ahead, projecting the outcomes, thinking creatively, understanding idea's, having a vision and being wise.

b) Interpersonal Skills

According to T. Mumford et al. (2007), interpersonal skills relate to the social skills of interacting and influencing others. The key skills as per the Skills Strataplex are interacting with and influencing others, negotiation skills, persuasion skills, and co-ordinating oneself and others (T. Mumford et al., 2007). Interpersonal skills, as stated by Riggio & Lee (2007), are also known as 'people skills'. People skills relate to one's relationship with other. They are regarded as soft skills and allow for effective communication, respectful interaction and helps in difficult situations.

Interpersonal skills also include the emotional intelligence (EI) aspect of connecting with others at an emotional level. As per Riggio & Lee (2007), leaders who have emotional intelligence skills along with their required technical skills consistently outperform leaders who only have the required technical skills. Goleman (2000) confirms this point, stating that there are four key capabilities to emotional intelligence that allow one to manage oneself and one's relationships effectively. These capabilities as per Riggio & Lee (2007) and Goleman (2000) are, i) self-awareness which relates to being self-aware, and assessing oneself; ii) self-management, which relates to being adaptable, controlling oneself, being trusting, careful and focussed; iii) social awareness relates to having empathy and being aware of all around when interacting, and iv) social skills that relates to being able to influence, communicate, manage conflict, collaborate and other people skills.

In research conducted by Dubru (2017), influencing skills were seen to be the more dominant skill. As a result, for this research the terms 'influencing skills' and 'interpersonal skills' will be used interchangeably.

c) Business Skills

These skills relate to the skills in the area of the leaders work that allows for management decisions such as managing personal resources as well as financial resources (T. Mumford et al., 2007). Business and business networking skills are rated as highly important by these scholars.

From a business perspective, the use of new technologies often implies changes in value creation. These concern the impact of digital transformation strategies on firms' value chains; in other words, how far the new digital activities deviate from the core business (Matt, Hess, & Benlian, 2015). However, as argued by Gerald C. Kane, Doug Palmer, & Anh Nguyen Phillips (2015), technological aptitude is no longer a key skill for leaders as in the past. Rather, importance is placed on knowing one's business, having a strategy, and being able to influence the organisation.

d) Strategic Skills

Strategic skills relate to conceptual skills needed to understand complexity by taking a systems perspective. According to T. V. Mumford et al. (2007), this entails looking at alternative options for solving problems. As argued by G. C. Kane (2019), digital leadership needs to provide a vision and purpose so their people know what to follow. However, having a strong vision alone is not sufficient – leaders must be able to execute this vision and have good governance in place. Leaders therefore do not need to be technically savvy, but must have good digital literacy and understanding in order to set the vision (G. C. Kane, 2016).

Matt et al. (2015) states that digital transformation strategies have a different angle and goal, in that they are more customer centric and focus on transformation of products, processes, and organisational facets due to technological changes. Digital transformation strategies often look at the options of the various technologies and the effects on the organisation.

In moving to the knowledge economy, leadership has found that much of its skillset and ways of managing are out of date, as per Uhl-Bien et al. (2007). This has resulted in organisations losing competitive advantage due to their leadership lacking the skills to drive successful digital transformation through their organisations.

2.4.2 The VUCA PRIME Model

Leaders need to continuously deal with changes in technology, business processes, and ways of working under constant volatility, uncertainty, complexity, and ambiguous environments (also known as VUCA). This is changing the business environment and creating a new normal for organisations and leaders (Lordanaglou, 2018; Kohnke, 2018).

Moldoveanu & Narayandas (2019) further emphasise that the need for leadership development is becoming more urgent, as they realise that leadership cannot survive the VUCA environment with the leadership skills and organisational capabilities of the past.

According to Kohnke (2018), these VUCA environments are said to be the “new normal” in which businesses and leaders are to operate in, thus demanding that leaders become more flexible, take more risks, and make decisions faster than do the traditional management systems some organisations are accustomed to. These older systems are not in line with the VUCA way of operating and the speed at which digitalisation causes change.

In light of the leadership complexity theory and the fact that leaders are now working in constantly changing and complex environments, the following model has come up, identifying the leadership skills needed for a VUCA environment:

The VUCA Prime model (Lawrence, 2013), which proposes leadership skills that can be developed to cope with a VUCA environment:

- i) Vision – Leaders need a vision for their organisations to keep them focused during volatile times. Leaders who have a vision during turbulent times are better able to make decisions during times of downturn, as they have a focus in mind.
- ii) Understanding – This entails the ability of the leader to “stop, look and listen” (Lawrence, 2013, p. 6). Leaders need to be able to see and hear what is happening in and around them during times of high volatility and uncertainty. Leaders need to demonstrate communication and listening skills with and toward their employees, in

order to lead them better during these times. They also need to be willing to collaborate and demonstrate teamwork for their people to follow.

iii) Clarity – Leaders need to be able to extract meaning from complex and chaotic situations, thereby gaining clarity that will enable them to make better informed business decisions.

iv) Agility – This relates to leaders having to adapt fast, communicate clearly, and move quickly to apply solutions in volatile situations.

According to Lawrence (2013), this model does not see vision, understanding, clarity, and agility as separate elements. They are instead quite intertwined, allowing for stronger VUCA leaders.

Horney, Pasmore, & O'Shea (2010) build on the VUCA model, stating that for leaders to maintain success in the VUCA world they need to make continuous changes in people, technology, and structure and processes. This approach requires an agile leadership to understand the business environment and be fast, flexible, and focused on the change it needs to bring about.

Horney et al. (2010) refers to an agile model that is focused on aligning processes, people, and technology, driven by five critical drivers of leadership agility, which are:

i) Anticipate change relates to creating a vision for the organisation, sensing when there is change, and monitoring processes.

ii) Generate confidence comprises connecting, aligning, and engaging by collaborating with the relevant parties.

Initiate action entails creating an execution culture, allowing for fast decision making, and collaborating across boundaries.

iii) Liberate thinking is creating an environment that encourages innovation, idea diversity, and being customer-focused.

v) Evaluate results involves creating expectations, providing real-time feedback, and using performance metrics for information measurement insights and conclusions.

The literature therefore illustrates that being an agile leader and the skills involved are relevant to the constantly changing VUCA environment that leaders need to operate in.

2.4.3 Digital Leadership Skills

There are multiple digital leadership skills required for successful digital transformation. G. C. Kane et al. (2015) state that digital leaders need to understand their businesses and have a strategy or vision of where they want to take their organisations. This is further built on by G. C. Kane (2015, p. 40), who emphasised a transforming strategic vision “a transformative strategic vision, a forward-looking perspective, and a change-oriented mind-set.”

Other skills mentioned by these and other scholars are that digital leaders need to be flexible and adaptable to their circumstances, comfortable with constant change and unpredictability. They must also listen to their surroundings and understand their environment, and be able to influence (Goethals et al., 2003; G. C. Kane et al., (2015); and G. C. Kane, Palmer, Phillips, Kiron, et al., 2015a). Understanding technology has not been highly ranked in terms of importance, according to a survey done by G. C. Kane, Palmer, Phillips, Kiron, et al. (2015), as leaders do not need to be technically proficient, but rather just understand and be able to apply the leadership and technical skills they know. Goethals et al. (2003) contest this, stating as we are in the knowledge era, it is essential for leaders to have substantive knowledge of the new technologies out there. Leaders need to have a global outlook on solutions and challenges and have a hunger to constantly learn, both from their competitors and their peers in the industry. Digital leaders must be able to see things from various angles, be truly passionate about what they do, and have a means to learn what they do not know yet (Goethals et al., 2003).

Goethals et al. (2003) further elaborate that digital leaders are said to be more open and result-orientated than earlier leaders, which entails skills such as being more collaborative, creating coalitions, multi-tasking, being focused on one’s own priorities while seeking common ground with other leaders in other areas, and learning about things unknown to them. Digital leaders therefore need a combination of new knowledge, skills, and attitudes that allow them to work across silos and cross collaborate, but still remain morally and ethically grounded in their ways (Goethals et al., 2003). G. C. Kane, Palmer, Phillips, Kiron, et al. (2015a) argues that some leaders find collaboration is hampered due to silo, mind-sets and the culture. Collaboration is essential for active communication across silos.

According to Kappelman, Jones, Johnson, Mclean, & Boonme (2016), skills needed by leadership entities such as CIOs and IT managers are strong business skills, excellent communication skills, very good strategic thinking skills and a strong business acumen. Leaders also need to be able to understand which skills they need in order to develop their people accordingly. Self-development and understanding the business, customers, and industry when carrying out decision making and strategic planning initiatives is vital (Kappelman et al., 2016).

G. C. Kane & Kiron (2018) put forward a valid point, stating that an organisation's culture is critically important to efficiently leverage digital technologies in the work place. However, a characteristic that most organisations lack, and which is needed to do the aforementioned, is that of the "willingness to experiment and take risk" (G. C. Kane, Palmer, Phillips, & Kiron, 2015b, p. 40). This relationship between digital technologies and organisational culture requires a certain mind-set, and leveraging these digital technologies successfully requires a mind-set shift (G. C. Kane, Palmer, Phillips, & Kiron, 2015).

Successful digital transformation, according to G. C. Kane, Palmer, Phillips, Kiron, et al. (2015a) is not a once-off requirement. It is a continuous process that responds to the new digital trends in the market, and so a flexible mind-set and constant change in the organisational structure are required. (G. C. Kane, Palmer, Phillips, Kiron, et al., 2015a) also mentions that, as a digital leader, one has to learn to fail, as failure in successful digital transformation is common. You have to learn from the failure, and try to fail small and cheaply where possible.

As argued by G. C. Kane, Palmer, Phillips, Kiron, et al.(2015a), digital leadership needs to provide a vision and purpose so that their people know what to follow. However, having a strong vision alone is not sufficient – leaders must be able to execute this vision, and have good governance in place. Leaders do not therefore have to be technically savvy, but must have good digital literacy and understanding to set the vision. Leaders who are curious, who create an environment to experiment, and who encourage their people to experiment and fail are ideal (G. C. Kane, Palmer, Phillips, Kiron, et al., 2015a).

It has been found that leaders in digitally-mature companies are developing their talent into digital leaders by fostering a different way of thinking, from perspectives other than the organisations', such as the customers'. They are also anticipating future trends (G. C. Kane, 2016). Leaders therefore need to know their business well and understand the impact of technology on their business model (G. C. Kane, Palmer, Phillips, & Kiron, 2015).

2.4.4 How can these skills be kept up to date

With technology advancing so rapidly, it is becoming key for people to continuously learn and improve their skills, knowledge, and capabilities, thereby becoming life-long learners and keeping current. However, as stated by Mawas et al. (2019), learning and personal development have to come from oneself, to advance oneself. Metacognition according to Mohan & Bharti (2017, p. 1514) has been defined to be "the awareness and management of one's own thought". Metacognitive skill has been defined to relate to the individual's understanding of oneself and what they are capable to learning (Veenman & Spaans, 2005). Metacognitive skills are considered to be highly independent and entail analysis tasks, planning, monitoring, checking and reflecting. (Veenman & Spaans, 2005). Therefore according to Mewton et al. (2009), much self-reflection and self-awareness needs to occur, which entails knowing oneself, one's strengths and areas of improvements and being open to others and not being judgmental.

There comes a time when skills become redundant and outdated, as technology and the environment advance. Skills therefore need to be kept up to date once acquired, or they need to be built on over time to transition to new environments. Thus, leadership needs to constantly maintain their skills based on the trends of the environment, as argued below by various scholars.

Skills and learning may take place through formal learning in an organised context such as at an in-company training or education institutions. Informal training occurs within a set of activities that were not initially designed for learning, but in which learning occurs for example, learning practical skills or learning from experiences (Mawas et al., 2019).

According to Mawas et al. (2019), individuals need to ensure life-long learning by developing key 21st century skills, which include being digitally literate, communicating, being a critical thinker, being able to problem solve, collaborating and being creative, in order to be able to identify the learning activities they have to undertake in order to improve their knowledge and skills. There are various ways in which learning can take place today, such as through pedagogy methods that help students to develop 21st century skills. This entails problem based learning which entails the use of collaboration, creativity, critical thinking and communication. Flipped classrooms involve the use of social media to learning and interact with. Self-directed learning, where individuals initiate the process in understanding their learning needs, and formulating their own goals, identifying resources, implementing and monitoring the outcomes. Computer supported collaborative learning, here students see situations from different perspectives, and practice social and leadership skills. Personalised Learning (PL) entails learning at one's own pace using online tools and applications (Mawas et al., 2019). Day (2001) and Doyle (2016) confirm that leadership skills development is an area of popularity in the knowledge and digital age we live in today, as many organisations see leadership skills as a competitive advantage. According to Chirino-klevans (2017), business education studies are continually trying to develop global leadership skills.

Various companies have realised that, in the volatile, uncertain, complex, and ambiguous environment they live in, they need new leadership skills and organisational capabilities to survive. There are various ways in which leaders can keep their skills up to date. There are the traditional approaches such as universities, business schools where leaders attend executive programmes to broaden their perspectives “such as at Harvard, MIT, Stanford, and SIM's Regional Leadership Forum” (Kappelman et al., 2016,p. 70), and specialised training companies and consultancies. However, according to Moldoveanu & Narayandas (2019) many executives have indicated that they do not apply everything they learn in classroom environments.

According to Hilliard (2015), blended learning, which involves facilitators customising or personalising individual learning programmes, is becoming quite the norm, especially in leadership development programmes. However, not all participants may learn using this approach, so online training and face-to-face

interaction was used. Blended learning also allows leaders to network and connect while still learning. The global work environment requires employees to have technology and problem-solving skills, which tertiary institutions will have to start exposing their students to, to ensure competence in the work environment (Hilliard, 2015).

According to Chirino-klevans (2017), one of the biggest gaps in leadership skills development is providing leadership with a more immersive form of learning. This sort of learning is more practical and related to real life, and allows leaders to practise in a 'safe environment' in which decisions do not have actual consequences. Chirino-klevans (2017) reveals that the use of Virtual Reality Simulations (VRS), in which leaders can use virtual scenarios to learn by interacting or just observing, has started to gain momentum. This approach is said to provide more real-life emotions and scenarios, as opposed to the use of case studies where cognitive skills are applied to artificial scenarios (Chirino-klevans, 2017).

The emergence of Personal Learning Cloud (PLC) is another means that allows organisations to select components and tailor them for the training of individuals and teams. According to Moldoveanu & Narayandas (2019), the PLC is flexible and available immediately, which allows employees to pick a skill and learn it when required. Moldoveanu & Narayandas (2019) further confirm that the use of PLC allows access to various massive open online courses (MOOCs), as well as other platforms such as LinkedIn Learning, Salesforce trailhead, and Skillsoft, allowing quick, certifiable core skills in an interactive, on demand, solution-centric environment.

Another means of learning and ensuring skills development has been put forward by Kappelman, Jones, Johnson, Mclean, & Boonme (2016), which involves leaders acquiring mentors more senior leaders than themselves, or external professional coaches through networks or professional associations, with the goal of helping leaders practice and learn their relevant skills and helping them at key phases of their career.

This all suggests that digital skills acquired can be kept up to date and be built on over time using the various technologies and traditional means of having mentors

and coaches. The author believes that these approaches also ensure that leadership skill is a constant investment which has to be maintained to ensure leaders have the correct skills to lead their organisations through successful digital transformation. This research sets out to understand how the South African leaders who have implemented successful digital transformation are acquiring the skills they need, as well as how they ensure that their skills are kept up to date at all times.

2.5 Conclusion

As has been illustrated by the literature review, the role of leadership is a prominent factor in ensuring successful digital transformation (Sainger, 2018; Bennis, 2013). However, in order to lead organisations, leaders need the right set of skills (Sousa & Rocha, 2019; T. Mumford et al., 2007). Acquiring and maintaining these skills is vital to ensuring successful digital transformation. There are various skills needed; however, most of the skills appear to be across the Skills Strataplex (T. Mumford et al., 2007). It is therefore pertinent to understand the South African context in terms of whether these skills apply or if a different range of skills would be required for successful digital transformation.

As this research intends to understand the skills that digital leadership needs for successful digital transformation, a framework can be created based on the literature reviewed and all of the literature mentioned in terms of digital leadership, adaptive leadership and leadership skills from the Skills Strataplex, combining it with the skills for a VUCA environment to form a model to be tested, called the: Digital Leadership Skills Framework.

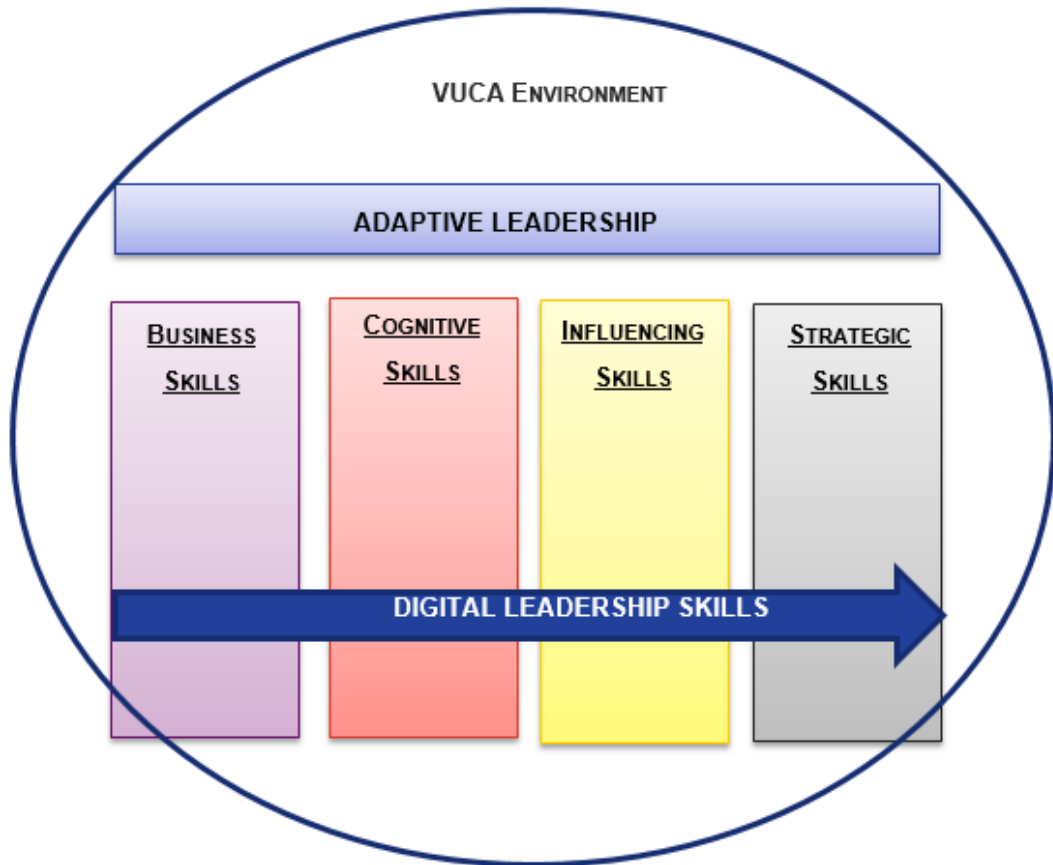


Figure 1: Digital Leadership Skills Framework

The four skill categories displayed by this digital leadership skills framework will therefore be used in this study as a core foundation to understand the key digital leadership skills that South African leaders need for successful digital transformation in this disruptive environment, and whether these traditional leadership skills still apply or not, as well as if adaptive leadership and its skills are suitable for digital leadership. Thus resulting in the generation of the digital leadership skills that South African leaders need.

CHAPTER 3:RESEARCH QUESTIONS

3.1 Introduction

This research aims to answer five specific research questions, as was derived from the literature review.

3.2 The Research Questions

Research Question 1 (RQ1): What is leadership's understanding of digital transformation?

The aim of this question is to gauge South African leadership's understanding of digital transformation in line with the technologies that relate to it, and to gauge the relevance and importance to their organisations.

Research Question 2 (RQ2): What are the factors that contribute to a leader carrying out successful digital transformation?

The objective of this question is to understand what are the key factors that contribute to the success of digital transformation projects in organisations. It also seeks to understand which factors South African leaders regard as being key contributors to their organisations' successful digital transformations, compared to what the literature states. The objective is to identify if there is a theme that emerges, and if certain factors are more predominant than others.

Research Question 3 (RQ3): Understanding the importance of leadership in digital transformation:

This research question aims to understand the importance of leadership in digital transformation from two perspectives (as stipulated below) in terms of the kind of leadership that is required for digital transformation, and whether adaptive leadership contributes to its success.

3.1 What kind of leadership is required for digital transformation?

The objective of this research sub-question is to understand if South African organisations consider leadership to be important in digital transformation, or if there are other factors. Based on this, the next objective is to understand what kind of leader is required for successful digital transformation to occur.

3.2 To what extent does adaptive leadership contribute to digital transformation?

The objective of this research sub-question is to explore leadership's understanding of what adaptive leadership is, in terms of how it is defined, and understood to be. This question also aims to understand if adaptive leadership is suitable for digital transformation through reviewing the literature. If adaptive leadership is suitable, this research seeks to determine what skills or aspects of adaptive leadership are suitable for digital transformation.

Research Question 4 (RQ4): What is leadership's understanding of digital leadership, and what digital leadership skills are needed for successful digital transformation by South African leaders?

This question explores the understanding of a digital leader, and attempts to gauge if this digital leader is seen differently from traditional leaders.

The question then aims to understand the differences between certain skill types, such as: cognitive skills, influencing skills, strategic skills, and business skills from the Skills Strataplex. The question further investigates which skills are applicable for successful digital transformation, and aims to reach an understanding of the digital leadership skills South African leaders should have or develop, to achieve it. Also addressed was the question of which skill was regarded as the most important skill required for leaders for successful digital transformation, and which skill was a key contributor to successful digital transformation in their organisation.

Research Question 5 (RQ5): How is leadership acquiring digital leadership skills and keeping these skills up to date?

This question's objective is to understand how leaders acquire their digital leadership skills and maintain them for future digital transformations, so that they stay up to date and relevant in this digital age and are able to continuously achieve successful digital transformations. This will serve to help and inform other leaders who need to acquire these skills on how they can do so.

Figure 2: Key components of Research

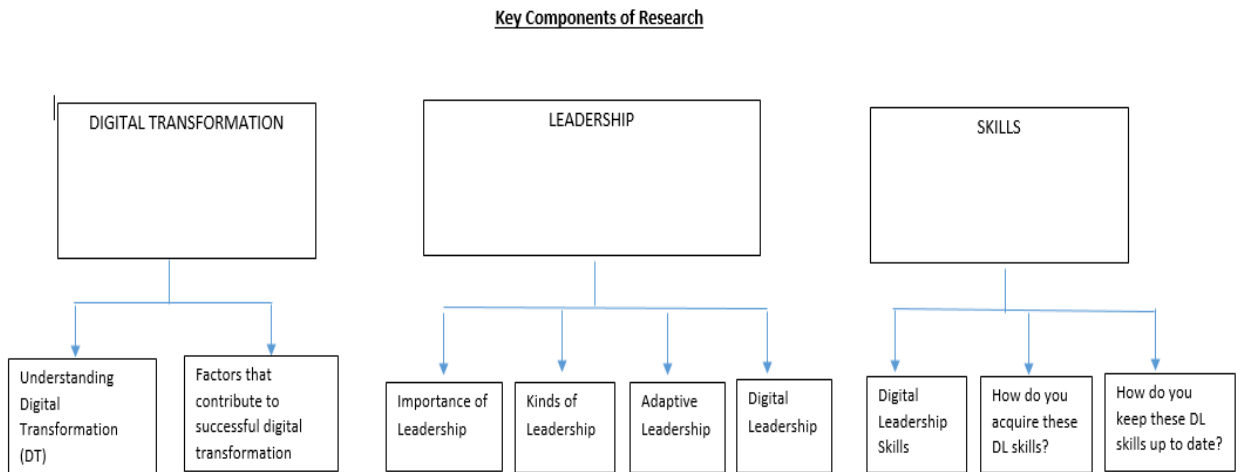


Figure 2: Key Components of Research

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

This chapter discusses the research methodology and design that were used to conduct this research study. The research intended to understand the digital leadership skills required for successful digital transformation. The literature review conducted in Chapter 2 formed the basis for the methodology and design, and helped compile the interview questions for this study to answer the research questions presented in Chapter 3. The study adopted a qualitative, exploratory approach of in-depth, semi-structured, face-to-face interviews, and the research method, research design, sample selection, and analysis reinforced the selected approach.

4.2 Research Methodology and Design

According to Golfasni (2003), qualitative research is a type of research that produces a result without a statistical procedure or any type of quantitative approach. Flick (2013) builds on this definition, stating that qualitative research should be employed when one wants to discover or describe an issue in the field or it relates to a theoretical overview (Creswell, Hanson, Clark Plano, & Morales, 2007). Exploratory research, according to Saunders & Lewis (2018), relates to the discovery of information that is not fully understood by the researcher, with the intention to gain new insights, ask new questions, and review and understand a topic from a different perspective.

The purpose of this study was to confirm if the digital leadership skills identified in Chapter 2 were relevant for successful digital transformation, to determine the kind of leader relevant to successful digital transformation and how the leaders are acquiring and maintaining these skills. As organisations now compete in the digital world, it is important for leaders to become digital leaders, adapt to the constant changes and disruptive technologies, and have the right skills to take their organisations forward and ensure their survival in this rapidly-changing world.

Digital leadership is required to drive the change and success lies in leaders' skills. In the South African market, to catch up with our peers in the global world and to enhance the way we run our organisations to compete with the requirements of the future, we need to learn from those leaders who have implemented digital

transformation successfully, and grow leadership skillsets which will equip and grow the people and organisations accordingly. A qualitative and exploratory approach was considered, as exploratory research is about “discovering information about a topic that is not clearly understood by the researcher” (Saunders & Lewis, 2018, p. 115). In this case, the topic is the digital leadership skills, the kind of leader that South African leaders require for successful digital transformation and how these skills are acquired and maintained. According to Haffke & Benlian (2016), qualitative interview methods help with understanding various management research topics where limited or no previous research exists. This approach allowed the researcher to interview various actors from various firms across diverse industries, instead of using only a single industry. This gave more perspective and allowed for a stronger foundation (Haffke & Benlian, 2016).

A deductive approach was initially used, as the research questions were generated from the literature reviewed in Chapter 2 to understand the areas that needed further research, and to try answer the research questions derived (Saunders & Lewis, 2018). However, as the research progressed and the data was being analysed, an inductive approach was adopted, as it entailed defining new theory based on the data collected and researched (Saunders & Lewis, 2018). A similar approach is seen in research conducted by Dubru (2017), who did a study on ‘The critical competencies of leaders in the digital transformation of banking in South Africa’. In this case the theory was developed based on the literature, the sample size interviewed, and information received.

A mono-type methodology was considered in the research; thus, only qualitative research was done. Quantitative research could have been conducted but, due to the lack of established and validated theories in this area, the qualitative approach was considered more suited, as the author wanted to understand which skills and type of leader are required for successful digital transformation better and the ways that are used in acquiring and maintaining their skills. Time constraints also did not allow the researcher to use multi or mixed methods. The qualitative approach required interviews to be conducted in order to gain more insight into the area of study, as illustrated by past research conducted in a similar context by Dubru (2017) and Provost et al. (2018), who all adopted a mono type methodology in their relevant research.

An exploratory study served to provide an understanding of the relationship between leadership and the skills required for digital transformation (M. Saunders & Lewis, 2018). Most papers that involve the understanding of leadership and digital transformation employed an explorative approach, for example that done by Provost, Allan Johnston, et al. (2018) and Haffke & Benlian (2016).

A case study research design was considered, as more than one organisation was used. However, only one respondent per organisation was interviewed, as the objective was to gain a general perspective across as many industries as possible. There was therefore no need to do any triangulation, and no comparisons were made between industries or leaders. Rather, according to Eisenhardt (1989), this case study method allows for constant comparison of data with theory during the data collection period.

A similar approach was seen in a paper by Horlacher, Klarner, & Hess (2016), wherein a case study approach was used to understand real-life organisation design parameters surrounding chief digital officers (CDOs) and their digital transformation activities. When a multiple case study approach was used to study the topic under investigation in various industries, it provided a means of analysis to provide deeper and richer theory in terms of understanding the background of the research (Saunders & Lewis, 2018) .

Due to the qualitative, exploratory nature of the research design, a mono-type, cross-sectional research design was used, as data could only be collected for the specific period in which the research was conducted (Zikmund, WG; Carr, JC, Babin, B, Griffin, 2013) and (M. Saunders & Lewis, 2018). Data was collected from leadership over two months; from June to July 2019 only. 17 semi-structured, in-depth, face-to-face interviews were conducted with senior and executive leaders involved in successful digital transformation in any industry in South Africa.

The philosophy that was considered for this research was that of pragmatism, as it considers the “most important determinant of the research design adopted are the research questions and objectives, the aim often being to contribute to practical solutions” (Saunders & Lewis, 2018, p. 111). This approach allowed a better

understanding of the type of leader required in this process and revealed the skills and competencies required.

4.3 Population

A population is a complete set of group members (M. Saunders & Lewis, 2018). The population targeted for this research was a sample of mainly senior or executive level managers who were specifically involved in the execution and decision making of the digital transformation aspect of their organisations, such as Chief Operating Officer's(COOs),Chief Information Officer's(CIOs),Chief Digital Officer's(CDOs), Managing Directors(MD's), directors of digital transformation, Digital Transformation Officers, general managers of HR, heads of digitalisation, or heads of Information Technology.

The objective of the research was to target any organisations in any industry that had been directly involved in implementing successful digital transformation, so they could then provide an overview of leadership skills and competencies required for successful digitalisation, as limited literature existed in this field in a South African context. As was agreed at the start of the interview process in the consent phase, all details regarding the names of the companies and their leaders were anonymised. The manner in which leaders were sourced was to confirm with individuals that they had done a successful digital transformation in their organisations, prior to an interview being set up and conducted. The population originated mainly from Johannesburg and the surrounding areas of Pretoria and Rustenburg, but also from as far as Cape Town.

A similar approach was used by Dubru (2017), who conducted her research across four large banks in the banking sector. The objective of taking different companies from different industries is to ensure a broader perspective and gain wider insight. It has been confirmed by Haffke & Benlian (2016) that using data from multiple firms, rather than from a single organisation, allows one to achieve a more general outcome with a stronger foundation.

4.4 Unit of Analysis

The unit of analysis can be any object that is being studied, ranging from a person to a company or processes, among others (Graneheim & Lundman, n.d.).

For this reason, the units of analysis for this research were the perceptions, experiences, and opinions of the various COOs, CIOs, CDOs, Managing Directors, Directors of Digital Transformation, Digital Transformation Officers, heads of HR, heads of digital and heads of Information Technology leadership who were involved in digital transformation. Understanding their digital leadership skillsets, the kind of leader one has to be, and how they acquire and maintain these skills, was a critical factor for the research and theory contribution to understand and address the three constructs of: digital transformation, leadership, and skills needed, as is stipulated in chapter 1.

4.5 Sampling Method and Sampling Size

Non-probability sampling is used to select a sample when one “does not have a complete set of the population” (Saunders & Lewis, 2018, p. 140). The sampling approach for this study was two layered, in that the researcher initially started with non-probability sampling, where a purposive sampling technique was used. This allowed the researcher to collect data for a specific purpose from a specific type of sample that would be suitable for that research purpose only (Robinson, 2014; M. Saunders & Lewis, 2018). The specific sample selected for this study was leaders who were directly involved in successful digital transformations in their organisations. The sample size was therefore small, as it related to a specific group of actors (M. Saunders & Lewis, 2018). The purposive sample was homogeneous, as it entailed one particular sub group from which data was collected; hence, there was no variation in the answers provided (M. Saunders & Lewis, 2018). This then allowed the leadership skills and competencies to be explored in more detail.

The researcher also used her networks and relationships with senior leaders to source initial interviews with individuals she knew had carried out successful digital transformation in their organisations. Recommendations of other acquaintances were also requested from the researcher’s current network, and existing respondents interviewed. This then gave rise to the snowball effect of finding more contacts in the field (Robinson, 2014; Saunders & Lewis, 2018).

The sample consisted of 17 leaders who were the key drivers of digital transformation in their organisations, which provided an in-depth view of the abilities and skills required. The leaders were mainly of senior level and executive level, who were involved in successful digital transformation. The sample group included industries from various sectors, such as mining, manufacturing, fast moving consumable goods (FMCG), insurance and medical aid, freight industry, investment houses, and retail. As judgmental sampling was used, each industry sector was not equally represented in the sample, rather, individuals who were considered to have the necessary experience and knowledge based on the current or past digital transformations done were included, regardless of the industry they work in. The respondents originated from 9 different industry sectors, and the aim was to understand the general digital skills required by leadership across various industries. The banking industry was excluded as past research of a similar nature has been conducted by Duburu(2018). A similar approach was used by Owens (2015).

The organisations used for this research were mainly medium to large organisations within South Africa, with one or two small organisations included to ensure that the right leadership level for the research was included. The goal of this research was to understand the general digital leadership skills needed by leadership regardless of the industry or sector they are involved in that enables successful digital transformation, hence the reason for taking leaders from various sectors and sized companies.

Table 1 below is an excerpt of the sample that was selected:

Table 1: Interview Sample

No	Interviewee	Position	Industry Sector
1	P1	CIO	Manufacturing company
2	P2	Head of Technology	Mining company
3	P3	MD of Technology division	Investment company
4	P4	Head of IT and Business Process Management	Freight company
5	P5	Head of IM (Information Management)	Mining company
6	P6	CIO	Online/Digital legal contracts

7	P7	Digital Transformation Officer	Retail
8	P8	CIO	Investment company
9	P9	CDO	Retail
10	P10	MD	Software company/IT company
11	P11	Head of HR Business Partnering for SA	Mobile/ICT
12	P12	COO of Organisation	Investment company and health care provider
13	P13	CDO for Group IT	Investment company and health care provider
14	P14	MD/Head of Digital Supply Chain	Software company/IT company
15	P15	CIO	Soft drinks beverage company.
16	P16	Head of Digital Innovation	Retail
17	P17	Digital Transformation Director	Alcoholic beverage company

4.6 Research Instrument

The research instrument that was used for the purpose of this research was a set of interview questions/interview guide to carry out semi-structured, in-depth, face-to-face interviews. Refer to Appendix 3 for the questions that were used. The interview guide's main objective was to ask the various leaders in each of the organisations being interviewed the same questions, thus ensuring the content validity and reliability throughout the research approach (Saunders & Lewis, 2018).

The interview questions were set up to address the research constructs for the research problem of "What digital leadership skills do South African leadership require for successful digital transformation?" They were in line with the objective of the research explained in Chapter 1 and the research questions that were formulated in Chapter 3 based on the literature in Chapter 2. The key constructs of the research problem were digital transformation, leadership, and skills. The interview questions also attempted to determine if adaptive leadership was suitable for digital transformation and how leaders acquired and kept their digital skills up to date.

There were 12 interview questions used, which were based on the research questions that had to be answered. Refer to Appendix 3 for interview guide used. The questions were simple and straightforward to allow the participants to answer the questions as openly and exploratory as possible, from their current and past experiences of carrying out a successful digital transformation. For this same reason, the questions were open-ended. The interview guide was used to allow data to be collected through semi-structured, face-to face-interviews with CIOs, Digital Officers, Directors of Digital Transformation, Heads of IT and digitalisation, HR and MDs of the technology side of companies, and senior managers, all from a range of industries as illustrated in Table 1 of section 4.5. Refer to Appendix 5 showing the Consistency Matrix of research questions to interview questions mapping.

4.7 Data Collection

In qualitative analysis, data collection occurs through in-depth interviews or observations (Golfasni, 2003).

Data was collected by conducting 17 semi-structured, in-depth, face-to-face interviews with the relevant leaders of the various organisations, in order to understand the skills needed for digital transformation, the type of leader necessary, and how these skills can be kept up to date. The leaders of the relevant organisations were sourced through the researcher's own place of work and through networking sources. Once the interviewees were identified, as per the process explained in section 4.5, an email was sent to them regarding the reason for the interview and part details of the consent form contents that would have to be signed. They were informed that permission was also requested to record the interviews, that their participation was purely voluntary, and that the research was purely for academic purposes. Once the interviewees confirmed that they were willing to participate, a meeting invite with a proposed date and time (as was suggested by the interviewee in their reply) was sent. An example of the email interview request is attached as Appendix 1.

Prior to starting the interview process, a pilot interview was run with a digital technology officer at an organisation not part of the sample list. The objective was to test the data collection process and timing of the interview prior to the actual

interviews. Before interviews were conducted, data was gathered about each interviewee from social media sites such as LinkedIn or by communicating with contacts that worked with them, with the goal of getting to know the interviewees and their organisations better.

At the start of each interview, the interviewee was asked to sign the consent form (as seen in Appendix 2). Thereafter brief introductions were exchanged between the researcher and interviewee. The researcher provided a brief overview of the reason for the research and requested permission once again for the interview to be recorded, for academic purposes only.

13 of the 17 interviews were face-to-face interviews that were held at the interviewees' place of work in boardroom settings. Four of the interviews were done online through video calling in boardroom settings, as the interviewees were from outside the Johannesburg area, and one respondent had several meetings in various locations and could not meet at his office. One interview started out as a face-to-face interview, but was interrupted by an urgent matter that the interviewee had to attend to. The interview was conducted online later in the day. The interview time varied based on the individual that was being interviewed. The longest interview took about 75 minutes and the shortest interview took 30 minutes. On average, interviews lasted approximately 45 minutes.

The recordings from these interviews were then sent to a transcriber and these transcriptions, together with the brief interview notes that were taken in the interviews, were used in the data-analysis process. The interviews were conducted during the months of June and July 2019, with many interviews set up daily over this period.

According to Guest, Bunce, & Johnson (2006), data in a qualitative analysis needs to be collected until the point of saturation is reached, as this is an indication of excellence. There are several instances in which saturation is considered reached, which depend on "the number and complexity of data, the investigator's experience and fatigue, and the number of analysts reviewing the data" (Guest et al., 2006, p. 77). Thus, for the purposes of this research, the findings according to Guest et al., (2006) suggesting the use of approximately 12 interviews for saturation to be

reached were used as a guideline. The number of interviews specified achieved the objective of understanding common insights, skills, and experiences among a group of similar people. In this research saturation was already achieved by the 12th interview; however, a total of 17 interviews were conducted, as the researcher needed to reaffirm the saturation. The graph below illustrates the saturation point:

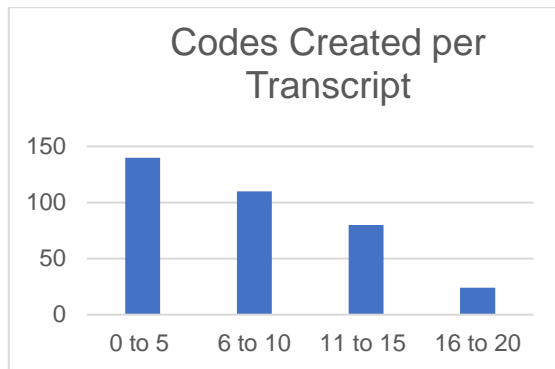


Figure 3: Point of Saturation Reached

4.8 Data Analysis

Analysis of the data entailed the recorded interviews being transcribed by an independent transcriber. These transcriptions, together with the limited notes captured by the researcher and documentation such as a skills model currently being used by one of the interviewees, formed part of the data-gathering process (Saldana., 2013; Rubin & Rubin, 2011). Once a recording was transcribed, it was loaded on a central location by the transcriber. The transcripts were then read through and checked to ensure all terminology and content was written up correctly. Minor updates were made where there were interferences leading to any areas being a bit unclear in the transcript. These mainly occurred in the transcripts of online interviews.

Thereafter, the checked transcripts were loaded into the CASDAQ data analysis software tool called Atlas ti. The tool allows one to identify codes within each transcript, and a total of 353 codes were identified. Subsequently, code groups were formed and themes then manually derived from the grouping of similar themes of the code groups (Saldana., 2013).

The objective was to use the themes to address the research questions. The analysis approach used was a thematic analysis process, which is described by the six-phase approach of Thematic Analysis by Braun & Clarke (2006):

i) Familiarise yourself with your data - After the data was transcribed by an independent transcriber, the researcher read through all the transcripts in line with the audio recordings and notes to ensure the content was correctly transcribed, and to fill in missing content, especially for online meetings. This approach also allowed the researcher to gain a better understanding of the data, and some points for the coding process were highlighted in the transcripts.

ii) Generating initial codes - The coding process was carried out using the coding tool Atlas ti. Learning how to use this tool took about 2 days and entailed watching YouTube videos and exploring the tool, as well as attending a workshop at the researcher's business school. Thereafter, the transcripts were all loaded into Atlas ti., and a deductive approach was initially employed for creating codes based on the literature and the interview guide.

iii) Searching for themes – As the data had been coded the codes started to show certain themes, and were grouped into code groups of related codes.

v) Reviewing themes - Additional coding had to be done from an inductive approach, (which is a bottom-up approach), as more themes began to emerge while going through the transcripts. The codes were then sorted into code groups/categories of similar-themed items. These code groups were then starting to show emerging theme's.

vi) Defining and naming themes – Themes were created based on common ideas or concepts and patterns that were seen, which were in line with the literature of Chapter 2 and research questions in Chapter 3, as well as the key constructs of leadership, skills, and digital transformation. Grouping themes was done manually on paper.

v) Producing the report – The data collected was then analysed based on the research questions, by extracting key quotations to illustrate the findings per research question when compiling the research report.

In understanding and analysing the data, the process of frequency analysis was used, which entailed that each construct, idea, skill, or thought was recorded by the number of times it was repeated. This was captured in frequency tables (Owens,

2015). These skills, or factors from the frequency tables were ranked where appropriate, and were then used in the analysis and discussion of the data.

4.9 Data Validity and Reliability

Validity has been defined by Golfasni (2003) and M. Saunders & Lewis (2018, p134) as “the extent to which data collection methods accurately measure what they were intended to measure, and the research findings are really about what they profess to be about”.

Reliability has been defined as “when data collection methods and analysis procedures produce consistent findings” (M. Saunders & Lewis, 2018, p. 135). The reliability and validity of all research methods being conducted are important to ensure credibility and rigour (Morse, Barrett, Mayan, Olson, & Spiers, 2002) and (Golfasni, 2003).

Rigour is further demonstrated by the data having credibility, confirmability, is dependable and transferable as per Morse et al., (2002).

To provide credibility during the interview process, an iterative process of questioning was used, and interviewing individuals of similar levels by ensuring the sample was purposefully selected, thus also ensuring the dependability of how the data was collected.

Semi-structured, in-depth interview questions were used to collect data, and to ensure that the data collected was valid and reliable therefore an interview guide was used to ask the same questions to all the participants. The research conducted used the theories from literature which allowed confirmation of what the data-collection process brought about, and transferability of learnings from literature and from the interviews.

4.10 Research Limitations

As stated by M. Saunders & Lewis (2018), qualitative research is subjective and is at risk of being subjected to many biases. Therefore, the following limitations were

identified:

- The interviewer had no previous training in interviewing, which could impact the interview process.
- The interviews were limited to South Africa, as the key focus of this research was leadership skills in South Africa, with more focus on leaders in Johannesburg, then Cape Town, and then in Rustenburg. This could cause geographical bias in the participants' responses.
- The study was limited to digital transformation and the skills of senior and executive leaders in the organization. The study did not look at skills and thinking of other management levels or the employees of the organisation who may have had a different perspective to that of their leaders and impacted the results.
- The research was not conducted in all the available industries in South Africa, as it was limited to the sectors in which interviews could be arranged and to the point of saturation. In most cases only one individual from each organisation was interviewed.
- The research did not look at the other aspects of digital transformation, such as technology, value chain, strategy, and so on.

CHAPTER 5:RESULTS

5.1 Introduction

This chapter presents the results based on the research questions that were formulated in Chapter 3 and based on the analysis of the data that was collected during in-depth, semi-structured, face-to-face interviews. The interview questions were derived through the use of the consistency matrix, and were mapped against the research questions of chapter 3 and helped to maintain consistency between the research questions, the literature reviewed, data collected and the method of analysis. A consistency matrix (see Table 1 in Appendix 5) ensured consistency between the research questions and the interview questions.

5.2 Description of Sample

Seventeen interviews were carried out for this research, with one pilot interview prior to the start of the interview process to test the interview guide. The list of respondents is depicted in Table 2 below, illustrating their designation and the type of company they worked for. As was agreed with the respondents, anonymity of their names and their company names will be maintained in the research. The respondent's feedback will be discussed based on their anonymised names and the type of company they work for. The sample was collected through the process of purposive judgmental sampling, as the researcher sought leaders from any industry who had carried out successful digital transformation in their organisation. However, not everyone from every industry was included in the sample as judgemental sampling was used alongside snowball sampling, to get contacts for the research to test its general objective across as many industries as possible.

From the 17 interviews, four interviews were conducted as online video calls due to the interviewees being based in Cape Town and Rustenburg, or not being able to meet due to time constraints. The sample was not restricted to companies in specific industries, but was targeted at organisations in any industry that have successfully implemented digital transformations. The reason for this was to get a general idea of the digital leadership skills required by leaders. Of the sample size, only three were women and 14 were men. The individuals interviewed were CIOs, a COO, CDOs, managing directors of companies, directors of digital transformation, heads of IT or Digital Transformation/Digital, Digital Transformation Officers, and a head of HR.

These individuals were chosen as they are the ones responsible for or that drive digital transformation in their respective organisations. All interviews that were conducted face to face were conducted in a boardroom environment except one, which was conducted at a coffee shop. The four interviews that were online video calls were also conducted in boardroom environments. Table 2 below lists the individuals that were interviewed for this research and the various industries they are from:

Table 2: List of Interviewee's and their Industry

No	Interviewee	Organisation	Gender	Position	Industry Sector
1	P1	O1	Female	CIO	Manufacturing
2	P2	O2	Female	Head of Technology	Mining company
3	P3	O3	Male	MD of Technology division	Investment company
4	P4	O4	Female	Head of IT and Business Process Management	Freight company
5	P5	O5	Male	Head of IM (Information Management)	Mining company
6	P6	O6	Male	CIO	Online legal contracts
7	P7	O7	Male	Digital Transformation Officer	Retail
8	P8	O8	Male	CIO	Investment company
9	P9	O9	Male	CDO	Retail
10	P10	O10	Male	MD	Software company/IT company
11	P11	O11	Male	Head of HR Business Partnering for SA	Mobile/ICT
12	P12	O12	Male	COO of Organisation	Investment company and

					health care provider
13	P13	O13	Male	CDO for Group IT	Investment company and health care provider
14	P14	O14	Male	MD/Head of Digital Supply Chain	Software company/IT company
15	P15	O15	Male	CIO	Soft drinks/beverage company.
16	P16	O16	Male	Head of Digital Innovation	Retail
17	P17	O17	Female	Digital Transformation Director	Alcoholic beverage company

5.3 Presentation of results

The results are presented as per the research question presented in Chapter 3 and the interview guide as mapped in Appendix 3.

5.4 Results for Research Question 1

Research Question 1: What is leadership's understanding of digital transformation?

This Research question related to question 1 of the interview guide and was asked to set the context of the interview. The aim of this question is to gauge South African leadership's understanding of digital transformation in line with the technologies that relate to it, and to gauge the relevance and importance of digital transformation to their organisations.

Digital transformation has many definitions and the understanding of it varies between organisations. Interview question 1 was asked to gain the leaders' perspectives of what South African leaderships understanding is of digital transformation and how it is perceived in their organisation. Various views emerged, as illustrated below.

Quite a few of the leaders understood digital transformation as a form of system automation, and data becoming more digital. Other leaders believed it to be related to modernisation, as one Managing Director elaborates: “...*It really is about modernisation, automation of organisations largely through digital tuning.*” (P3, 8:1). Some leaders believed that acceptance of digital transformation is important mainly to understand and benefit from it. However, many leaders believed it is related to a change in business models by using technology, collaborating across your organisation to change your business’ existing model, or creating new business models. As stated by a CIO of a digitalisation company:

“...very simply it’s the deployment of technology to bring about fundamental and substantial change to a business model and the way in which services are delivered to consumers.” (P6, 4:4)

The use of many disruptive technologies is key, as they felt that technology was a key factor of digital transformations. Technology was considered the basis for successful digital transformation, as one needs the supporting infrastructure to enable digital transformation.

To the contrary there were many leaders who believed that digital transformation is not only about technology, but also the people aspect of it. A common concern regarding digitalisation was that most people believed that their jobs are going to be taken away, while others were not ready to adapt due to fear of change. Therefore the respondents believed that people needed to be taken along on this digitalisation journey too. It was opined that one also needs to empower the right people to run digital transformation. Technology is there but having the right people/talent running digital transformation and employing the correct people are key as without the right people, the technology will not be usable. This is confirmed by the Head of IT below:

“But you need to ensure that you have got the right skills, the right people to support you and people that will recognise opportunities that will drive solutions with you.” (P2, 1:17)

A few leaders also believed that digital transformation was a mind-set change, a business process change, and a way to do good with technology. As one MD stated:

“It is not about looking at digital transformation within a constituent part of the system, it’s a case of looking at it more holistically and what is the relationship between the parts” (P3, 8:7)

Finally, a few leaders believed that digital transformation is about where you want to take your organisation in terms of a new business model or differentiating yourself from the customers, and therefore taking the opportunity when it comes, is vital.

Overall, the respondents concurred that it was about changing the way you worked, so that you served the customer in the most interactive ways, reduce costs, and increase revenue, as a result of new business models. Digital transformation is certainly a continuous process, and not a once-off implementation.

5.5 Results for Research Question 2

Research Question 2 (RQ2): What are the factors that contribute to a leader carrying out successful digital transformation?

The objective of this research question is to understand what are the key factors that contributed to the success of digital transformation in the respondent’s organisation. This Research question is based on interview question 2 which seeks to understand the examples of successful digital transformations carried out by the leaders of the relevant organisations and, based on that, which factors South African leaders regard as being key contributors to their organisations’ successful digital transformations.

5.5.1 Organisation Examples of Digital Transformation

One of the main reasons for choosing these particular leaders for this research was to learn from their experience of successful digital transformations that they implemented, and identify what contributed to this. The details of the transformation for each leader’s organisation varied, however for most, it was a journey of implementing various technologies in the form of system automation and a change in business processes. In the majority of the cases the use of mobile technologies, the use of robotics and implanted/sensory technologies, digitalisation of supply chain processes, big data analysis technology, social media implementations, systems

automations that integrated with big data technologies, and cloud upgrades were implemented, bringing about significant change.

5.5.2 Factors Contributing to Successful Digital Transformation

In light of the various digital transformation technologies that the various leaders implemented in their organisations, a plethora of factors that contributed to their success emerged. A frequency count could not be done as each factor varied based on each leader's context of successful digital transformation implemented. However a table is created listing the most emphasised factors as per the respondents in no particular order. Refer to Table 4 at the end of this section.

Infrastructure

A few respondents mentioned that having the right infrastructure in place is vital, as confirmed by the Head of IT at a mining company, *“a key factor to enabling digital transformation is being robust and having next generation infrastructure in place.”* **(P5, 9:7)**

Leadership Support

The support of leadership, and having all executive leadership buy-in is crucial in the bid to drive digital transformation through the organisation and so is communication. Nearly all of the respondents believed that no digital transformation is successful without the support and buy-in of senior leadership as confirmed by head of IT at a freight company:

“The first is the leadership. For any change, as long as you don't have the buy-in of the leadership you are in big trouble.” **(P4, 2:7)**

Another head of IT also mentioned that a paradigm shift where the organisation is and where it is going (having a vision) is what contributed to their successful digital transformation as this was communicated by the leaders. There was also an opinion that leaders are constantly being watched and have to remain calm and lead by example as stipulated by a CDO: *“...you have to have this calmness around you when things go wrong...”* **(P9, 6:50)**

Listening

A few respondents mentioned that leadership that listens to people and understands the customer, user and the environment is paramount. Leaders also need to listen to their employees who could be informing them of potential opportunities through bottom-up approaches in the organisation thus allowing better decision making. Leadership, trust, and belief are important for to the success of digital transformation. As confirmed by one Chief Digital Officer:

“You need to be able to listen to people, because people have got a lot of great ideas, and talk about these ideas, and it’s about innovativeness, and you need to be innovative and try new things.” (P9, 6:33)

Hiring or acquiring the correct talent and having the right people work for you

Another key component that was mentioned a lot by the respondents for DT is the people. Most of the respondents mentioned that an organisation needs to take their employees with them on their journey of digital transformation, by communicating all what is happening, so people feel part of the transformation. Many leaders believed that appointing the right people to the task aided digital transformation greatly therefore recruiting the right people and equipping them with the right tools contributes to the success of digital transformation. This is confirmed by the Head of IT Business Processes who makes a valid point stating that :

“...if you’ve got a beautiful system or great digitalisation to implement it can be a flop as long as you don’t have the right people” (P4, 2:4)

The Director of DT stated *“Hiring millennials has also been key to the creativity and decentralised decision making” (P17, 17:6)*. As millennials are considered to think and work differently and therefore need to be managed in a different manner to get more creativity flowing, thereby allowing cross functional collaborations with decentralised decision making.

Collaboration

Close to half of the respondents believed that the collaboration of teams across the once siloed way of working, brings about success in digital transformation. In order to collaborate one needs the right tools, as one Managing Director states:

“...So you can’t ask people to be in a collaborative culture and not have the tools that support that collaboration” (P10, 7:15)

Partnerships with external vendors or other parties are also beneficial as this provides you with a variety of skills and expertise beyond that of your organisation.

Understanding Big Data

A fair amount of respondents believed that data or big data is key to any digital transformation, as is ensuring that you are able to identify, collect, analyse, and protect the data. Master data or big data is critical in any organisation for analytics, and one needs to understand how data flows through the organisation and how to analyse it. One CIO is quoted as saying:

“If you do not have big data capabilities in your organisation you are going to die.” (P8, 5:33)

Building trust is another key element, according to a few leaders. This trust can be built with external parties such as vendors, customers, and employees.

Research and Upskilling

One CIO mentioned that one should research constantly and that a leader should be agile to changes:

“For me the key success in all of these things is that you have to do your research. It’s like you want to measure twice and cut once.” (P6, 4:10)

Quite a few leaders mentioned that leaders who constantly research and learn new skills in terms of design thinking has been another prominent point made by a few leaders who believe and have seen the principles and techniques of design thinking helping them with their transformation, by allowing the leader and organisation to ideate and create solutions to help their clients. Systems thinking was a skill that also a few respondents mentioned worked well in their organisations and helped them in their transformation:

“So design thinking has been key in how we actually approach our transformation journey.” (P8, 5:6)

Learn from Failure

However, in creating these solutions and implementing digital transformation, the leaders have found that they need to fail quickly and cheaply. Majority of the respondents mentioned that they had to learn to fail, but had to also learn from these failures. Leaders also have to think quickly and take opportunities when they arise or risk losing them: *“one has to take a risk sometimes to make something work” (P9, 6:76)*. Changing the way of working also contributes to successful digital transformation, as: *“...job roles are changing, and the way they used to work is changing” (P9, 6:77)*

Culture

Culture also emerged as a significant component in successful digital transformation with a fair amount of leaders stating that *“probably one of the most important things was around the culture.”(P10, 7:8)* The culture of the organisation impacts the success of digital transformation. The way people do things in the organisation is the culture of the organisation that sets the tone be it from leadership or the employees in the organisation. This was quite an emphasised factor.

Adaptability

With things in the digital transformation space changing so rapidly, it has been said by the respondents that someone who is able to adapt to change, move quickly with the times and be more agile is key, and having good IT governance was also mentioned by a few respondents as being important. One Managing Director said that:

“things need to be a lot more faster. If you are not digitally focused you can’t adapt fast enough to your market, your customers or your internal employees’ requirements.” (P14, 11:6)

The Use of Social Media

Another aspect of successful digital transformation identified by a few respondents was the use of various social media platforms and its use aiding digital

transformation due to the usefulness of this technology in communication to employee's and customers.

Change Management

A final unique contribution was the help of change management as mentioned by a few respondents is vital in getting everyone ready for the process of digital transformation. This entailed bringing various elements of value chain and understanding interdependencies, and carrying out management of transformation systematically. As one business IT manager and CIO states:

“The people aspect, the change management was quite critical as well.” (P4, 2:6)

The key factors to successful digital transformation that most leaders emphasised upon, in no particular order are illustrated in Table 3 below:

Table 3: Key Factors for Successful Digital Transformation

Key Factors for Successful Digital Transformation
Leadership buy-in
Learning from failure
Big data
Employing the right people
Culture
Collaboration across silo's

5.6 Results for Research Question 3

Research Question 3 (RQ3): Understanding the importance of leadership in digital transformation:

This research question aims to understand the importance of leadership in digital transformation from two perspectives in terms of the kind of leadership that is required for digital transformation which forms one research sub-question that relates to interview question 3 and 4. The other research sub-question relates to how

adaptive leadership contributes to successful digital transformation in interview question 5 and 6.

5.6.1 What kind of leadership is required for digital transformation?

The objective of this research question is to understand if South African organisations consider leadership to be important in digital transformation, or if there are other factors. Based on this, the next objective is to understand what kind of leader is required for successful digital transformation to occur. This question also aimed at unpacking one of the main constructs of this study which is leadership.

a) The Importance of Leadership in Successful Digital Transformation

The objective of this question was to gauge from fellow leaders the importance of leadership in digital transformation or if they regarded other factors to be more important than leadership. As per the findings, leadership was unanimously regarded as critical by all of the respondents, as it is seen as a key driver in carrying out any change successfully. As one Head of IT mentions: *“So leadership is key to ensuring that any change is driven successfully” (P2, 1:13)*

A point made by most leaders is that one needs leaders who can execute, not just talk, and who are explicit. It is easy for leaders to talk about options, but they need to be able to get things done. As mentioned by one Digital Officer:

“So if you really want to get the change through an organisation as a leader you have to live the change, and you have to demonstrate it. And that requires effort...to actually do stuff.” (P7, 18:7)

One head of HR mentioned that leadership is more important than skill the second most important criteria in his book for digital transformation. According to one chief digital officer, leadership ‘fashionista’s’, who are leaders at the forefront of technology, are vital to digital transformation as one cannot afford to be a leader who is lagging.

Leadership buy-in has also been regarded by most respondents as being very important for the success of a project. Leaders need to show they believe in the project, as four out of the 17 leaders mentioned that leaders’ behaviours are being watched and mimicked at all times. As stated by an IT Business Manager:

“If the CEO says it’s important but behaves another way the people can see it, so the true ownership and belief in the system itself from a leadership perspective is very important.” (P4, 2:11)

A few of the respondents believed one has to be optimistic and brave as a leader. People look to leaders and scrutinise their behaviour all the time therefore leaders need to be aware of their behaviours and how they react in meetings, and when a crisis occurs the people around them are constantly watching them and react accordingly.

However a few respondents believed, the role of leadership should be seen as critical at all levels, not just in senior and executive leadership. Leadership buy-in must also occur at all levels, all the way down to the employee level. However, an interesting point made by many respondents is that leadership must be willing to experiment and fail. This was considered a critical success factor by most respondents. Leadership need to model behaviour as they are constantly being watched, so it’s ok to fail as that is the culture that is then created . As one MD states:

“If your board or your CEO and the Exco don’t model the new behaviours, if they don’t model the fact that it’s okay to try and fail, and create space for that, they won’t be giving permission to the organisation to also embrace this.” (P10, 7:19)

Many of the respondents emphasised that leaders carrying out digital transformation need to accept and be prepared to fail to succeed, and this is a norm that must be accepted and allowed.

Leadership is not Always Critical

However despite the view that most leaders considered leadership important, there were a few leaders who did not think leadership was the important driver of successful digital transformation. One CIO believed that leadership is not as critical as when there would be a restraint on resources, as the CIO of a manufacturing company believed that:

“...Leadership would be very easily thrown money at a digital attempt, for want of a better word, if there was plenty of money going around. But...when resources are constrained it tends to go to the back burner.” (P1, 3:7)

Another sentiment, shared by an MD of the technology side of his organisation, did not believe leadership was a critical success factor, but rather that: *“...one needs a particular type of thinking and capability to be able to get it over the line.” (P3, 8:10)*. The way one's mind-set is and the skills and capabilities of the leader was regarded as the driver for leadership's success.

Another CIO believed that *“It is important for leaders to have a strategy and to be involved in driving that strategy” (P6, 4:13)*. This point was iterated by a few leaders stating that the strategy is the vision that guides the execution of the transformation.

The CIO of a beverage company mentioned that digitising for the people, product, and customer is also important, as organisations exist due to their people, the customer needs and the product that has to be delivered.

A key mention was that leadership is key in setting the culture for the success of digital transformation. The behaviour and actions of the leader is what drives the culture of the organisation.

A few respondents therefore believed that Leaders therefore need to keep up with the times or their organisations will likely not survive. Leadership need to take ownership to drive digital transformation in the organisation in order to ensure its success. As one CDO of a vehicle retail chain confirms:

“... you need somebody that takes ownership of this journey and drives it, and with support from the organisation itself, then it will work, otherwise it's definitely not going to work.” (P9, 6:17)

A few respondents also mentioned that people also want to follow iconic leaders, and those who know the new ways of the world, as they provide direction and assurance that they know what they are leading. Another Head of IT of a mining company mentioned that one needs a different type of leader who is at the forefront and one that thinks outside the box to lead their teams and organisations into:

“that new future of a data hungry, data available world and then apply technologies on top of that to the right benefit. But you won't be able to achieve that if you don't have that out of the box leadership approach in terms of adopting those mechanisms and making sure that you have implemented.” (P5, 9:11)

Leaders who Listen to the Younger Generation and have a Vision

Many respondents understood leadership is critical, but the respondents also mentioned that leaders need to also be aware and understand that they do not know everything and that it is important to turn to the younger generation to lead innovation and creativity. Leaders who have a vision and who can connect with various generations through the journey of digitalisation have a better chance of being successful. As one Managing Director of a technology company mentions:

“So in order to be an effective leader you need to be able to connect to all of those different genres of people, the millennials, the baby boomers... And it's knowing how to interact with each one of them, how to bring them together and then how to channel them into a digital strategy” (P14, 11:23)

b) Kind of Leadership for Successful Digital Transformation

This part of the research question related to interview question four and was asked to gain an understanding of the kind of leaders the respondents felt are suitable for carrying out successful digital transformation. The respondents had the following to say:

Leaders that understand technology

Leaders who understand technology came out as key for most respondents. Most respondents believed that a leader who will be carrying out digital transformation needs to have an understanding of technology, even if it is a basic understanding, as they need to know what is out there and understand the trends. A Head of Technology confirms this

“For me a leader that would carry out digital transformation is one firstly that is informed of what are those...” (P2, 1:15)

Leaders who empower their Teams and People

Leaders need to enable their teams or employees and it is therefore important to hire the correct people to help a leader lead. As the Head of Technology at a mining company states:

“But you need to ensure that you have got the right skills, the right people to support you and people that will recognise opportunities that will drive solutions with you.” (P2, 1:17)

What also came to light was that leaders do not need to know everything or always do everything as this same leader indicated:

“...being able to be vulnerable to your team. Giving way when you see that it’s not your time to lead, step back and let people that have the capability to take you forward.” (P2; 1:18)

People Skills Having the Right People/Talent

It has also been mentioned that a leader with humility is important, as is someone that is happy with constant change and helping people to embrace that change. A leader who is open to change, positive, and is a people person is key as they need to understand their people and their key capabilities and support them. As one head of IT at a freight and logistics company mentions that being calm and optimistic during adversity and tough times is fundamental, as people are looking at their leaders to see how they react, and will react accordingly. A leader’s behaviour impacts the success of the project.

As a result many respondents emphasised that leaders need to have the right people is deemed important, as these people are the ones that help the leader and enable success of the project. However, it was mentioned that not all people want to go on the journey, and this requires a leader to bring them along. Being a strong and tough leader was required at times, as well as being supportive and showing emotions. As one Head of IT recalls saying to her people: *“I’m right behind you I’m going to make sure you get there.” (P4, 2: 21)*

Learning to Fail as a Leader

Another key aspect mentioned by most leaders is that a leader who is willing to fail or learn to fail so they can learn and succeed is important. Failure is something that

comes across that a leaders needs to accept as part of the process. An agile leader who is open to failure is key, as you have to fail to learn. That being said, it is important to, but as long as you fail and get up quickly again:

“...but you need an organisation at least that’s now agile that will be able to quickly implement the solutions and if they fail then they get out very quickly and actually recover” (P15, 15:10)

Having a Vision and Communicating and Open Minded leaders

A visionary leader who is informed about technology and is open minded, but who is also experimenting in a digital world, is a core aspect of successful digitalisation. A few of the leaders mentioned that the way the leader thinks is important and that in carrying out digital transformation one has to be open minded to the changes coming your way and think differently to achieve your vision. As one CIO of a digital legal company mentions, leaders who:

“...can effectively communicate that vision in a way or distil it down to a way that effectively there is enough buy-in and support for whatever initiatives are necessary to meet that vision.” (P6, 4:15)

Leaders that are Bold and Brave

Another key theme that arose is that leaders need to be bold, have the courage to carry out what they believe in, and stand up against other leaders should the need arise, in order to see something they believe in succeed. This point came about as a few leaders felt that in South Africa our leadership are not always wanting to try new things, so as a leader you have to be bold and brave to carry out what you believe in. As mentioned by a CIO of a digital legal company:

“And I think it involves courage, you need to have courage and you need to be bold because you need to be.....” (P6, 4:16)

A few leaders mentioned that due to many South African leaders being still quite reserved in their thinking, a leader who believes in a new idea for transformation, needs to stand up and hold their ground in this regard to make things happen.

Leaders that have a strategy are important as you need a leader that acts quickly when opportunity presents itself:

A Flexible, Adaptable, and Agile Leader

A few of the leaders believed that being a flexible, adaptable or agile leader is important in these situations as the head of IT of a mining company mentioned:

“...it’s not a specific type of leadership style, it’s actually being adaptable to use the different styles to the environment or the situation as you face it.”

(P2, 1:19)

Also, a flexible leader who understands when to cut their losses when things are not working, and who has a growth mind-set can recognise when there are other opportunities that will work:

The mind-set is also mentioned, that a leader that is open minded and has a learner mind-set is also key:

“...So you need to have someone who has a level of tolerance for failure. You need to have someone who’s got an open mind in being able to actually try out things in open blue spaces.” **(P8; 5:14)**

Another unique perspective was that of a CDO of a retail chain who said one needs a unicorn leader or servant leadership, which is an enabling role, where a leader is a constant learner, non-authoritarian, sets a high bar of expectation and vision for their team but also encourages failure and learning from it.

Leaders who can execute

A key point raised by a few of the respondents is that an effective leader is one who not only talks about what has to be done, but who can actually implement or execute what they are saying:

“We can talk a lot, and a lot of people talk a lot, but you need to, when the tyre hits the tarmac you need to get - and implement, and you can start small, and we use the words fail fast and react fast, and learn fast, but somewhere you have to start doing stuff..” **(P9, 6:27)**

A leader that understands IT can effectively communicate with the relevant experts and one that also has good business skills can have business conversations with key members of the organisation. A leader that stays abreast of what is happening

around them is an effective leader. That being said, a leader that can still keep the core of the business going is vital

South African Leaders and other Types of Leaders

One CDO of a retail vehicle company believes that digital skills are needed and difficult to find in South Africa. Finding effective digital leaders is also a concern:

“So I think it’s a bit of a factor where there’s a lot of skills needed around and I don’t think there’s - there’s not a lot of people like that currently available I think it will come, it’s growing. I think it’s still a challenge in South Africa currently to get a really effective digital leader that can implement and talk about it.” (P9, 6:26)

One of the CIOs of a manufacturing company said that she believes that South African leaders are not moving with the times of the digital age as:

“...possibly needs to have experienced another world, a more digital world. So I think in South Africa we lack that experience, that context.” (P1, 3:11)

Other Types of Leaders

Another unique concept that came up is that of being a generous leader, and a leader who creates an ecosystem of collaboration not only within the organisation but with other organisations too. A key point made by one of the Managing Directors of a software house is that if leaders acquire the correct skills they emerge as natural leaders, and their thinking changes accordingly.

One head of IT also mentioned that leaders who are millennials would be suitable leaders as they: *“can accept the new technology and understand the new technology and then change direction quite quickly from an agile perspective.” (P5, 9:13)*

Immersed in Technology, Collaboration, and Vision

A leader that is immersed in technology or hires the correct people to help him/her through digital transformation is likely to succeed. One that understands the context of the situation and that who you partner with is important, hence a leader that can collaborate is regarded as important. A leader who anticipates change and is a visionary leader.

“Collaboration matters... So I’d say having a vision, but maybe it’s both. Having a vision but also anticipating what could some of the stumbling blocks be ahead of time.” (P11, 13:8)

There were several descriptions that came up regarding the kind of leadership required for successful digital transformation. Table 4 below lists the top characteristics the kind of leader that is ideal for carrying out successful digital transformation based on a frequency count done on the mention of the kind of leaders by the respondents:

Table 4: Kind of Leadership Require for Successful Digital Transformation

Rank	Kind of Leadership	Frequency
1	Leaders who are willing to fail	8
2	Leaders who understand I.T	5
3	Leaders who collaborate	4
4	Open- minded leaders	4
5	Having/hiring the right people &	3
5	Adaptable, Flexible, Agile Leaders	3
Unique Mention	***Generous/Unicorn or Servant Leaders	1

5.6.2 To what Extent does Adaptive Leadership Contribute to Digital Transformation?

This section relates to the second part of Research Question 3, and relates to interview questions 5 and 6. This research question intends understanding leadership’s view on what adaptive leadership means. The other part to this question

was whether adaptive leadership is relevant to digital transformation and what skills or aspects are applicable.

a) What is Adaptive Leadership?

Most respondents described adaptive leadership as the sort of leadership that adapts to the context of the situation, is situationally aware, is contextual, adapts to situations, and understands the environment and acts accordingly. There is also mention that these leaders have many networks to influence accordingly. As confirmed by the head of IT for a mining company:

“It’s a leader basically that has context of the environment, that understands contextually what the environment is, assesses the environment and acts accordingly...” (P2, 1:21)

Each respondent’s understanding of adaptive leadership varied; however, the common underlying notion was that adaptive leaders work with what comes their way, adapt to situations, are open minded, and understand the different aspects of their business to change with the times. Adaptive leadership has also been defined as flexible and agile by many of the respondents. However, a few leaders mentioned it always entails getting things done rather than procrastinating. Situational awareness was also identified as important as stipulated by the MD of a IT division.

Looking at new opportunities and ensuring things get done and taking opportunities when it presents itself. The concept of failing was mentioned by many of the leaders, where a leader should learn to fail quickly and cheaply comes up again for adaptive leadership, but it is mentioned to fail quickly and cheaply this time around as mentioned by this CIO of a beverage company:

“So be open minded, take all on-board but be decisive around what you are going to do, and have early detections if this thing is going to fail, fail early than to invest too much on something that fails after five years after you have spent a heck of a lot of money on it.” (P15, 15:12)

In order to survive in the digital world the respondent's believed one cannot be stuck in the old ways.

Most of the leaders understood what an adaptive leader was. A comparison of the leadership description of the type of leader for successful digital transformation and adaptive leadership characteristics has been done to analyse the similarities. Refer to Table 5 where a comparison of the kind of leader for successful digital transformation characteristics mentioned in Chapter 5 is done with adaptive leadership characteristics.

Table 5: Comparison of Leadership for DT and Adaptive Leadership Characteristics

Kind of Leadership for DT	Adaptive Leadership Characteristics
Leaders who are willing to fail	Leaders who are open to failure and learning from it
Leaders who understand I.T	Adjust per situation/context
Leaders who collaborate	Leaders who network and have lots of contacts
Open-minded leaders	Open Minded
Adaptable, flexible, agile leaders	Flexible and agile
Having/hiring the right people	N/A

b) Relevance of Adaptive Leadership

Adaptive leadership has been considered not only relevant to most cases by most respondents, but as crucial to digital transformation. As one CIO confirms:

“...it’s absolutely crucial because the world of tomorrow isn’t the world of today. So I think it’s absolutely crucial that leaders understand the opportunities, are open to change and are looking for new ways of doing things all the time...”

(P1, 3:14)

In confirming the relevance of Adaptive leadership to successful digital transformation, the respondents then specified the adaptive leadership skills that make this form of leadership relevant. The reason that adaptive leadership is considered relevant to successful digitalisation is due to the skills listed below.

c) Adaptive Leadership Skills

The below skills were identified as being relevant to adaptive leadership:

Having a Vision and Being Able to Communicate

Adaptive leadership skills that came up by many of the respondents is the ability to adapt to the situation, having a vision, immersing oneself and employees in technology to understand things better, and communicating clearly:

“Communication is very important because if people don’t know where you are taking them how will they go with you. So you need to be able to sell your vision.” (P2, 1:22)

Taking People on a Transformation Journey

Having the end goal in mind and taking people on the journey of transformation and managing stakeholders is also a key trait by a few leaders. One Head of IT said that adaptive leadership is a fifty-fifty concept. Leaders and organisations have a choice of whether they want to adapt or not. Those that have adapted have grown, and those that chose not to adapt have stayed behind: *“But it’s okay as an organisation if you decide we are not going to grow,” (P4, 2:29)*

In taking employee’s on a journey two respondents mentioned they used story telling. The head of IT of a mining company mentioned that as leaders they would use story telling to show the people where they were to where they are going.

Understand Market/Environment, Being Agile, Having People and Negotiation Skills, and Being Open Minded

Other skills that come up by a few leaders are knowledge of the market and knowledge of requirements to understand the environment one is operating in. Many of the respondents mentioned being agile, innovative, having people skills,

and a few respondents mentioned possessing project-management skills are all important to deal with changes and managing people. Many of the respondents believed one also needs the skillset of someone who listens to people, can make decisions, and appoints the right people who will take accountability. Being an agile leader is also quite important, as is having a learner mind-set.

Cognitive skills was mentioned by many of the leaders, also called metacognition, in terms of self-awareness and self-reflection are highly beneficial to adaptive leadership, as is the ability to accept and understand technology. A few leaders mentioned negotiation skills in terms of costs, products, and services are an important facet, and an adaptive leader needs financial acumen skills for all the changes that will be occurring. Understanding or seeing future opportunities is vital, as are being open to change and looking at doing things differently:

“So negotiation is very important because it comes with a cost. I think financial – some level of financial knowledge as well is important to manage the finances.” (P4, 2:41)

Quite a few of the leaders stated that a leader that acts and makes decisions quickly, that is curious, and that accepts that he/she does not have all the answers but ensures the right people with the right skills are appointed has a high chance of successfully leading digitalisation.

Flexible and Adaptable Leadership

Being a flexible and adaptable leader was also a skill mentioned by a fair amount of respondents. One also has to be positive and motivated and support a decision, even if it does not align to one's own views as mentioned by one head of IT:

“...you just need to be flexible, adaptable, you need to be a change agent yourself, you need to be cognisant of what that change is doing to your clients and to your staff. You've got to make sure that the change is managed properly. And you've got to be ...positive and motivated.” (P6, 4:25)

Admitting Mistakes and Learning from Failure

Adaptive leadership skills entail adjusting how you manage people, employing new technologies, and how you adapt to business, as well as being prepared to fail and

make mistakes, but with the ability to learn from them. This concept of failure was once again mentioned by a few leaders, and was emphasised as being quite important. The respondents believed one also needs to be able to make decisions quickly, as change is constant. An adaptive leader needs to be bold and brave and admit mistakes. As one CDO mentions

“...from a digital transformation perspective if you don't have the guts to admit, listen, we made a mistake, but let's do this, let's adapt and let's move forward in this direction, you're going to cost your company a lot of money in the long term.” (P9, 6:32)

Open Minded, Learner Mind-set, Constant Research, Honesty, Authenticity, Resilience

Most of the leaders believed adaptive leaders do not work in silos; they are leaders that are regarded as being open minded, willing to partner with new people to grow, and having a learner mind-set. The way adaptive leaders think and their mind-set was mentioned a lot by the leaders, and leaders cannot work and think as they did in the past.

Leaders in this digital space needs to keep learning and be in touch with what is happening. Hence leaders must be willing to research and attend seminars are important, and as one CIO mentioned: *“Don't be afraid to go out of SA. If it means you must go elsewhere to go and look for stuff then do so. Other people have done it so learn from them.” (P15, 15:17)*

Adaptive leaders need to have an entrepreneurial mind-set, creative storytelling skills, and the ability to manage conflict, and be forward thinking. Honesty, openness, resilience, being authoritative, and assertiveness are important assets. Authenticity was stressed by one leader: *“be authentic because if you're going to be an adaptive leader you still need to remain true to yourself.” (P16, 17:14)*

Adaptive leadership was not only considered relevant for digital transformations by almost all of the respondents, it was considered critical. The key skills required for successful digital transformation through adaptive leadership are listed in the table below according to their importance and the number of times they were mentioned. The main skills identified were a high tolerance and willingness to fail,

understanding and accepting technology, having a learner mind-set, being agile, and being open minded/open to new ways:

Overall the main adaptive leadership skills are listed in Table 6 below:

Table 6: Adaptive Leadership Skills

Rank	Adaptive Leadership skill	Frequency
1	Mind-set Change(Growth,Learner ,Open Mind-set)	12
2	Tolerance to failure	4
2	Being Agile and flexible	4
2	Accepts and understands technology/IT skills	4
5	Visionary/communicate your vision/End goal in mind	3
6	Understands the environment	2
6	Makes a decision quickly	2
6	Bold and brave	2
6	Resilience	2
6	Story telling	2
6	Authentic	2

5.7 Results presented for Research Question 4

Research Question 4 (RQ4): What is leadership’s understanding of digital leadership, and what digital leadership skills are needed for successful digital transformation by South African leaders?

The objective of this research question is to address several areas of digital leadership and the skills needed. The research question aims at gaining an understanding what digital leadership is and attempts to gauge if this digital leader is seen differently from traditional leaders, which is addressed by interview question 7. The research question also aims at understanding the various respondents understanding of the four 4 skills of the Skills Strataplex, namely cognitive skills, business skills, influencing skills and strategic skills, which relates to interview

question 8. Gaining an understanding of the digital leadership skills that South African leaders should have, along with which skills are important and what were the key skills used in their organisation for carrying out successful digital transformation is also addressed through interview questions 9,10 and 11 respectively.

5.7.1 Respondents' Understanding of Digital Leadership

Interview question 7 related to determining the basis of the interview and gaining leadership's understanding of digital leadership and whether it differed from traditional leadership.

Most leader's perspective was that digital leadership was seen as being leaders who need to adjust to the technologies they are leading and adapt to the digital times they are in. However, a few respondents believed that digital leadership is still the same as normal/traditional leadership and should not be seen differently. As the CIO of digital legal company mentioned: "...*every company is an IT company now, so I don't think you can separate leadership from digital leadership...*" (P6, 4:5). The head of IT of a mining company mentioned that: "*I don't believe they should be called a digital leader because all of us should be embracing digital as leaders.*" (P2, 1:33)

A few respondents mentioned that digital leadership should not be confined to IT leadership but that it is important for leaders in other areas like HR, Marketing also to be part of this technology transformation.

The general understanding of Digital Leadership has been leaders who are leading from the front on digital projects, as it is not always easy to lead these projects, as the digital officer of a retail chain mentions:

"So it really is an uphill battle but you have to have the energy and passion to keep driving it otherwise you will always fail." (P7, 18:2)

Digital leadership, according to some of the leaders, includes no longer working in silos and collaborating a lot more. As confirmed by a CIO of an investment house: "*being able to anticipate the future, and understand that life doesn't work in verticals anymore*" (P8, 5:2). Rather, one needs to put the client or customer first and change one's business model to deal with the disruptions of the times.

Another key theme that was noted, that most respondents mentioned, is that digital leadership is about the way the leaders think. Leaders need to adopt the correct technologies and understand what digital transformation means for their companies to be able to run with it, and having a vision and the right attitude is the starting point. As the CDO of a vehicle retail chain mentions:

“it’s a concept of the way you think about things and the way you see things going forward, and how you think about the inclusion of disruptive or - not disruptive, but technology into your business.” (P9, 6:6)

A mind-set shift is key to digital leadership as mentioned by the respondents and that leaders have to adjust to the digital way of doing things. Leaders therefore need to embrace digital to become digital leaders, including digital change and transformation. However, an interesting point made by one of the leaders was that digital leadership is not only about the leadership but also about whether the organisation is ready for it, as stated by the MD of an investment company: *“...is about an organisation capability rather than an individual small group capability.” (P3, 8:36)*

Some respondents viewed digital leadership as the catalyst for implementing digital transformation in an organisation. Servant leadership, rather than authoritative leadership, is what digital leadership is believed to be as according to a director of digital at an alcohol beverage company:

“we are talking about autonomous teams, decentralised decision making, and it’s not the type of leadership that we are not used to in big corporates at all.” (P17, 17:2)

Finally, for the CIO of a beverage company, digital Leadership was seen as being contextual as: *“it is what is relevant for your organisation at that time” (P15, 15:5)*

Therefore digital leadership was seen by most respondents as a leadership type that has to embrace digital, change, and technology, and which needs to change based on context. Most respondents however did believe digital leaders are different from traditional leadership. However a few leaders did see digital leadership as being the same as any other leadership as in this day and age, all leaders need to be digital.

Table 7 below summarises the key digital leadership traits or characteristics mentioned by the respondents in no particular order:

Table 7: Interpretation of Digital Leadership Characteristics

Digital Leadership Characteristics
Collaborating across silos
Think Differently (Mind-set Shift/Mind-set Change)
Understanding digital and technology
Having a vision

5.7.2 Key Skill Types – Cognitive, Behavioural, Strategic, and Influencing.

Interview Question 8 relates to this part of research question 4(RQ4).The reason for asking the users this question was to gain their understanding of the various skills as per the Skills Strataplex, and getting leaders thinking indirectly if these skills were relevant for digital transformation and what other skills they could think of apart from these. The question was very open ended and the outcome was that most of the leaders unconsciously related it to digital transformation and ranked the various skills in terms of importance on their own accord.

Some respondents saw certain skills being more important than others, as stipulated by the head of HR and digital,

“So for the digital economy I think the most important one would be the influencing, getting stuff done through others. And then I’d say strategic and cognitive.” (P11, 13:20)

Cognitive Skills

Cognitive skills were regarded by many respondents as being quite important. Most leaders defined cognitive as relating to how one learns, stores or analyses information, how our brain processes information, and makes sense of it and some even stated its about one’s abilities. A CDO of a beverage organization states that cognitive skills:

“it’s really about how we’re able to leverage our thinking ability as human beings. (P17, 17:18)

A few respondents even regarded cognitive as being intuitive, by stating that *“intuition is what you’ve been learning over time that has actually harnessed your way of thinking in such a way that you actually make the right decisions.” (P8, 5:24)*

One respondent had developed a model of his years of experience in the working world of key cognitive skills. These are listed as critical thinking, discernment, information literacy, invention and creativity, problem solving, researching and systems thinking as is depicted by the figure below:

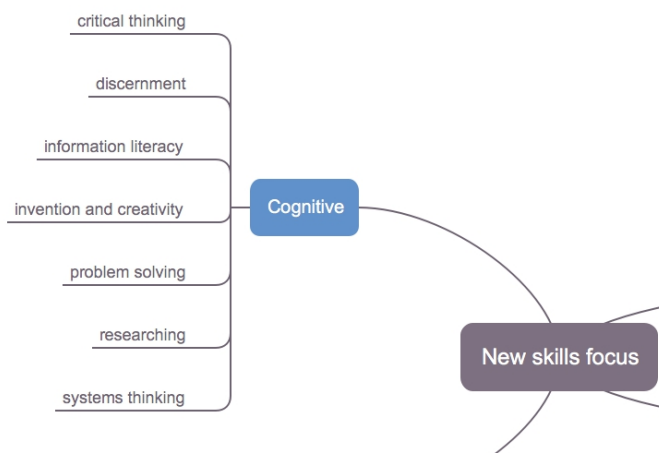


Figure 4: Cognitive Skills Model

Source: Respondent: P3

As per his experience he believes from what he has seen in practise based on the model he has put together,

“in terms of cognitive, critical thinking, discernment, that’s a really important one that I am seeing more and more important, information literacy, problem solving…… systems thinking is there researching……” (P3, 8:19)

However of all the skills in the skills model, the MD of and Investment house has confirmed that *“cognitive is most probably the one that it would stand out more, and within that more particularly systems thinking.” (P3, 8:28)*

Table 8: Cognitive Skills Comparison per Model and from Respondents

Cognitive Skills per model	Cognitive Skills from Respondents in study
----------------------------	--

Critical Thinking	Read the environment or surroundings
Discernment	Intuition
Information literacy	Intellectual ability
Invention and Creativity	Make decisions
Problem Solving	Ability to learn and analyse
Researching	Leverage Thinking ability
Systems Thinking	Thinking

Business Skills:

Business skills have been defined by most respondents as understanding the business, having financial acumen, understanding the changing and evolving environment of business, looking at the financial side of things, being financially astute, knowing how operations and businesses function, and understanding financial statements. One Head of IT of mining further added that:

“Business used to be brick walls, brick and mortar, and now business is changing to things that you can’t see.” (P2, 1:29)

Another CIO has confirmed that business skills relate to the monetary aspect of things:

“The business aspect of things is key because we tend to translate everything into rands and cents for it to make sense across the board...” (P1, 3:21)

Understanding the bottom-line impact is a business skill. Another respondent believed that business skills are key for bringing about changes. A few respondents have defined it as understanding core business drivers for their product, service and market to enable profitable business and keeping their customers and employee’s happy.

Another respondent mentioned that business and technology cannot work independently: *“Business and technology need to become ubiquitous across the organisation.” (P13, 14:23)*

While business skills are considered important, only a few respondents believed them to be key. Table 8 below lists the key business skills listed by the respondents with no rank attached to them.

Table 9: Business Skills per Respondent’s

Business Skills as per Respondents
Understand Economy
Understand the Market/Market Opportunity
Financial Acumen
Understand the Financials of an Organisation
Monetary Value Understanding
Commercial Astuteness
Bottom-line vision
Understand Business Operations
Business Acumen
Understand Business Drivers for Market, Product & Service

Influencing Skills

Influencing skills were seen by most leaders as the key skillset and the most important skill, overshadowing the other four skill types of cognitive, strategic, and business as stipulated by the following head of HR:

“So for the digital economy I think the most important one would be the influencing, getting stuff done through others. And then I’d say strategic and cognitive.” (P11, 13:20)

Influencing skills was regarded as communicating one’s vision and influencing others to understand your perspective and follow your directive. The respondents believe one needs to influence and convince people who do not have the same strategic view.

One of the MD's(who from an investment house), who developed a skills model based on past experience at his various organisations(as per cognitive skills model developed), believed that influencing forms part of the social skillset laid out in his model and that influencing and thought leadership go hand in hand. Refer to Appendix 5 to view his social skills model and its skill components. This is because he believes

“...one doesn't want to be overtly assertive in trying to guide digital transformation. This is about leading and being able to get a momentum and a rhythm going at an organisational level, and that absolutely requires influencing.” (P3, 8:20)

One of the COO's of a financial and health investment house believed that influencing is not that much a priority if: *“Influencing is not really a prerequisite if the entire organisation is on board with that culture.” (P12, 12:9)*

Another important point made by a Digital officer of a retail chain was that a leader cannot influence if they are not trusted or liked as a leader. In contradiction to the previous respondent's statement, one CDO is of the opinion that influencing skills are the most important, especially in an organisation which has no burning platform:

“Personally my influencing skills is like one of the most important things that I am doing on a regular basis, because I'm in an organisation which doesn't have a burning platform,” (P13, 14:21)

Influencing was regarded by many of the respondents as being the most-used skill. One CDO also regarded story telling as an important skill in influencing.

Overall Influencing has been emphasized to be quite the prominent skill to have as mentioned by a Digital Officer:

“think influencing definitely is the biggest thing, is being able to build relationships with key individuals and be able to try and understand their day to day challenges.” (P7, 18:30)

Thus, influencing skills are interrelated with the interpersonal skills of the Skills Strataplex. Table 10 below summarises the key influencing skills mentioned by the respondents.

Table 10: Influencing Skills as per Respondent's

Influencing Skills as per Respondents
Communicating your vision
Communicating your information
Influencing customers, suppliers, and people
Getting people to understand your perspective
Getting people to follow your directive
Selling the vision or aspect at hand
Getting people to rally behind a common cause/Lobbying people

Strategic Skills

The respondents believed strategic skills has been seen to relate to having foresight, a leader who plans ahead, as stipulated by the head of IT of mining:

“Strategic, I think it’s basically foresight, being not only thinking of today but sustainably thinking of tomorrow.”(P2, 1:28)

Other respondents believed being strategic means being aware of one’s entire environment before one makes decisions.

One CIO of a manufacturing company believes that the South African context impacts strategic growth:

“...the strategic skills is the most fundamental one because I think the rest of the world is moving into the digital space and in South Africa we are very reticent to adopt it.” (P1, 3:25)

Therefore being strategic, or being a visionary leader is important. Defining a vision and ensuring everyone understands it for the future has been a key mention too. The respondents also regarded strategic in the past to related to creating 5-10 year goals, however many of the respondents stated that strategic from a digital

perspective is no longer about planning 5-10 years ahead but rather short term roles due to the constant changes that occur as confirmed by the CDO of a retail organisation:

“In a digital world things change too quickly. It’s short, medium goals, and it’s digital, where do we want to go and where do we want to be in six months, and where do we want to be in 12 months” (P9, 6:37)

A unique perspective from the Head of IT of another mining company is that it’s about looking at your strategic goals but also ensuring your current operations keep running while planning for the future. One of the CDO’s of an investment house, believed strategic skills also involve investing in those capabilities to take one to the next ‘S-curve’, which might still be emerging, but it’s all about that foresight.:

“...so strategic skills I would say is how do we take a long term perspective on where this is going and how do we invest now in capabilities that will take us onto the next S curve where that may still be emerging in some cases” (P13, 14:22)

The digital officer of a retail chain mentioned that one needs strategy to know where one is going and what can be achieved and what cannot be achieved, however the director of digital of an alcohol beverage company counter argues this stating that strategic thinking is not about direction, but the ability to shape “

“...but it’s the ability to either shape an organisation, an individual or group of – yourself, it’s not just about corporates.” (P17, 17:19)

Overall, most leaders saw strategic thinking as having a vision and a direction, planning for the unforeseen, and having a long term perspective, but bearing in mind that things change often and rapidly in the digital age.

See Table 11 below a list of the Strategic Skills listed by the respondents.

Table 11: Strategic Skills as per Respondent's

Strategic Skills as per Respondents
Foresight
Thinking of tomorrow

Looking at one's environment to plan ahead
Contemplating the future with all its uncertainties
Being a visionary
Having a strategy
Anticipating the future by understanding patterns
Thinking in terms of the future
Having a compelling vision
Shaping an organisation, person, oneself

Overall, there were many leaders who did not ranking these key skills , as they believed that all four of these skills are required together, and that these skills cannot function independent of each other without requiring a component of the other. There was also mention by a few respondents of additional skills that they believed is required over and above these four skills by leaders:

Entrepreneurial Mind-set

Entrepreneurial mind-set was mentioned by a few respondents that as being required over and above the four key skills. The respondents believed that having an entrepreneurial mind-set and skills entails bringing about a creative and different perspective. One cannot think and run your organisation as was done in the past. Entrepreneurial thinking and skill is required to change the perspective of how leaders should deal and create new opportunity. As one CDO of a retail outlet confirms on this:

“I think it’s very important to be able to almost be entrepreneurial in this space because corporate’s are extraordinarily dull places and they’re dull for a reason because process – they’ve learnt how process and consistency to a process generates cash. And digital transformation challenges everything in that space.” (P7,18:36)

Metacognition Skills

This skills came about as an additional skills as mentioned by the MD of the technology side of one of the investment companies. The leader believed that leaders need to self-reflect on their abilities and actions and self-assess to determine where further development is needed at all times. Only by carrying out these metacognitive skills do leaders know what they require, how to grow and understand why they need to develop accordingly, however this has to come from the leader.

Challenger Mind-set

A few leaders mentioned that leaders needed to change the way they think and have a different mind-set all together. This entails having a learning mind-set, to constantly learn, and grow to compete by being more innovative and competitive. Thinking differently and changing one's mind-set is what all leaders need to engage in especially in this digital era. This is confirmed by the COO of a health and financial investment house that:

“the biggest thing is also I guess this challenger mentality. The principal strategy that we use to achieve success is disruption and that requires innovating at every level better than what competitors are doing. So it means that at a product level, at a service interface level, at the experience level etc. So you basically have to innovate across every single plane, not just be good at any one of them to be able to maintain that disruptive competitive strategy.”

(P12, 12:8)

Social Skills

The other additional skill mentioned by a few leaders is that of social skills. These skills related to having people skills in terms of interacting with people, communicating, dealing with the emotional intelligence aspects, but overall the interpersonal skills one needs deal with employees, vendors, and customers. A few leaders mentioned that having these social or interpersonal skills were key to when carrying out the influencing skill.

Table 12 below lists the skills ranked by respondents in terms of importance (which they did of their own accord) as well as the additional skills that was mentioned is required by some of the respondents.

Table 12: All Key Strataplex Skills

Ranking	All Key Strataplex Skills	Frequency
1	Influencing	11
2	Strategic	8
2	Business	8
4	Cognitive	7
	Need all 4 skills	7
	***Entrepreneurial skills/mind-set	1
	Social Skills	1
	***Meta-cognition	1
	***Challenger mind set	1

***Additional unique skills mentioned

5.7.3 Digital Leadership Skills for South African Leaders

The objective here was based on the research question 4 and interview question 8, related to understanding the digital leadership skills that South African leaders require to ensure successful digital transformation in their organisations. These skills are based on those that the respondents, who have implemented digital transformation successfully, believe South African leaders need. A large range of skills are mentioned however the main skills are:

Problem Solving, Communicating, and Listening to People

A few respondents mentioned that a leader needs to be able to problem solve, be able to communicate and not just speak but be able to execute their solution too. A leader needs to be situationally aware, embrace the changes coming their way and ensuring they, understand the environment they working in to make better

decisions, and understanding their people is important. Listening to employee's especially the younger generation is vital to help gain new insights. One head of IT for a mining company mentions that , *"...you cannot influence people without understanding them"* (P2, 1:36)

Another Head of IT of a freight and logistics company mentioned that, every leader should have project management, negotiation, and facilitation skills as standard leadership skills as these are key. Respondents also mentioned that digital leaders need to be confident in all they do and be authoritative if required at times to support their transformation. However a significant point made by one leader is that you need emotional intelligence and one needs to, *"keeping your cool when things get quite heated"* (P4, 2:61), as people look to leaders for direction and are looking to see how leaders react.

The Key Skills – Cognitive, Strategic, Business, and Influencing Skills

Many of the leaders mentioned that having the four key skills is imperative as well for digital leaders. A CIO of a manufacturing company mentioned that strategic, business, cognitive, and influencing skills are all crucial for South African leaders, as strategically

"you need to understand that the future is different today", cognitively one cannot 'run the race' without this skill, and from a business perspective you need to translate everything into rands and cents, or business context and benefits. Influencing is regarded as important as "a lot of people will not have the same strategic view as you and therefore you need to convince them and influence them that this is a good idea." (P1, 3:21)

Expertise or Understanding Technology

Most respondents mentioned that leaders need some sort of expertise or at least a good understanding of technology, and need to understand the context of the situation before setting strategies or becoming visionary leaders. The respondents believed leaders need to understand technology and have their actions match their behaviours too. The CIO of a digital legal firm makes a valuable point about traditional leadership versus digital leadership styles by stating that in traditional leadership it was fine not to know the details as others would deal with it, but in the

technological world we live in today we have to all have some technical understanding.

Leaders need to be digitally savvy and understand technology, but also having the right people working for them aids in understanding technology and talking other aspects of digital transformation. In short, they must be able to hire the right talent with the right skills and be an adaptive leader that can adapt to the context of the situation is important. The COO of a leading health and financial investment house makes a relevant statement:

“So if you know your limitations are you don’t have the right technical background it’s hiring people that will advise you appropriately” (P12, 12:10)

Skills, Mind-set and Passion

Many of the respondents mentioned that digital leaders need the right skills and a change in mind-set for successful digital transformation. Some leaders believed that South African leaders need business and IT skills combined. They need to be passionate about what they are doing, have influencing and listening skills, and be able to execute or implement their solutions not just talk. . One CDO emphasises that *“if you really want to do a successful digital transformation you need to implement.” (P9, 6:46)*

Another MD of a software house mentioned that digital leaders do not need hard skills but rather a shift in thinking (a mind-set shift). Leaders need to be bold and brave, have a learner mind-set and as the same MD mentions *“having this mind-set of exponential growth” (P10, 7:41)*

Collaborating and partnering with others is an important skill for digital leaders to learn and grow . Some leaders mentioned partnerships, stating that:

“South Africa is short on that, we all just focus on our own business and our own bottom lines but I think if we partner and bring in more small and medium enterprises I think the digital age technology allows for that.” (P16, 16:15) .Leaders need to learn from failure is mentioned by my most respondents.

One respondent, the MD of the technology side of an investment house developed a model that is used in his organisation and in others, and believes that if all leaders (not just digital leaders) develop skills in effectiveness, metacognition, social, and cognitive skills, a different way of thinking will come about, as he has witnessed over the years. Most of the skills proposed in this model relate to the skills mentioned by the respondents. See figures per skill in Appendix 5.

However a few leaders mention that apart from having the skills and the mind-set, it is important for digital leaders to have a passion for what they are doing. Passion for their job makes the job more enjoyable and leaders do not see it as a job but rather something they enjoy doing.

Being Open Minded and Other Thinking Skills

Strategy management and being open minded are important traits for leaders, as stated by a Head of HR :

“...being open minded and to recognise that the step changes lead to a bigger shift which then links to,...how that contributes to the future, ...” (P11, 13:23)

A few respondents mentioned that leaders who understand design thinking and its principles and who react quickly to changes happening, would have a key skill.

Understanding Big Data and your Organisation

Quite a few respondents also mentioned that digital leaders need to have the ability to see the bigger picture and how things fit together. The head of digital of one organisation mentions that, irrespective of if one is an IT leader or a digital leader, one needs to “*understand how does those things fit together*” (P5, 9:21)

One leader makes a very interesting point, as he believes that a digital leader needs to understand their business and data in their organisation. In understanding technology and how it fits together one needs to understand their business and how the gaps can be mitigated by technology.

Quite a few of the respondents believed understanding the data in one’s organisation is vital. It is important to understand how the data in one’s organisation “fits together,

flows and collate so it is displayed appropriately to make better decisions”, as per the Head of IT **(P5, 9:23)**

Vulnerable, Honest, and Humble leaders

A unique mention by a few respondents has been that leaders who say they do not know everything, are vulnerable and honest, about what they don’t know is what is needed to have a contextual understanding, are agile, who learn from failure, and who are curious to learn are needed. Leaders need to understand technology and have their actions match their behaviours

An interesting point made by a CIO of a manufacturing organisation regarding the digital leadership skills that South African leaders need and why, due to our context, certain processes may not work in South Africa is shared as

“Firstly there’s lack of exposure. Secondly there’s a huge human impact in moving into the digital space because it fundamentally means job losses of low-skilled people. It also means a requirement for higher skilled people, which we don’t have. So there are a lot of practicalities in South Africa which means that there’s lack of adoption.”(P1, 3:25)

In conclusion, the leaders mentioned a wide range of skills that they believe South African leaders need for successful digital transformation Table 13 lists the top ten skills mentioned by most respondents:

Table 13: Digital Leadership Skills for South African Leaders

Rank	Digital Leadership Skills for South African Leaders	Frequency
1	Understand technology	9
2	Influencing skills	5
3	Seeing the big picture	4
3	Mind-set shift/learner mind-set/growth mind-set	4

4	Adaptable	3
5	Communicate	3
6	Business Skills	3
7	Cognitive Skills	3
8	Strategic Skills	3
9	Passion	3
10	People skills	2
Unique mention	***Be bold and brave	1

5.7.4 Which Digital Leadership Skills are Most Important

This category relates to interview question 9 and is based on the feedback from interview question 8, and aimed to determine which of the digital leadership skills mentioned that South African leaders require is most important. Most leaders felt that they could not keep to one skill set, but narrowed down their initial range to a few skills. Most of the skills mentioned in interview question 8 were listed again; however, there were a few new ones that some leaders realised were most important that was not mentioned in the previous list. The most important skills were identified as:

Interpersonal Skills

Quite a few of the respondents mentioned that having good interpersonal skills are vital as you need to understand how to work with people, have empathy with them. In addition problem solving skills, communication skills and influencing skills was seen to be quite important for digital leaders to carry out successful digital transformation. Having conceptual thinking skills and seeing the bigger picture as well as influencing and being able to network, as digital leaders need to collaborate.

Another respondent believed that being calm, communicating well, and being an optimistic leader is vital as leaders are constantly being watched and scrutinised.

The 4 Key Skills

A fair amount of the respondents believed that the 4 key skills are quite important in terms of cognitive being non-negotiable, business, influencing, strategic are required to translate into business case, and influence a following in your organisation for the future direction respectively. Hence all four skills are listed as being important.

Mind-set change, Future Thinking Skills, Understanding People, Technology, Customers and Environment

Quite a few leaders need to change their mind-sets, understand patterns, have future thinking skills, understand their environments, technology, people, and customers, and be transformational leaders, or they risk being left behind

Be Assertive, Bold, and Brave

A new addition of skills that came up was that a few leaders believed as a leader you need to be assertive and say no when things are not right and will not work. This once again related to leaders stating that in South Africa some senior leaders at organisations are still resistant to change or anything new. Hence as a digital leader you have to be assertive, bold and brave to carry out what is deemed appropriate for the advancement of the organisation. Also, as a leader one cannot do what is requested by senior management, so being bold and assertive to stand up is vital. One CDO of a vehicle retail chain based on his experience states:

“So a big skill in digital transformation is to be able to say no as well, and it’s difficult” (P9, 6:52)

Therefore a few respondents believed that leaders who are bold and brave, can collaborate across silos, understand their environments, have a learner mind-set, and can drive the right culture stand a high chance of success.

Culture

The concept of culture was emphasised by a quite a few respondents even though it is not a skill. As the MD of one company states: *“I would summarise it as culture because they are so interwoven.”* (P10, 7:43). Respondents believed that culture is an important driver of leaders being able to carry out successful digital transformation.

Skills Depend on Situations

An interesting perspective from one of the MD’s of an investment house is that he did not believe that one could rank or state which skills are most important. He believed this is related to the situation:

“I wouldn’t be able to say anything is most important. I think I would feel more comfortable saying that there it is situationally determined. There are going to be times where there’s an emphasis or greater dependent on a certain skill grouping.” (P3, 8:27)

The importance of understanding data and being able to see the bigger picture was stressed:

“I think the most important one is data, people need to understand data, people need to understand how data gets generated.” (P5, 9:24)

Another MD believed that having a vision as a leader is more important than digital literacy, as digital literacy can be obtained from other parties:

So for me vision is more important than literacy, but obviously to have some level of literacy in it, and you need to advocate it and you need to be adaptable.” (P14, 11:19)

Open Mindedness, Resilience, and Making Mistakes or Failing

Being open minded and ready to learn, empowering your team, and adapting to change are identified as beneficial skills by one CDO:

“I think it’s an openness and an ability to learn and to adapt individually, personally. I think it’s about giving up on control and micro-managing, it’s about leading a transformation, it’s about how do you empower an organisation and lead in that.” (P13, 14:25)

Other important skills mentioned by a few leaders are resilience, willingness to make mistakes and fail, and learning from this. As the Digital officer of a retail chain confirms:

“And I think resilience, just getting it done. Digital is not as glamorous as the articles make it out to be, it’s actually about doing things and making mistakes and getting back up, and adopting a culture that does that.” (P16, 16:16)

The concept of determination is also highlighted as in addition to being resilient to the changes, one has to be determined to see your solutions through. This was mentioned by a limited respondents but was emphasized as being important to have to ensure success.

In conclusion, the skills mentioned that are most important by the respondents, were not always in line with the skills mentioned that South African leaders need. Some respondents felt that all of the skills mentioned in the prior section are important, and were not comfortable ranking them. The table below lists the key skills mentioned by most of the respondents. Additional skills that emerged included being assertive/standing up for one’s beliefs, being bold and brave, determination and resilience. Understanding technology, mind-set shifts, and learning from failure are skills that are common from the previous list of skills for digital leaders as well. Table 14 below illustrates the most important skills as listed by the respondents

Table 14: Most important Skills Listed for Successful Digital Transformation

Rank	Most Important Skills	Frequency
1	Strategic skills	8
2	Influencing skills	7
2	Understanding technology and infrastructure	4
2	Mind-set shift/learner mind-set/open mindedness	4
6	***Resilience/determination	3
7	Learning from failure	3
8	***Being assertive/standing up for beliefs	3

9	Adaptability	3
10	Cognitive skills	3
11	Business skills	3
Unique and seen in other skills cat. too	***Being bold and brave	2

*** Unique skills and those indicated from a South African context

5.7.5 Which Digital Leadership Skills used in Respondents' Organisations were Key for Successful Digital Transformation

The objective of this question was to understand the skills that the respondents used in their organisations when implementing digital transformation. This category related to interview question 10. The skillsets mentioned are similar to those in the previous questions, but the importance in this context is different as it relates to what the respondents actually used or considered important in their transformation.

The respondents mentioned that to carry out successful digital transformation in their organisation they had to have a vision, the use of communication skills and influencing skills was needed when working with key stake holders and other parties, and they needed problem solving skills to resolve issues that came up in the implementation. Many respondents stressed the importance of having the right people and that people skills was important along with project management skills to ensure the success of their project.

Some leaders believed business skills was most important where as others felt that the strategic, then influencing and cognitive skills were not used in their organisation. As mentioned by the CIO of a manufacturing company:

“So I would say the business skill was used mostly but then it misses that strategic and that influencing dimension. So for example its customers aren’t sufficiently influenced.” (P1, 3:33)

Quite a few respondents indicated the importance of resilience, learning to get up from failure, being bold, and making the right decisions:

“So the key factor for success for me is going to be resilience because ...The resilience piece is that when that happens you need to still conduct yourself at all times, for me in a professional manner and you need to work through that hard time and you need to effectively dig deep and basically pull yourself up and out again.” (P6, 4:37)

A unique mention by some respondents was a leader who has passion, is an agile leader to the changes that come about, and who is assertive as you have to stand up for what you believe and sometimes make it happen will have a positive effect on digitalisation attempts.

Another mention was a leader who drives the right culture, clarity, and communication, enabled success for this respondent’s organisation:

“Make sure there’s simplicity and clarity in terms of what we’re trying to drive that everyone can get behind. And I think when I managed to get that piece right it just, we saw the think again, because we had done a number of the other pieces” (P10, 7:57)

Based on past experience and seeing leaders change over the years, one MD of an investment house believed that cognitive skills and metacognitive skills (as per Appendix 5, figures of cognitive and metacognitive skills) being enhanced and developed, particularly in the systems thinking space, was useful in his organisation.

Understanding data, understanding technology, infrastructure, and having business-analysis skills was considered key by a fair amount of respondents in terms of digital transformation in their organisation, as well as digital literacy and having a vision.

This following COO of a health and financial investment house felt that general business skills; strategic and influencing skills; vision, humility, curiosity, willingness to learn, and transparency were most important for driving digital transformation in their respective organisations:

“It means being wired into what your customers are thinking, wired into what your capabilities are, what you can afford and implement it in the most risk free way possible.”(P12, 12:12)

Understanding big data, technology, and the environment, seeing the bigger picture, and having the right tools and people were considered critical by the CIO of a beverage company:

“So you can’t be a brilliant digital leader, if you don’t have the right talent, you don’t have the right processes, you don’t have the right data.” (P15, 15:51)

Being determined and assertive were also highlighted as positive elements, as were influencing and dealing with disruption, being tech savvy, taking one’s people along, and being open to learning, having vision, humility, curiosity, willingness to learn, and transparency were most important for driving digital transformation in some of the respondents organisations as well.

In conclusion, the skills used in the respondents’ organisations for digital transformation are very similar to the skills that South African leaders need. However, many of the skills listed as the top skills that South African leaders need, or was regarded as being most important did not feature in the top listings here. Another unique noting that came up in the other 2 skill categories that is listed here as well is, being Resilient, Being bold, Being assertive/stand up for yourself, and being determined. Learning from failure/ tolerance from failure came up again as well. Refer to Table 15 below for the detail.

Table 15: Digital Leadership Skills Used in Respondents' Organisation

Skills used in Respondents’ Organisations	Frequency
Business skills	4
Strategic skills	3
Influencing skills	3
Understanding technology/infrastructure	2
Having a vision	2

Communication skills	2
***Being assertive/standing up for one's beliefs	2
Understanding big data	2
Having the right talent/people	2
Project-management skills	1
People skills	1
***Resilience	1
Learning from failure	1
***Being bold	1
Making decisions	1
Passion	1
Agility	1
***Determination	1
Business analysis skills	1
Systems thinking/metacognitive/cognitive	1
Agility/passion/making decisions	1

*** Skills mentioned based on South African context

5.8 Presentation of Research Question Research Question 5

Research Question 5 (RQ5): How is leadership acquiring digital leadership skills and keeping these skills up to date?

The objective of this research question is to understand how digital leaders acquire their digital skills and how do they keep their skills up to date. Interview question 12 was asked to the respondents to understand and answer this research question.

5.8.2 How are digital leadership skills being acquired?

The objective here was to understand how digital leaders go about acquiring these digital skills that allows them to implement successful digital transformation. The following findings emerged from the research:

Learning Culture

Some respondents mentioned that in their organisations they have a whole leadership culture drive to upskill their leaders and management staff, based on their transformation journey and what their business' ambition is. However, most of the respondents mentioned that they believe that the transformation starts with oneself first in realising you want to grow and learn and then only can you start the process as confirmed by the head of IT of a mining company:

“to realising firstly themselves, going on a journey with yourself, understanding how do you manage self.” (P2, 1:62)

Acquire skills

Many of the respondents mentioned that skills are being acquired by individuals taking an interest in themselves and developing themselves through personal research, understanding where they, as leaders, need to be developed, and then going back to school. Another option mentioned by a few of the respondents is they have in their organisations innovation centres and learning portals for leaders to sign in and see what is new in the market or industry. Some respondents have also training conducted by their organisations' offices across the world.

One of the CIO's of a manufacturing company mentioned that executives and leaders at her organisation attend executive business school programmes internationally. IT leaders have taken on their own programmes based on their areas of expertise:

“At executive level there have been quite a few people who have gone to Harvard Business School programs. I can see the impact that it has had on those individuals from the perspective that they have come back far more understanding of simple terms like cloud, or wanting to automate their factories, or things like that.” (P1, 3:26)

Doing Online Courses

Attending or doing courses such as Udemy, Medium, LinkedIn, and YouTube have been mentioned by most leaders as places where they acquire digital leadership skills. One digital officer of a retail chain mentioned town hall meetings with influential leaders:

“there’s been recent town hall gathering where influential leaders were taken and do a digital journey so to speak. And the idea is to sort of let that rub off on my people reports.” (P16, 16:18)

Many respondents have mentioned that abiding by the 1 hour rule, which entails that leaders spend an hour a day reading journals, articles, latest market news on social media sites, and so on. Many leaders mentioned constant research is important. As the CIO of an investment house mentioned:

One obviously is to align yourself with good research partners that are able to see or scan what’s going on and be able to feed that into you and you understand how it impacts your business...” (P8, 5:40)

Doing a skills audit to then update everyone’s skills for digital transformation has also been a way that some organisations have seen what they need. Many leaders highlighted self-development and personal drive as key to growing and learning:

“I was a firm believer that if you really want to do something there’s a lot of work that you can do yourself and not just be dependent on the organisation, although the organisation does have a social responsibility against its employees.” (P9, 6:58)

Mind-set Change

One MD of a large software organisation mentioned acquiring a learner mind-set as a leader, reading specific books, and practising those skills as was done in his company:

“the anchor of everything was growth mind-set. So everyone kind of read the book and created a base of a common language. So they are almost self-correcting in terms of being open minded to new ideas and so forth, and having this growth mind-set.” (P10, 7:31)

Other respondents mentioned partnering with key systems thinking, future thinking individuals in the industry and at specific universities, and running workshops at the organisation for the leaders and the employees so that everyone starts thinking along these lines

Learning from Corporates and Competitors

Many of the respondents mentioned that leaders need to share their knowledge to grow and add value by sharing with other corporates by collaborating with them and as well as collaborating with universities also tapping into the talent coming out of universities to stay updated and informed in the digital transformation age.

Another MD of a technology company mentioned *“surrounding you with like-minded people, that’s the best place for you as a person to grow and for your company to grow”* (P14, 11:21), listening to experts in the field and allowing for a mind-set shift overall. And doing academic interviews for research to learn from academia.

Acquiring Talent

Some respondents mentioned hiring leaders with the necessary skills or appointing people who have digital skills can bring said skills into an organisation, and leaders acquire it by constantly researching and scanning the market to see what is out there and what can be used. Leaders are also recruited from other organisations that have the relevant skillset and used to teach upcoming leaders in the organisation so as to groom them for their future roles as was done at the organisation of the head of HR and another investment house. Many of the respondents mentioned that their executives could also attend international business school courses, or schools could come to them. There is also a rotational system of roles, where leaders are placed in different roles to learn (much like a shadowing process).

Overall the main motivator for a leader to acquire digital leadership skills starts with self-realisation and self-development was what most of the respondents mentioned. Then only can many of these skills be acquired.

5.8.3 How are digital leadership skills being kept up to date?

The approach for this part of the question was to understand how leaders are keeping their skills up to date in this constantly-changing era. Many of the respondents mentioned the same approach as leaders acquiring digital leadership skills. However below are a few additional approaches used:

Online Courses and Informative Collaboration with Corporates and Competitors

The respondents mentioned that many leaders can stay current through completing online courses, informative sessions with industry experts, understanding leading industry standards, and forums that have been created for leaders to collaborate and learn from each other within their organisations and externally:

“as a business we have got forums, for instance, to share, collaborate, talk about, what am I doing, what are you doing, how do we do it differently. Problem solving – there’s all those collaborative platforms to ensure that we do that.” (P2, 1:63)

Leaders are learning from other corporates in their fields and from competitors. Going to conferences and seminars and learning online with videos and online courses:

Leaders trying to be Innovative and Working with Industry and Universities

Some respondents mentioned that leaders have decided to be innovative by getting *“...leadership to support new innovation. So innovation is not just a value that’s on a board, it’s practiced within the organisation.” (P2, 1:50)*

Quite a few respondents in the mining sector, and one from an investment house mentioned another method is for organisations to work closely with universities developing and experimenting on new technologies as they do.

Learning and Partnering

In terms of how leadership skills are being kept up to date, many of the respondents mentioned one of the ways has been online courses, individuals who have a personal drive, taking opportunities when it presents itself, and cross functional

collaboration between functional area's that share monthly the new innovations they are up to.

Many of the leaders mention they attend local and international conferences is also a common thing amongst these leaders to stay abreast:

“Clearly we attend international conferences and local ones in terms of keeping up to date with the information that's available.” (P1, 3:28)

An interesting point by one respondent was that even though their executives and leaders were acquiring digital leadership skills from international universities and business schools, the biggest issue was the South African context for their industry, one cannot apply all the learnings: *“...coming back, even after going to a Harvard Business School – coming back into the South African context and a resource constrained context has an impact on nullifying some of those benefits. So my personal view is it's a bit of a bleak picture actually, because I think people are not – South Africans are not moving with the times in general.” (P1, 3:29)*

Other respondents mentioned that their leaders attended external CIO forums to stay informed and networking with resources or contacts to help learn and understand outside their organisation. One respondent also mentioned having a mentor or an executive coach to mentor and guide you is a way to acquire the right skills.

Leadership programs in Design thinking:

Many respondents said they attended or were sending their leaders to top international and local universities to do courses in digital or particularly in design thinking, was quite popular to a few leaders.

“The only running program that we have for leadership is the design thinking, it's called design thinking school” (P8, 5:41)

However many leaders mentioned that a lot of the keeping skills up to date and acquiring of skills depends on the individual, and taking opportunities when it presents itself. As one leader confirms *“...you can't teach somebody. So if somebody sticks up his hand and he really wants to go on this journey I'm more*

than willing to walk this journey with him, but to try and force it, it's like taking a horse to the water and forcing him to drink." **(P9, 6:61)**

Many leaders are attending Harvard Business School for executive courses, and partnering with local universities. Also leaders are going to Singularity University in Silicon valley. Attending design thinking and agile courses and critical thinking courses seems to be what most leaders are doing.

Therefore as many respondents confirm, keeping one's ear's on the ground and learning from different corporates is key, as well as doing digital immersions and being curious and wanting to learn, but building relationships with one's corporates are important.

Much of the approach is the same of how they are acquiring their digital leadership skills. However many respondents iterate again that it starts with the leader, and their personal drive and development, as one cannot force a leader who is not interested.

5.9 Additional Key Themes that came out of findings

In asking all the interview questions that related to answering the researched questions that emerged from the literature, there were two underline drivers that was mentioned in most of the interview questions that were not necessarily a skill but was a key contributor to successful digital transformation as mentioned by all the respondents most of the times. This was the concept of people and the other was that of culture.

5.9.1 New theme: People

People was an additional prominent theme that came up in all the feedback from this research, that was not related to any interview question. However the people aspect was mentioned a lot in answering the interview questions. This theme was interwoven in the digital leadership theme specifically. The key categories for the people aspect that came up was:

Hiring or acquiring the correct talent and having the right people work for you

Many respondents believed that hiring or appointing the right people to the task aided digital transformation greatly and listening to your people:

Having People Skills and the right people working for you:

Quite a few respondents believed that one needs people management skills for successful digital transformation and in so doing you must be able to take people along on a journey

Therefore many leaders believe, having the right people and listening to people helps successful digital transformation, as by listening to people you make the right decisions. As one CDO confirms, Leaders therefore have to be able to *“listen to the people around you and your peers, and appoint the best people around you.” (P9, 6:34)*

People not working in Silo's

Having people work cross functionally was a key mention by most of the respondents, not just working in silo's

Trusting your people

Many respondents have emphasised having trust in your people is key to get a team that performs well.

Listening to the younger generations

Investing in young generations and listening to the younger generations is important. Quite a few leader believe that *“the young generation or people that are the Y or the millennials that are more adaptable to technology, for them they've not lived in a world without technology.” (P2, 1:32)*

Use your People Effectively

Many respondents confirm that many users feel threatened by digital transformation and feel their jobs are on line. Therefore some leaders have said to use your people to make things more effective than getting rid of them.

5.9.2 New theme: Culture

Another prominent theme that came up based on the feedback from the various respondents and there was no specific question in this regard was that of culture. Many of the respondents mentioned culture at some point being a key element to digital transformation. Culture was key for successful digital transformation, and that leadership needs to set the culture:

As the COO of a health and financial house mentions:

“The skill sets are fairly generic, it’s actually got to do with the culture of allowing for agility...” (P12, 12:17)

Some respondents mentioned that culture will be affected and change when digital transformation occurs, therefore they believed culture is the ultimate success factor and leadership sets the culture,

Respondents mentioned that having a learner mind-set is a culture thing and a few of the respondents believed that culture is what drives digital transformation. A few respondents mentioned that, it is important to recruit talent based on the culture of the organisation:

“When you recruit or at least in terms of your own people they have got to be able to fit that particular culture.” (P15, 15:3)

In summary the culture created by leadership creates the culture in an organisation, is an element that came across quite strongly from the respondents. The culture is set by leaders, as employees watch leaders, and they then behave accordingly. Therefore it can be clearly seen that people/leadership impact culture, and that culture impacts the people that are hired and set it.

5.10 Conclusion

The objective of this chapter was to unpack the feedback received based on the themes that came about from the interview questions posed to answer the various research questions. As can be seen by the feedback received, most of the leaders understood what digital transformation and digital leadership was with many considering digital leadership to be what all leaders should be in this day and age.

The importance of leadership in digital transformation has been confirmed as being critical, and therefore the kind of leader for digital transformation has been leaders who learn from failure, leaders who understand technology, cross collaborate across silos, having leadership buy in and support, those that are open minded, adaptable, flexible and agile leaders.

Adaptive leadership was confirmed to be critical, and relevant as well. The main adaptive leadership skills has been leaders with a different mind-set, high tolerance

to failure and agile and adaptable and understanding technology. This can be seen to be very similar to the type of leader and skills needed for digital transformation.

In terms of digital leadership skills, many skills were mentioned that were relevant from the Skills Strataplex, however some additional skills that have been highlighted that leaders need apart from those in the Skills Strataplex is, entrepreneurial skills are something that was mentioned is something in addition required, social skills, metacognition skills and a challenger mind-set. Respondents also provided a list of the digital leadership's skills they believe South African leaders needed, are important and were used in their organisation. Some unique skills that came out that was common to all three areas was being bold and brave, being assertive/standing up for yourself, being determined, and being resilient. Another key trend was all the areas mentioned being either flexible, adaptable or having to be agile amongst them too. Learning from failure or tolerance to failure and learning to fail came up in all three areas as well.

The themes of culture and people were quite prominent throughout the research, emphasising the importance of culture that must be driven by leaders and that people help digital transformation significantly.

In terms of acquiring and maintaining many of these digital leadership skills many of the respondents believed that it starts with oneself wanting to learn and grow. Thereafter various ways of acquiring skills was mentioned such as online and tertiary institutions offer learning opportunities. Surrounding oneself with like-minded people, and attending conferences aid the process too and attending courses that assist with mind-set changes and a different way of thinking, and collaborating with peers, competitors and fellow colleagues in the industry.

Overall the digital leader needs various skills and there are many means to acquire them and keep them up to date.

CHAPTER 6:DISCUSSION OF RESULTS

6.1 Introduction

Chapter 6 discusses the findings of this study in detail and in light of the literature reviewed and presented in Chapter 2. The insights obtained from Chapter 5 are compared and contrasted with the literature presented in Chapter 2 in order to answer the research questions created in Chapter 3. The literature review confirmed a gap regarding research in the area of digital leadership skills, which needs to be further explored. Therefore, the skills leaders need in this digital age need to be further delved into. The research findings contribute to both theory and practice, so that digital leaders trying to ensure successful digital transformation can understand and acquire the skills needed.

6.2 Discussion of Results for Research Question 1

Research Question 1 (RQ1): What is leaderships understanding of digital transformation?

This research question was based on Question 1 of the interview guide, and its main objective was to understand leadership's perspective of digital transformation. There are many definitions of digital transformation, and so this research question aimed to establish South African leaders' understanding of the research topic at hand. This is due to South African businesses are lagging and, are slow at adopting digitalisation (BusinessTech, 2018), ("PricewaterhouseCoopers," 2018b). According to Vey et al., (2017) and Kohnke (2018), this has been attributed to the rapid change of the business landscape and pressure to innovate.

6.2.1 What is digital transformation?

The definitions and understandings of digital transformation vary between respondents, however there were key and common themes that emerged from the findings regarding the general understanding of digital transformation. Some leaders believed that acceptance of digital transformation is important to first understand it and then benefit from it. A general notion, according to the findings, was that digital transformation is a form of system automation, or data becoming more digital. The automation of processes was the main understanding. According to the literature Hess, Benlian, Matt, & Wiesböck, (2016, p. 124), define digital

transformation as “Digital transformation is concerned with the changes digital technologies can bring about in a company’s business model, which result in changed products or organizational structures or in the automation of processes.” Other respondents as per the findings believed it related to disruptive technologies and that technology was a key aspect of digital transformation. Singh & Hess (2017), Fitzgerald et al. (2013) and Westerman et al. (2014) define digital transformation as the integration of new digital technologies such as social media, mobile access, analytics, or implanted devices into all parts of business or an organisation, fundamentally changing how it operates. It is also understood that value is delivered by restructuring operations, improving customer experience and operations, and/or creating new business prototypes, thereby enabling major business improvements. In both definitions they relate to what the respondents understand of digital transformation, that it is about the use of technology or disruptive technologies, entails the automation of processes or systems, and leads to a change in the way business operates, thus confirming that what the respondents mentioned and what literature mentioned are aligned. However, when explaining their understanding of digital transformation, something that was noted was that not many of the respondents mentioned the specific technologies involved.

Many respondents agreed in the findings that digital transformation was about changing the way you work overall. Other respondents mentioned that it relates to new ways of working due to the exponential growth of technology, and that digital transformation is more about the people who make it happen than the technology and the internal business processes. In the literature, Westerman et al. (2014) confirm this finding based on research they conducted, which discovered that most executives are transforming three key areas of their businesses, namely: customer experience, operational processes, and business models. Schwarzmüller, Brosi, Duman, & Welpé (2018) confirm that digital transformation, with all its rapid new technological advances in disruptive technologies is now impacting the way we work and how leadership is executed in the work place, as more flexibility is now brought in so that new ways of working can occur. Leaders are now exposed to having to analyse big data and make decisions faster and, with the ways of working changing, leaders need new skills and ways of leading. This notion of the ways of working and changes in business processes is therefore in agreement with the theory.

There was, however, a contrary view in the findings that digital transformation is not about the technology, but rather about a mind-set shift or change, adopting new ways of doing things, having a strategy, on how it aligns to digital transformation. In the literature, Hess et al. (2016) and G. C. Kane, Palmer, Phillips, Kiron, et al. (2015b) confirm that having a clear strategy is key to the success of deploying and exploiting digital technologies and ensuring the success of the transformation and the business. This is further confirmed by G. C. Kane, Palmer, Phillips, Kiron, et al. (2015a), who states that, based on research conducted, having a strategic vision, a forward-looking perspective, and a change-orientated mind-set is key. Hence this confirms the notion that one needs to change one's mind-set and how a leader thinks and works overall as well to carry out successful digital transformation.

A key theme that emerged from the findings was that most leaders believed digital transformation to be about the people. Having the right people running digital transformation, the right people to execute and run the organisation, and employing the correct people is vital. As one respondent mentioned in the findings that one could have the best technology, but if the correct people are not there to execute the technology, it will not reach its fullest potential, this was an instrumental point made. G. C. Kane (2018) refers to developing the talent of their people so that they may become the next digital leaders, by providing them with the right skillset and empowering them to think differently. G. C. Kane et al. (2016) state that many companies are investing and building their talents by both developing existing talent and acquiring new talent to aid digital transformation. This scholar further adds that some organisations are allowing the cross collaboration of their teams by restructuring them. The point regarding the importance of the people in digital transformation came across with much conviction, as many respondents believed that people were the key to successful digital transformation, more so than anything else. This point was evident more strongly than the literature indicated, but the literature supported the notion of people being an important part of digital transformation. Thus indicating that having the right people is a key component of digital transformation.

The role of leadership running digital transformation was also indicated by as important in the findings. This is confirmed by the literature stating that the role of leadership was deemed critical for running successful digital transformation, and that there is a need for strong digital leaders (G. C. Kane, 2018). Senior leadership buy-

in was also considered significant in ensuring successful digital transformation (G. C. Kane et al., 2016). This is supported by further literature by Kohnke (2018), who confirms that new digital skills and organisational capabilities, together with leaders understanding the impact of digitalisation and their people working on these initiatives better, is what digital transformation is all about. However, as per the findings, a few respondents had unique perspectives, in that they believed digital transformation is about creating new revenue channels and depends on where one wants to take one's business model. Digital transformation was also seen as a way for organisations to serve customers in the most interactive and responsive way possible, and a way of reducing operating costs or generating more revenue, due to new business models as per the findings from the respondents. In the literature, Fitzgerald et al. (2013b) confirm that organisations that invest in important new technologies and manage them well are more profitable than their industry counterparts who may not be doing so. This confirms that converting to digital transformation is a profitable option, and it reduces costs.

The findings also revealed that a few leaders understood that digital transformation is a continuous process and that one's ways of working has to change. A unique perspective was that digital transformation is not about certain parts of the transformation, but that one should rather look at it holistically. Kohnke (2018, p70) confirms this in that "a digital transformation isn't a single effort but rather a portfolio of initiatives that work together to scale the change." Therefore digital transformation is not a once-off process, but needs to happen continuously to bring about continuous transformation. This confirms that leaders need to not think that digital transformation is a once of process. To keep up with the times, organisations have to look at it holistically not in parts and know change is continuous.

6.2.2 Conclusive findings for Research Question 1

In reviewing the findings from the study and what the literature says, it can be confirmed that most of the leaders' understandings of digital transformation concur with what the literature states; that it relates to technologies and how it changes the company's business processes and business models, thereby impacting customers and products. Most findings related to the understanding that digital transformation results in automation of processes and creating new business models, which leads to new ways of working. The emphasis on the importance of people was strong for

this question, in that people are a key component to digital transformation. This emphasis was quite different to that of the literature, which emphasised strategy, vision, and technology, rather more than people. The findings of this study therefore confirm the importance of people (particularly leadership) and ensuring the people have the correct skills are important in attempts to undertake digital transformation. Therefore, in terms of **Research Question 1 (RQ1): What is Leadership's Understanding of Digital Transformation**, the findings from the research and those from the literature correspond, with additional emphasis on the people aspect being quite prominent in the findings from the study. The respondents have confirmed that they understand the meaning of digital transformation through answering the research question as per what the literature proposes. Therefore, the findings for RQ 1 are conclusive.

6.3 Discussion of Results for Research Question 2

Research Question 2: What are the factors that contribute to successful digital transformation?

This research question is based on Question 2 of the interview guide, and the objective was to identify an example of a successful digital transformation carried out by the respondents in their organisation and based on that example, leaders were probed on which factors contributed to this successful digital transformation, particularly from a South African organisations perspective.

Most of the respondents had carried out digital transformations in their organisations in the form of systems automations, implementing mobile solutions, robotics automation, moving data to the cloud, building social media interactive platforms, and digitalisation of processes. This aligns with the definition of digital transformation technologies given by Singh & Hess (2017), Fitzgerald et al. (2013a), and Westerman et al. (2014) who define digital transformation as the integration of new digital technologies such as social media, mobile access, analytics, or implanted devices integrated into all parts of business or an organisation, fundamentally changing how business operates. Value is delivered by restructuring operations, improving customer experience, and improving operations or creating new business prototypes, thereby enabling major business improvements. This accordance with

the literature reaffirms that the sample selected for the research was appropriate to test the research questions of this study as all the leaders have executed one form or the other of the technologies as per the definitions.

6.3.1 Factors that Contribute to Successful Digital Transformation

Importance of leadership

According to the findings of this study, the importance of leadership in ensuring successful digital transformation was agreed upon by all respondents as being critical. Without leadership support and buy-in, most respondents believed that no digital transformation project would be successful.

In terms of the content from literature, the importance of leadership came up in most of the literature, indicating that leadership are the key drivers of digital transformation, leadership buy-in, leadership support, and leadership drive is quite critical. Horlacher & Hess (2016), Westerman et al. (2014) and Fitzgerald et al. (2013) confirm that the role of leadership in executing digital transformation is vital and that a vision and new skillsets are required. Sainger (2018) and Fitzgerald et al. (2013b) further concur that digital transformation is fundamentally about change that leaders normally have to drive, and that even companies that could, in the past, leverage technologies effectively struggle now with the new technologies, as their integration requires a mind-set and skill-set change from previous transformational technologies. Therefore, as Weiling (2004) confirms, leadership is critical to the success of IT adoptions and changes to the organisation culture and that a leader's vision, behaviour, and attitude are constantly being watched, and have a significant impact on how employees perceive their leaders. These confirmations therefore reaffirms that leadership is critical to digital transformation successes.

Leaders who listen and Learn

According to the findings, leaders who listen to the environment and their people have a good chance of succeeding. The literature confirms this, that leaders need to listen to what is happening around them, but many leaders do not realise when they are listening to something of value (G. C. Kane, Palmer, Phillips, Kiron, et al., 2015b). Mewton, Ware, & Grantham, (2009) confirm that leaders need good listening skills to understand, and bring more value. Listening is a social skill and people skill related to empathy and dealing with people, according to Riggio & Lee (2007) and Goleman

(2000), who confirm that leaders react to how they listen. Hence according to T. V. Mumford et al. (2007), leaders need interpersonal skills that relate to the social skills of interacting and influencing others which helps with listening. Hence this confirms that it is important that leaders have the ability to interact and listen and understand the people around them to then articulate and carry out what is required.

The findings also indicate that leaders need to constantly learn and research in this day and age to keep their skills up to date. This is confirmed by literature: as mentioned by Mawas et al. (2019), individuals need to ensure life-long learning by developing key 21st-century skills which entail being digitally literate, knowing how to communicate, collaborate, thinking and problem solving skills and being creative, in order to be able to identify the learning activities they have to undertake in order to improve their knowledge and skills. Hence this confirms that in a digital age leaders need to constantly keep their skills up to date and always be learning as the digital environment is constantly changing and leaders need to keep ahead.

Over all based on the findings and literature compared and contrasted it confirms that the role of leadership is key to successful digital transformation, that leaders need the right skills, need to listen to their people, and need to keep their skills up to date to survive digital transformation. This reaffirms the purpose of this study and that leadership, skills, and learning are relevant and important.

Learning to fail

The next highly-rated aspect, as per the findings, was the need for leadership to learn to fail, do so quickly and cheaply, and learn from it, due the fact that failure in digitalisation is common.

This was a point highlighted by many of the respondents in the findings, that failure is the norm in digital transformation. According to literature G. C. Kane (2018) found that many leaders are encouraged to create environments for their employees to experiment in and learn from failure or solutions not working out. This type of environment encourages employees to explore various technologies and solutions without the fear of not succeeding (G. C. Kane, 2018). The researcher believes this confirms that failure is key to digital transformation, and that organisations and leaders who allow their people to fail and learn from failure are allowing for greater transformation to occur. The literature therefore confirms this notion as per the

findings, and also indicates as per the researchers opinion that South African leaders have realised that they need to as leaders accept failure as part of succeeding in digital transformation.

Culture

The concept of culture as per the findings was also a vital point as many leaders believed that culture is important in driving digital transformation. The respondents believed that if the organisation has the right culture it can contribute to the success of digital transformation, as it is the determiner of what and how the organization does things. The culture that the leader sets and the culture of the organization would therefore also contribute to the individuals' ability to learn from failure and experimentation. According to literature, Weiling & Wei (2004) confirm that an organisation's culture is created by the way people think, and impacts the ways they behave. Thereby culture acts as "the social glue that holds organizational members together and expresses the values, social ideals, and beliefs that members share" (Weiling & Wei, 2004, p430). This and a similar sentiment were shared by Christensen (2006, p. 1), that there are many definitions of culture, including "the norms that evolve in close working groups", observed behavioural consistencies that occur when people interact, or the thinking that guides an organisational policy towards employees and customers. Weiling & Wei (2004) further emphasise that an organisation's beliefs and values therefore impact employees' perspectives and perceptions. According to G. C. Kane, Palmer, Phillips, Kiron, et al.,(2015) a digital leader stands out from other leaders in that they have a clear strategy, together with culture, and leadership ready to drive digital transformation. These scholars further state that the reason for most companies failing is mind-set and processes not changing due to the organisation not building a culture that allows for change (G. C. Kane, Palmer, Phillips, Kiron, et al., 2015b). Thus the researcher believes, this confirms the notion of the importance of culture as per the literature, indicating that people are a key part of culture, who's thinking, skills and behaviour then impacts the culture and this then impacts the people accordingly again as per (Weiling & Wei, 2004), (Christensen, 2006). People and culture therefore have a circular effect on each other.

People

The importance of people as per the findings, was rated quite high in the study, in terms of having the right people to execute digital transformation, giving people the right tools and skills, taking people along on the journey, and hiring the right people. As was mentioned by one head of IT of a freight and logistics company, one can have the most beautiful system, but it will not do anything if you do not have the right people to make it work. Therefore, the people involved in digitalisation are a significant factor in its success.

According to literature, G. C. Kane, Palmer, Phillips, & Kiron (2015) confirm, hiring the right talent is key to digital transformation as organisations need digitally-savvy employees. There are limited organisations that are employing appropriate ways to improve their digital talent or develop them internally. The literature stated that most people, especially the younger generations, like the millennials want to work for organisations that are at the forefront of technology, that are deeply committed to the digital process, and in which employees can grow and learn (G. C. Kane, Palmer, Phillips, & Kiron, 2015). According to Mawas et al. (2019), with technology advancing so rapidly it is becoming key for people to continuously learn and improve their skills, knowledge, and capabilities, thereby becoming life-long learners to keep up-to-date. This therefore confirms the notion that people are important in digital transformation and that keeping them upskilled is important to ensure an up to date organisation that has the right skills and people to carry out successful digital transformation, and one that will attract further talent in the future.

Collaboration

In terms of collaboration, as per the findings, many respondents believed that collaboration between teams, other corporates, vendors, and relevant parties is necessary to grow and learn from, as people cannot operate in silos anymore. As per the literature, Westerman et al. (2019), state that the use of new technologies has enabled some organisations to allow their employees to work virtually, from home, or at certain locations in the office. This approach has allowed teams to cross collaborate with each other using the various networking and technology tools, enabling them to share their knowledge in various ways (Westerman et al., 2014). Leaders are also encouraged to allow collaboration to occur between other parties and universities to allow for more learning and exploration, and to see what works for their particular organisation (G. C. Kane, 2018). The above therefore confirms

that collaboration allows knowledge sharing and continued learning which is a fundamental requirement that contributes to the success of digital transformation. Leaders also can no longer work in verticals anymore and need to work across silos to achieve more interaction, innovation and encourage new ways of thinking, allowing for knowledge sharing and learning to occur.

Leaders need a vision

As per the findings the respondents mentioned that leaders need a vision for their people to follow which contributes to successful digital transformation. The literature confirms the concept of leaders having a vision, as according to Westerman et al.(2014) it has been confirmed in research they conducted that that leadership is key once again for driving change, and a vision is needed to show the direction of change. This confirms the notion that leaders need a vision as a key success factor for digital transformation as without a vision, how will leaders know where they are heading, as this allows them to see the bigger picture.

Change Management

A few respondents in the findings mentioned that the importance of change management was key to the success of digital transformation in their organisation, due to their ability to help manage the components of it. According to literature (Fitzgerald et al., 2013) confirms that due to the difficulty of implementing successful digital programmes, it is important to manage skillset, organisational issues and leadership to ensure the business benefits of the implementation. Hence confirming the importance of change management in helping to co-ordinate various components to ensure successful implementation of digital transformation.

Big data, social media, and other technologies

The use of various technologies and big data was mentioned quite often by the respondents. Understanding big data was another important point: the data of one's organisation is a key factor to the success of digital transformation, so one needs to understand it to be able to use it correctly and implement the right technologies to get the right information. The use of social media has assisted greatly in allowing for successful digital transformation.

As per the literature, Kohnke (2018) states that digitalisation comprises four types of technologies at present, namely: analytic technologies including big data, mobile technologies, cloud technologies, and social media technologies which are needed to help in the digital transformation process. However in using this analytic technology of big data, it is further stated that “a digital transformation isn’t a single effort but rather a portfolio of initiatives that work together to scale the change” (Kohnke, 2018, p70) and this happens continuously. This confirms the notion that big data is a key part of the transformation but the data needs to be continuously managed and maintained with other technologies to be used accurately.

Other factors

Other, lower-ranked items identified in the findings include being adaptable and agile as a person in order to deal with the constant changes and technologically-disruptive environment that leaders have to operate in. G. C. Kane (2018) in the literature stresses the importance of leadership adaptability, stating that in a continuously changing environment, leaders are regularly expected to deal with new challenges and need to adapt their leadership style and their organisation to these new environments. Uhl-Bien et al. (2007, p. 301) argue that knowledge era leaders need “a change in thinking away from individual, controlling views, and toward views of organizations as complex adaptive systems that enable continuous creation and capture of knowledge”. Ramesh and Delen (2019) build on this stating that when leaders are actively involved, an adaptive culture is stimulated which leads to successful digital transformation. This confirms that adaptable, and agile leaders are a key factor to successful digital transformation. Another point that was mentioned in the findings by only one respondent was that a mature organisation deals with transformation easily. G. C. Kane, Palmer, Phillips, Kiron, & Buckley (2015) does confirm that the maturity of the organisation has an impact on successful digital transformation and it is important as mature organisations think differently, and maturity does impact transformation.

6.3.2 Conclusive findings of Research Question 2

Research Question 2 (RQ2): Which factors were key contributors to successful digital transformation?

According to G. C. Kane, Palmer, Phillips, Kiron, & Buckley (2015) the factors that contribute to successful digital transformation are strategy, the maturity of the organisation, the talent and the skills of the organisation, the culture and the leaders are the key factors.

All of these factors match the findings of the study, with the point relating to the maturity of the organisation which was mentioned by only one respondent. However all the findings in this regard were conclusive. The findings from the study particularly emphasised the importance of leadership buy-in and support as being critical. Additional findings was that that it is important to fail and learn from failure as leaders do believe acceptance and learning from failure is now the norm in digital transformation. The role of people and culture in executing successful digital transformation was highly emphasised as the respondents believed that no digital transformation is possible without the right people to help drive it. In terms of culture the respondents also considered this a vital component to the success of digital transformation as the leader and it's people set the culture of the organisation. The respondents also mentioned that collaboration by leaders across silos in the digital age is pivotal as leaders need to collaborate to learn, share knowledge and be aware of what is happening around them. Siloed mentalities are no longer acceptable if one wants to grow in this digital space. Therefore this confirms that South African Leaders understand and have enabled the key factors to ensure successful digital transformation in their organisation.

6.4 Discussion of Results for Research Question 3

Research Question 3 (RQ3): Understanding the Importance of Leadership in Digital Transformation:

This research question relates to interview questions 3 to 6 of the interview guide, and comprises of two research sub-questions that help to answer research question 3(RQ3). The sub research questions are **3.1 What kind of leadership is required for digital transformation**, which relates to interview questions 3 and 4, and addresses the importance of leadership and what kind of leader is required for digital transformation.

The next research sub question **3.2 To what extent does adaptive leadership contribute to digital transformation**, relates to interview questions 5 and 6 to understand the respondents' perspective of adaptive leadership and if it is relevant and what skills would contribute to digital transformation.

6.4.1 What kind of leadership is required for digital transformation?

The objective of this research question was to understand if South African organisations consider leadership to be important in digital transformation, or if there are other factors. Based on this, the next objective is to understand what kind of leader is required for successful digital transformation to occur.

6.4.1.1 The importance of leadership

Interview question 3 was asked to understand to what extent is leadership important in carrying out successful digital transformation in South African organisation.

In terms of feedback, almost all of the respondents agree that the role of leadership is critical to the success of digital transformation. The respondent's mentioned that it is important to get leadership buy-in at all level to ensure success of any project as leaders are the key drivers of any change, and it is important that leaders need to be able to execute and not just talk about their projects. One leader also went to the extent of stating that leadership is even more important than skills, which this respondent regarded as the second most important aspect of digital transformation.

As per the literature and in understanding the attributes that contribute to successful digital transformation, the criticality of leadership is confirmed by various authors such as Sainger (2018), Westerman et al.(2014) and Fitzgerald et al. (2013) concur that digital transformation is fundamentally about change that leaders normally have to drive due to their vision, as leaders are the key drivers of change. Leadership is also needed to drive the culture of change in an organisation (Westerman et al., 2014)

A few respondents in findings indicate that, leadership behaviour is constantly being watched and leaders are under constant scrutiny as they and are looked at for reassurance. Therefore, leaders have to show they believe and live by what they say and are doing in areas and need to be cognisant of this scrutiny at all times. (G. C.

Kane, Palmer, Phillips, Kiron, et al., 2015b) and Weiling (2004) in the literature confirms, that leadership is critical to the success of IT adoptions and changes to the organisation culture, and implying that a leaders, behaviour and attitude is constantly being watched and has a critical impact on the how employees perceive various IT innovations and how it is adopted, which has an impact on the culture of the organisation. The researcher therefore believes a leaders behaviours, skills, vision and motives creates the culture of the organisation that is replicated by it's people.

Another key point that emerged from the findings was that many of the respondents mentioned that leadership must be willing to experiment and fail. This was considered a critical success factor by most respondents, as leaders who are accepting of failure but learn from it and go forward, demonstrate to their employees that failure is normal and that you have to experiment sometimes to learn in unfamiliar areas. The literature by G. C. Kane (2018) confirms this point stating that many leaders must create environments where employees can experiment. In so doing the leaders are making it clear that is it ok to fail and learn from failure.

Many respondents also mentioned that leaders are important in setting the culture of the organisation and that the behaviour and actions of the leader is what drives the culture of the organisation. (Christensen, 2006) confirms that culture is leadership's tool for helping to achieve the goals of the organisation and that the leader's behaviour and actions sets the culture. (G. C. Kane, Palmer, Phillips, & Kiron, 2015) and Hartl and Hess (2017) builds on this that culture is critical for successfully implementing digital transformation in an organization and that having a digital mind-set is also a key contributor. This reaffirms the importance of leadership in creating a culture.

A few of the respondents also indicated in the findings that it is important for leaders to have a vision for others to follow, and to think differently by having an out of the box thinking approach. The literature by G. C. Kane (2019) confirms this point stating that having a strategic vision, a forward-looking perspective, and a change-orientated mind-set is key. It is therefore important that leaders must have vision to achieve what they need to.

The findings further stipulate that leaders need to ensure they are up to date and listen to the younger generations, as a leader does not always know everything, and that creativity and knowing when to allow others to lead is important as a leader can learn from others. The literature by Mewton, Ware, & Grantham, (2009) confirms on leaders having to be good listeners , and the way a leader listens impacts their reaction. However Riggio & Lee (2007) and Goleman (2000) confirm that listening skills are part of emotional intelligence skills, which are interpersonal skills relating to social and people skills. Hence leaders need this key people skill as they can learn from their people if they listen carefully.

On the contrary, there were a few leaders who mentioned that leadership was not a critical factor to successful digital transformation but rather having a different mind-set, having a vision and strategy was important and one leader stressed the restraint on resources, as leadership can always fund digitalisation, but if resources are not available then one's project will not go anywhere. Fenech et al. (2019) confirm this in the literature by stating that to maintain a competitive advantage through the digital strategy, human and intellectual capital and knowledge are the critical components. Holt et al. (2012) further adds that working with millennials is highly beneficial to digital transformation, as they are seen as highly educated, extremely proficient and skilled in technology, and confident and expect to be stimulated accordingly and allowed to collaborate and work in different ways. From a mind-set perspective this point is supported by the literature where Dweck (2012) confirms that companies that have succeeded in being continuously successful are those that have a growth mind-set, as they constantly try to improve themselves and those around them, try to understand the skills needed in the future, and surround themselves with the most able people. This therefore states that it is important to think differently i.e. have a different mind-set, and by surrounding oneself by people who think differently this impacts the leader's ability to learn from their people and brings in the right talent into the organisation as well to prevent a restraint on resources.

It can therefore be confirmed based on the findings and confirmation by literature that the importance of leadership is critical and very important in the execution of successful digital transformation as leaders play various roles as enablers, executors and thought leaders in this process.

6.4.1.2 What kind of leader is suitable for successful digital transformation

This research sub question is based on interview question 4. After establishing in interview question 3 the importance of leadership, this question builds on this in aiming to understand the kind of leader required for successful digital transformation. There were numerous descriptions regarding the kind of leadership required for successful digital transformation. There were a few skills mentioned again here that were mentioned in the criticality of leadership. The list of the kind of leader is seen in Table 5 in Chapter 5, where the top skills are listed. Only the main findings will be discussed as per this table, not the skills that have been discussed already.

Leaders need to learn to fail

This factor has been the most highly ranked item on table 4 indicating that many of the respondents emphasised the importance of leaders who learn from failure, as failing in digital transformation must be accepted. This has been confirmed by literature as was discussed in the related section earlier by G. C. Kane (2018), who confirm that leaders need to create environments to experiment and learn and fail in.

Understand Technology

The findings reveal that a leader should understand technology in order to carry out successful digitalisation. Many of the respondents mentioned this point and stated that the leader do not have to be a technology expert, but a basic understanding of technology is required. Bennis (2013) validates this point in the literature stating that leaders need to understand how to utilize the various technologies and tools of the digital world, and understand the impact on their relationship with various stakeholders such as customers, partners, and employees, or they will be left behind in this digital age.

Collaboration

Collaboration was quite highly ranked by many of the leaders as they believed in a digital environment along with having a vision one has to collaborate with various parties to know what is happening around. G. C. Kane (2018) stipulates that leaders are also encouraged to allow collaboration to occur between other parties and universities to allow for more learning and exploration, in order to see what works for the organisation.

Open Minded Leaders and Mind-sets

Quite a few respondents mentioned that along with having a vision and leaders being able to communicate well, leaders must have a different mind-set and always be willing to learn and be open minded to changes coming their way. A leader who is open to change, and positive was mentioned by a few respondents as being key. Dweck (2012) in the literature confirms that one can have two types of mind sets: a fixed mind-set, where one believes things cannot be changed, or a growth mind-set, that allows one to expand, persevere, and thrive in challenging times. Dweck (2012) further confirms that companies that have managed to be continuously successful are those that have a growth mind-set, as they constantly try to improve themselves and those around them, try to understand the skills needed in the future, and surround themselves with the most able people. Hence leaders with a different mind-set are key.

People skills are important and Having and Hiring the right talent

Many of the respondents emphasised the importance of having the right people skills and social skills when interacting is vital for a leader. According to T. V. Mumford et al. (2007), interpersonal skills relate to the social skills of interacting and influencing others. As per Riggio & Lee (2007), leaders who have social and emotional intelligence skills are more successful than those with only technical skills. Many respondents also mention that it is important for leaders to also hire the right talent and have the right people in their organisation working for them as people are key to digital transformation. This has been confirmed by literature by G. C. Kane, Palmer, Phillips, & Kiron (2015) who confirm, hiring the right talent is key to digital transformation as organisations need digitally-savvy employees. Hence leaders need the right people in their organisation and the key skills to interact with them, as people skills is a core skill of a leader.

Being Flexible, Adaptable Leaders and agile leaders

Being flexible, adaptable, and agile was also mentioned by quite a few of the respondents, due to the situations that leaders have to face in digital transformation. The situation is always different and leaders need to be agile to change quickly and adapt to these changes fast. The respondents also mentioned that knowing when to cut their losses was important so as not to hold onto anything preventing a leader

from going forward. According to Oc (2018), Leadership varies based on the situation or the context in which it takes place in (Oc, 2018). Kohnke (2018), confirms that in today's volatile, uncertain, complex and changing environments, disruption is the new normal that leaders are to operate in, thus demanding that leaders become more flexible, take more risks, and make decisions faster than do the traditional management systems some organisations are accustomed to. This notion confirms that leaders need to be adaptable and flexible in this digital age to deal with the constant disruptions and changes.

There was mention by one CIO in the findings that South African leaders are not moving with the times and that more skills and effective digital leaders are needed in South Africa. This point can be confirmed in literature where. (Schwab, 2018) states that South African organisations are considered laggards in technology and, according to the global competitive index 4.0 2018 rankings, South Africa dropped five places from 2017 to being ranked 67th out of 140 countries in terms of its global competitiveness, with sub-Saharan countries still ranked the lowest when it comes to competitiveness, innovation, and technology transformation (Schwab, 2018). Even though this statistic is shown, this study shows based on the findings, that the leaders in South Africa can implement digital transformation successfully, and they have the key capabilities and understand the key drivers to make it happen.

A unique mention in the findings was that leaders need to be generous and 'Unicorn leaders' who are humble, enabling leaders with a vision, and are non-authoritarian that sets a high expectation. According to literature by Deloitte (2017), considering the new environments we work in today that are high in innovation and where employee wellbeing, ethical and caring behaviour has become more important, This concept of a unicorn leader is also known as servant leadership was mentioned by a respondent. According to Dierendonck (2011), servant leadership has been defined as serving others and serving first by creating an environment to allow employees to grow, which is totally different from other leadership types who are there to see to the wellbeing of the organisation. Dierendonck (2011) further defines the key characteristics of servant leadership relate to being humble, accepting others, being authentic, having direction or a vision, and to develop, empower and take care of people. This confirms the generosity of a leader and the type of environment this unicorn leader tries to create in this type of an environment.

6.4.2 Discussion of Results as per Research Sub-Question 3.2

Research sub-Question 3.2: To what Extent does Adaptive Leadership Contribute to Digital Transformation?

This research sub-question relates to the interview questions 5 and 6 regarding leadership's understanding of adaptive leadership and whether it is relevant for successful digital transformation, and determining which skills are relevant from an adaptive leadership perspective.

6.4.2.1 What is Adaptive Leadership

The objective of this question was to gauge from the respondents their understanding of adaptive leadership in the context of successful digital transformation and related to question 5 of the interview guide.

As per the findings, most of the respondents understood what an adaptive leader was. Adaptive leadership was defined by the respondents in terms of being relevant to the situation, or changed according to the context of the situation. They were leaders who are situationally aware and adapt to whatever comes their way. They were regarded by some respondents as being contextual leaders who have many networks.

According to the literature Böck & Lange (2018) state that adaptive leadership is a form of leadership that entails equipping people to be able to solve their own problems and deal with complex situations. According to Northouse (2016) adaptive leadership relates to how leaders bring about change at multiple levels such as in organisations, in society, and at an individual level. However, Osborn & Marion (2009) and Osborn et al. (2002) state that leadership depends on the context of the situation, and it's demands and constraints emerge based on that context. Hence the literature does match what the findings say, as adaptive leaders have to change based on where they are, and as a result people are equipped with what is necessary to deal with the situation. Hence confirming that adaptive leadership is contextual.

Some leaders in the findings believe adaptable leaders are flexible and agile, understand their environment, and adjust accordingly. They are also situationally aware and apply the right skills and tools at the right time. However, due to the nature

of technology and the rapid advances in the market and industry, leadership is having to adapt and adjust to survive. Adaptive leadership is also known as effective leadership by Uhl-Bien et al. (2007) or flexible leadership, according to Yukl & Mahsud (2010). It has been defined by Uhl-Bien et al. (2007) as being a change in behaviour that emerges when faced with various interactions, networks, interdependence, and complex, constantly-changing environments. G. C. Kane (2018) further confirms that, in a continuously changing environment, leaders are expected to deal with new challenges and need to adapt their leadership style and organisation to this new environment. To meet this complexity in their work environments, Uhl-Bien et al. (2007, p. 301) argue that knowledge-era leaders need “a change in thinking away from individual, controlling views, and toward views of organizations as complex adaptive systems that enable continuous creation and capture of knowledge”. This point addresses the change in environment that adaptive leaders need to adapt to. Adaptive leadership is recognised when the new idea, knowledge, and adaptive ideas create an impact and are accepted and embraced by others (Uhl-Bien et al., 2007, p306). Doyle (2016) builds on this further stating that changes and pressure from the external environment are triggers for adaptation within an organisation. This adaptation then leads to new capabilities and an adaptive culture to gain a competitive advantage. This therefore reaffirms many of the definitions of adaptive leadership by literature stating that adaptive leadership certainly is about flexibility and agile and that based on the situation leaders lead accordingly. Also that adaptive leaders need to learn and gain new skills based on the context and situations they deal with.

Most of the respondents understood adaptive leadership and it does corresponded with the literature and the kind of leader that is required for digital transformation as one adapts to the environment and situation. The overriding theme is that adaptive leadership is contextual and leaders have to adjust and adapt accordingly.

6.4.1.2 Adaptive Leadership Relevance and Adaptive Leadership Skills

The second part of the research sub-question 3.2 relates to interview question 6, which aims to understand if adaptive leadership is relevant and the skills that adaptive leaders need.

a) Relevance of Adaptive Leadership

In terms of relevance of adaptive leadership to digital transformation, the majority of respondents interviewed believed that adaptive leadership is crucial for successful digital transformation. There is no explicit mention in the literature that adaptive leadership is the ideal leadership for digital transformation; however, according to the complex leadership theory, adaptive leadership is key for operating in complex adaptive systems which is part of the volatile, fast-paced knowledge era, as per Uhl-Bien et al. (2007), and the literature just discussed by this scholar that adaptive leadership is also known as flexible leadership that has to adapt and change to the context of the situation.

b) Adaptive Leadership Skills

A large range of skills and behaviours are mentioned in the findings for adaptive leadership, however only the top five will be mentioned here as per Table 6 in chapter 5.

High Tolerance to failure

Once again many of the respondents mentioned that adaptive leaders need to have a high tolerance for failure, as one needs to fail a lot in these situations as solutions will not always work out as they should. However, one needs to learn from that failure and use it to grow, and also learn how to fail fast and inexpensively. Admitting to one made a mistake was also a key mention. As mentioned before by these scholars (G. C. Kane, Palmer, Phillips, Kiron, et al., 2015b), creating a culture to experiment and learn from failure is important for leaders and their people. The scholars also state that in organisations where implementations fail, this is usually due to expectations falling short because leaders did and their people did not change their mind-set, processes, or built cultures to deal with this change. According to literature by G. C. Kane (2018) many leaders are encouraged to create environments for their employees to experiment and learn from failure or solutions not working out. This type of environment encourages employees to explore various technologies and solutions without the fear of not succeeding. This point has come up in the other research questions as well, proving the similarities between adaptive leadership and general digital leadership skills mentioned by the respondent's. This is also see in in Table 6 in chapter 5.

Being open minded and having a learner mind-set

Additional factors of being open minded, not stuck in your ways and willing to try out new things, and taking opportunity when it presents itself are also key to adaptive leadership as mentioned by many of the respondents. The respondents also mentioned in relation to this that having a learner mind-set and being open to continuous learning and change were other key outputs by the research and having an entrepreneurial mind-set and being forward thinking.. This is confirmed in the literature by Dweck (2012) once again who mentions that it is important not to have a fixed mind-set, but rather a growth mind-set to grow and learn as a growth mind-set, that allows one to expand, persevere, and thrive in challenging times. Hence having the right mind-set is key to accepting new changes and learning and growing. One of the big five leadership traits, according to Yukl & Mahsud (2010) is openness to learning which entails the ability to learn new and better ways to solve problems, and accept and learn from negative feedback given by peers, employees, and others. With regard to having an entrepreneurial mind-set, Leffel, Hallam, & Darling, (2012) define an entrepreneur as someone who develops an opportunity and then creates an organisation to achieve that opportunity, but it entails taking much risks. They also state that entrepreneurship depends on the person's personality, motivations, cognitive ability, skills, the environment, and the person's experiences to name a few. Hence adaptive leaders once again have to adapt their thinking and abilities to their situation and become entrepreneurial too.

Understand Technology

Another highly ranked skill for Adaptive leaders was that they must also understand technology. Leaders do not have to be technical gurus but rather have some sort of digital literacy, and understand the main technologies and how they work or have some affinity with technology. According to literature, Yukl (1989) confirms that technical skills, conceptual skills, and interpersonal skills are necessary for most leadership roles. However, the importance of these skills varies depending on the situation. Bennis (2013) validates this point in the literature stating that leaders need to understand how to utilize the various technologies and tools of the digital world, and understand the impact on their relationship with various stakeholders such as customers, partners, and employees, or they will be left behind in this digital age.

This therefore confirms that leaders need to understand technology to keep ahead and having skills and understanding of technology is complimentary to their leadership skills and is required in this digital age.

Have a vision/Communicate your vision

A fair number of respondents mentioned that having a vision is important as only then will people need to know where a leaders is going to follow them. Communication of this vision is also key. The literature by G. C. Kane (2019) confirms this point stating that having a strategic vision, a forward-looking perspective, and a change-orientated mind-set is key for a leader. However every vision needs to be communicated to make it a reality, therefore Communication is an important interpersonal skill in today's global business environment (Robles, 2012) and in a digital economy, as leaders need to communicate their leadership agenda's to their customers, employee and partners to maintain them and keep them informed. Leaders therefore need to know how to have good influencing skills as they have to continuously influence, listen and persuade when they are communicating.(Williams, 2001)

However accordingly to the literature the key skills relevant for adaptive leadership according to Doyle,(2016) argues that adaptive leadership should possess the following knowledge and skills namely knowledge of the organisation, ability to think strategically, dealing with uncertainty, communicating and listening skills. Doyle ,(2016), Northouse, (2006) and Yukl & Mahsud, (2010), elaborates further that adaptive leaders need skills that involve leaders understanding the situation and being flexible when faced with different situations that require a change in strategy or behaviour. This therefore confirms that leaders need various skills from having a vision, communicating it and other interpersonal skills to be an adaptive leader.

Being Agile and Flexible

A few of the respondents mentioned that adjusting to the situation is a key requirement to be able to be an adaptable leader. Also being agile to the changes that are coming your way is important as leaders need to be able to keep changing to the environments they are part of. (Northouse, 2006) and (Yukl & Mahsud, 2010), elaborate further that adaptive leaders need skills that involve understanding the situation and being flexible when faced with different situations that require a change

in strategy or behaviour. This confirms that as per the respondents and what literature confirms adaptive leaders need to be flexible and adapt to their environments they are placed in.

6.4.3 Conclusive findings for Research Question 3

Research Question 3 (RQ3): Understanding the Importance of Leadership in Digital Transformation:

In reviewing the findings from the two research sub questions for RQ3, and their findings based on the literature, it can be confirmed that the role of leadership is critical to digital transformation and that the respondents understand the type of leader that is required for digital transformation. An adaptive kind of leader is very relevant to digital transformation and the respondents understand the skills needed. The characteristics of an adaptive leader also match that of a digital leader as described by the respondents in Table 5. Hence illustrating that South African leaders consider an adaptive leadership critical for digital transformation.

Based on the findings and the confirmation with literature it can be confirmed that in answering research sub-question **3.1 What kind of leadership is required for digital transformation?**, the findings are all conclusive to the literature and agree. Leadership is considered very critical to successful digital transformation and many leaders believed that without leadership buy-in no project is successful. In describing the kind of leader needed for digital transformation, many descriptions come up however the main points that most leaders mentioned and that have a high frequency count for this reason was a leader who is willing to fail and learn from failure, a leader who understand technology, leaders who collaborate, followed by those who are open minded and think differently and leaders who have and hire the right people is key along with being a flexible and adaptable leader. There have been some aspects that have been emphasised more than the literature namely people and learning to fail, however all the findings match that of the literature.

In answering interview questions 5 and 6 for this research sub-question **3.2 To what Extent does Adaptive Leadership Contribute to Digital Transformation**, it has been confirmed that South African leaders understand what an adaptive leader is

and consider it crucial to digital transformation. The skills that are listed are also in agreement to that of literature, indicating that the respondents understand the key skills that are needed by adaptive leaders to carry out successful digital transformation. A comparison done on the description of a digital leader and the skills for an adaptive leader also confirm that the respondents believe adaptive leadership contributes to digital transformation and is the relevant leadership for successful digital transformation, thereby confirming that the findings are conclusive for this research sub-question.

6.5 Discussion of Results for Research Question 4

Research Question 4 (RQ4): What is leaderships understanding of Digital leadership and what Digital leadership skills are needed for successful digital transformation by South African leaders?

The objective of this research question is to address another key construct of this research being the skills needed for successful digital transformation. This research question addresses interview questions 6 to 10 of the interview guide. Each component of RQ4 will be addressed in the sections below namely leaderships understanding of digital leadership, and the skills that are needed for successful digital transformation.

6.5.1 Leadership's Understanding of Digital Leadership

The objective of this interview question was to gauge what the respondents understandings were of digital leadership and if they saw digital leadership to be different from traditional leadership.

Digital leadership was defined by the majority of respondents in the findings as a leadership that has to embrace digital, change, and technology, and adapt to these digital times. Most respondents, however, did believe that digital leaders are no different from all other leaders today, and that digital leaders are not only IT leaders, as in the age of digital all leaders need to be digital leaders. According to the literature, digital leadership can be defined in terms of its contributions and how it functions in a knowledge society, thus confirming that all leaders are digital leaders in this knowledge society. El Sawy et al. (2016) define digital leadership as leaders that have to do the right things to achieve strategic success of the digital

transformation for their organisation and business environment. This confirms that digital leaders are embracing change for the times and they have to embrace digital. Bennis (2013) confirms, leaders need to understand how to utilise the various technologies and tools of the digital world and understand the impact on their relationships with various stakeholders such as customers, partners, and employees, or they will be left behind in this digital age. Thus confirming digital leaders need to understand and embrace technology if they want to be leaders in this age or they will not be able to compete.

The respondent's also mention that digital leaders stand out from other leaders and they lead from the front on digital projects as they are the leaders in technology and leading digital is not easy. Van Outvorst et al.(2017) confirms in the literature that digital leadership must be able to use modern communication technology, and be able to guide the people in their organisations and in society to use it correctly so as to communicate, and make proper use of the information they gather. This indicates that digital leaders must know technology to lead it and understand it better than the rest of the organisation.

Many respondents also mentioned digital leadership is about how a leader thinks, in addition to understanding the various technologies, and adopting them, digital leaders also must have a vision, be able to run with it, have the right attitude. The literature by Goethals et al.(2003) and Westerman et al.(2014) confirm that digital leaders need a vision for what they want to achieve, must be in search locally and globally for solutions, must have a passion for what they do, and must possess a hunger for constant learning from both their competitors and their peers. This reaffirms that digital leaders need a vision to lead.

The respondents also mentioned that digital leaders, according to the findings, are thought to think differently and have a different mind-set; no longer leading in silos, but must be collaborating. This concept of mind-set has been addressed by the literature in terms of having a growth mind-set as per Dweck (2012), indicating digital leaders need a mind-set shift as well as has been seen in adaptive leaders.

Finally some leaders believed that digital leadership can be viewed as the catalyst for implementing digital transformation in an organisation. It is a form of servant

leadership, rather than authoritative leadership and some respondents described it as being contextual. Digital leaders in this knowledge era need new digital skills to lead their organisations effectively (Deloitte, 2017). G. Kane et al. (2018) and G. C. Kane (2018) confirm on this point stating that due to the continually changing competitive environment, leaders are facing new challenges and must adapt both their organisation and their leadership style. To do this, leaders need new skills and capabilities than those used in the past. This therefore states that digital leaders need to adapt their leadership style based on the context, challenges and environment they lead in.

Therefore in reviewing the findings from the respondents and that of the literature the general understanding of digital leaders is confirmed that digital leaders need to embrace technology be more open minded, and think differently as they are leaders for this knowledge era.

6.5.2 Digital Leadership Skills Needed for Successful Digital Transformation

In answering the second part of the Research Question 4, the skills aspect will be addressed in the sections that follow:

a) Key Skills as per Skills Strataplex

The skills from the Skills Strataplex(T. Mumford et al., 2007) were used to determine if these key skills were relevant for successful digital transformation. These skills were also used in the research conducted by Duburu (2018), and the objective was to see if these skills types were relevant for other industries as well in terms of successful digital transformation.

Interview question 7 was based on the skills in the Skills Strataplex that was posed to the respondents asking them to explain what the difference was between the following four skill types: Cognitive, Influencing, Strategic, and Business Skills. The objective was to gain an understanding of what leaders thought they were, and the question was asked as an open ended question. Many of the leaders unconsciously began to differentiate the skills but also to relate them to digital transformation, and ranked the skills in terms of importance in this context.

Cognitive Skills

Cognitive skills were regarded as relatively important by many of the respondents, as per the findings. Table 8 in chapter 5 ranks cognitive skills fourth out of the four skills that this question was testing, with only seven respondents out of the 17 confirming it was important. In answering this question two respondents struggled to explain this skill, but understood what it related to. Most of the cognitive skills findings were defined by the respondents to related to how one thinks, one's ability to learn, one's ability to understand and analyse information, reading the environment and making decisions based on that, and how quickly one responds. According to literature, most scholars such as T. Mumford et al.(2007) consider cognitive skills as a leader's most important attribute. It entails basic skills that relate to cognitive capacities such as collecting, processing and disseminating information, and learning. These key skills entail speaking so as to communicate appropriately, listening skills to understand the context, written communication and learning skills, and critical thinking, which entails using logic to analyse various situations. Most of the leaders who understood cognitive skills therefore understood this skill correctly. However, although literature suggests that this skill is important, it is interesting to note that once again even in this research, as was found in the research conducted by Duburu (2018), that cognitive skills were not considered as important as the literature made it to be. Instead, many respondents regarded the need for all four of these key skills (cognitive, influencing, business and strategic skills) as being equally important, as seen in Table 12 in chapter 5.

Being intuitive was also mentioned in the findings. However, as per the definition, being intuitive is not part of cognitive skills. One respondent, the MD of an investment house, who did believe cognitive skills were key had developed a skills model as per Fig 4 seen in Chapter 5, which states that for cognitive skill one needs critical thinking, systems thinking, problem solving and researching abilities, discernment, information literacy, invention skills, and creativity. This respondent, P3, the MD of a large multinational investment company, had used this model in several organisations he had been at, and confirms that if leaders are developed in these cognitive skill areas, the way they solve problems is vastly improved and looked at from a different perspective. He therefore maintains that cognitive skill is the core skill of leadership. According to literature T. Mumford et al. (2017) state that, there are also nine critical cognitive skills that leaders need for problem solving. These are: 1) problem definition, 2) cause/goal analysis, 3) constraint

analysis, 4) planning, 5) forecasting, 6) creative thinking, 7) idea evaluation, 8) wisdom, and 9) sense-making/visioning

Most of the skills that were mentioned as important in the study by the respondents and the skills from the model of respondent P3, corresponded to those in the theory. Most of the leaders also understood cognitive skills. Cognitive skills were considered a key skill by most respondents, but was not ranked as highly in comparison to the other 3 skills. Many respondents considered all four skills to be of equal importance and dependent on the context of the situation for its use. Therefore the finding is conclusive.

Business Skills

Business skills was considered another core skill by the respondents. Compared to cognitive skills, business skills ranked third in importance, as per Table 12 in Chapter 5.

As per the findings, quite a few of the respondents considered business skills were needed to understand the changing environment of business and understanding the financial statements so as to be being financially astute. The respondents also believe it was also relevant to understanding the operations of a business, having financial acumen, understanding the economy and various financial aspects of an organisation, and understanding the core aspects that drive profitability of one's business, namely product, market, and service. According to literature these skills relate to the leaders work areas such as operations investigation and managing personal resources and financial resources, and are important for management decisions (T. Mumford et al., 2007). This therefore confirms that business skills are what leaders need in their day to day skills and understanding the financial aspects is important.

Although only a few respondents echoed this stance, business skills are indeed seen as key, as they provide leaders with an understanding of business and financial operations. Some respondents believed that business skills are key for digital transformation and that business skills cannot operate without technology. (G. C. Kane, Palmer, Phillips, Kiron, et al., 2015b) in literature indicate that technology skill is no longer a key skill for leaders as it was in the past to have, but rather knowing

one's business, having a strategy and being able to influence the organization is important.

Many respondents however also stated that business skills is not a skill that is more important than the other three key skills or one that can operate on its own. As a result business skills is needed along with the other three skills of cognitive, influencing and strategic skills. The findings and the literature therefore correlate that business skills is a needed skill for digital leaders.

Influencing Skills

Many of the respondent's in the findings state that influencing skills relate to communicating one's vision, influencing others to follow your vision, making others see your point of view, creating partnerships, and collaborating with others. It is considered an important skill that one requires at all times as a leader. However, an important point made by a few respondents is that leaders cannot influence if they are not trusted or liked, and if the existing culture is an influencing culture people are easily influenced by the organisational leaders. Story telling is regarded by leaders as a form of influencing. Therefore influencing skills are regarded by most of the respondents as the crucial skill.

The literature found that the main role of leadership is to influence and engage, as most definitions of leadership relate to the influence process. This process includes elements such as who exerts influence, how influence is exerted, and attempts to influence (Yukl, 1989). According to Daft, R. L. (2011) and Breuer & Szillat (2019), leadership is thought to be about influencing people or groups of people to achieve a common goal. Breuer & Szillat (2019) further emphasise that leaders cannot influence without a vision or a goal in mind. The literature also confirms that, influencing skills relate to the social and interpersonal skills of working with others and influencing them (T. Mumford et al., 2007). Influencing skills as per the Skills Strataplex relate to mainly interacting with and influencing others, negotiating, persuading, and co-ordinating oneself and others (T. Mumford et al., 2007). This is seen to be a social skill and a people skill as per these scholars as well. This therefore confirms what the respondents stipulated, thereby confirming that influencing skills is about interacting with people most of the time and is a social or interpersonal skill where people skills are needed.

This skill was rated by most of the respondents as the most important, which contradicts the literature, which identified cognitive skills as most important. Even though this skill was rated higher than strategic, business, and cognitive skills, many of the respondents once again believed that this skill needs to be employed in conjunction with the other three to ensure successful digital transformation.

Strategic Skills

Overall, the respondents considered strategic skills as having a vision and direction, planning for the unforeseen, and having a long-term perspective and having a strategy was important. However, this perspective should not be too long as things are changing often and very quickly in this digital age. For this reason the leaders felt that a 5-year plan was too long.

Some respondents believed that being strategic also means being aware of your entire environment before making a decision. Others mentioned that strategic skills entail investing in those skills that move your organisation to the next S-curve, but in all it is about planning and shaping one's future and direction.

The literature indicates that strategic skill involves looking at alternative options to solve problems (T. Mumford et al., 2007). However as elaborated by G. C. Kane, (2019) , digital leadership need to provide a vision and purpose that is the key so their people know what to follow. However, having a strong vision alone is not sufficient, leaders must be able to execute this vision and have good governance in place.

The research and literature both suggest that strategic skills is concerned with the vision and direction of the organisation. Most leaders saw this as an important skill and it was rated the 2nd most important skill, after influencing skills as per Table 11 in Chapter 5. However once again this skill was not seen to be able to operate on it's own and needed to be combined with the other three skills to ensure successful digital transformation.

Additional skills

Over and above these four skill types, some respondents voluntarily mentioned additional skills (not part of the Skills Strataplex) required by leaders. These skills were:

Entrepreneurial Skills and Mind-set

Entrepreneurial mind-set and skills was mentioned by a few respondents as being required over and above the four key skills. The respondents believed that having an entrepreneurial mind-set and skills entails bringing about a creative and different perspective. One cannot think and run your organisation as was done in the past. Entrepreneurial thinking and skills is required to change the perspective of how leaders should deal and create new opportunity. This was not a skill supported by the Skills Strataplex and is seen as a new addition to the four skills (cognitive, influencing, business and strategic skills) that the respondents felt was relevant as part of this study.

The literature as per Leffel, Hallam, & Darling, (2012) define an entrepreneur as someone who develops an opportunity and then creates an organisation to achieve that opportunity. Entrepreneurship has been linked to the term of 'risk taking', as that is what it is all about. Entrepreneurship has a significant impact on an individual's development as it leads to growth in their relevant area's they engage in. However these scholars state that entrepreneurship depends on the person's personality, motivations, cognitive ability, skills, the environment, and the person's experiences to name a few. It is said that "the foundation of an entrepreneurial mind-set are metacognitive in nature" according to Leffel, Hallam, & Darling, (2012,p. 1514), where in realisation and appreciation of what one already knows is strategized to apply the relevant skills to a particular situation (Mohan & Bharti, 2017).

This indicates that all digital leaders can be entrepreneurial depending on their situation and the context that can apply the relevant skills of what they have and know.

Metacognition Skills

This skills came about as an additional skills as mentioned by the MD of one of the investment companies. The respondent believed that leaders need to self-reflect on

their abilities and actions and self-assess to determine where further development is needed at all times. Only by carrying out these metacognitive skills do leaders know what they require, how to grow and understand why they need to develop accordingly. However this has to come from the leader.

According to Mawas et al. (2019), learning and personal development have to come from oneself, to advance oneself. Metacognition according to Mohan & Bharti (2017, p. 1514) has been defined to be “the awareness and management of one’s own thought”. Metacognitive skill has been defined to relate to being self-aware of oneself and what one is capable of learning (Veenman & Spaans, 2005). Metacognitive skills are considered to be highly independent and entail analysis tasks, planning, monitoring, checking and reflecting (Veenman & Spaans, 2005). Therefore according to Mewton et al.(2009), much self-reflection and self-awareness needs to occur, which entails knowing oneself, one’s strengths and areas of improvements and being open to others and not being judgmental.

This therefore confirms that leaders need to know themselves, and be aware of their strengths, weaknesses and capabilities to lead especially in a disruptive digital era. This is another skill that was not part of the Skills Strataplex and was mentioned to be an additional skill that should complement the skills on the Skills Strataplex as per the respondents.

Challenger Mind-set

A few leaders mentioned that leaders needed to change the way they think and have a different mind-set all together. This entails having a learning mind-set, to constantly learn, and grow to compete by being more innovative and competitive. Thinking differently and changing one’s mind-set is what all leaders need to engage in especially in this digital era. The only skill relating to thinking in the Strataplex is that of cognitive skills, however it relates more too cognitive capacities such as gathering, understanding and distributing information, and one’s ability to learning. The literature by Dweck (2012) supports this notion of leaders having an open, learning and growth mind-set which has been confirmed to allow growth to occur if adopted. This confirms that digital leaders need to have a growth mind-set to allow them to see things and think differently.

Social Skills

The other additional skill mentioned by a few leaders is that of social skills. These skills related to having people skills in terms of interacting with people, communicating, dealing with the emotional intelligence aspects, but overall the interpersonal skills one needs deal with employees, vendors, and customers. However looking at the skills Strataplex much of the skills fits in with that of Influencing/interpersonal skills that relates to the social and people skills. Hence social skills forms part of Influencing/Interpersonal skills on the Skills Strataplex. The literature by Riggio & Lee (2007) and Goleman (2000) confirm this along with T. Mumford et al.(2007).

b) Digital Leadership Skills

The understanding of digital leadership skills was asked from three perspectives. The first was to understand the digital leadership skills that South African leaders needed, which was based on interview question 9. The second perspective was which of the digital leadership skills mentioned in question 9 was most important, and thirdly interview question 11 was to understand which digital leadership skills was a key driver in digital transformation in the respondents organisation.

i) The Digital Leadership Skills South African Leaders Need

The objective of interview question 9 was to understand what digital leadership skills South African leaders need to ensure successful digital transformation.

There were many proposed digital leadership skills that leaders need for successful digital transformation. However, the main skills are listed as per Table 13 in Chapter 5 by the leaders. The table also indicates two skills that the leaders mentioned were due to the South African context of the skill that digital leaders in South Africa would need. The section below will only discuss the top 5 skills.

Understanding Technology

This skill was the highest rated on Table 13. Many of the respondents mentioned that digital leaders need to understand technology, and that this is a key requirement for digital leadership. Most respondents mentioned that leaders need some sort of expertise or at least a good understanding of technology, leaders need to be digitally savvy and understand technology and need to understand the context of the situation before setting strategies or becoming visionary leaders.

This point has been confirmed by literature as in the other sections with G. C. Kane (2019), stating that leaders do not need to be technically proficient, but rather just understand and be able to apply the leadership and technical skills they have. A few respondents also built on this stating that leaders should hire the right people who have the skills they need if they do not have the skills, thereby ensuring they have the right people with the right skill working for them. G. C. Kane, Palmer, Phillips, & Kiron (2015) who confirm, hiring the right talent is key to digital transformation as organisations need digitally-savvy employees. This indicated that digital leaders must have some sort of understanding of technology to lead.

The 4 Key Skills

Many of the respondents believed that digital leaders needed all four of the skills from the Skills Strataplex as a leader cannot drive digital transformation without strategic skills of having a vision, influencing skills to influence and interact with various stakeholders, cognitive skills to be able to carry out the whole plan and the business understanding and acumen to know how to implement digital transformation in their organisation. The literature by T. Mumford et al. (2007) confirms that the alignment of these skills with what the respondents mention as has been discussed in the previous section relating to these skills, thereby indicating that these four skills are required by digital leaders.

Seeing the bigger picture

The respondents also mentioned that digital leaders need to have the ability to see the bigger picture and how things fit together. The head of digital of one organisation mentions that, irrespective of if one is an IT leader or a digital leader, one needs to know how things fit together. The concept of seeing the bigger picture relates to having a vision to see as leaders the whole picture. The literature on vision has been covered by the relevant scholars, G. C. Kane et al., 2015 and others in the preceding sections indicating that digital leaders need a vision which allows them to see the big picture of where they need to take their organisation too. This indicated that digital leaders need to see the bigger picture by having a vision of what they want to achieve or set out to achieve.

Being Adaptable

Many respondents mentioned that a digital leader needs to be situationally aware, embrace the changes coming their way and ensure they understand the environment they working in to make better decisions.

Other skills mentioned by these and other scholars in the literature are that digital leaders need to be flexible and adaptable to their circumstances and comfortable with constant change and unpredictability, they must listen to their surroundings and understand their environment, and be able to influence (Goethals et al., 2003); G. C. Kane et al., 2015); and (G. C. Kane, 2016). This literature and the findings of adaptive leadership confirm that leaders need to be adaptive to the environment they operate in and need to adjust accordingly. Hence indicating that digital leaders need to be adaptable.

Communicate

A few respondents mentioned that a leader needs to be able to problem solve, and not just speak but be able to communicate their vision execute their solution too. The literature confirms that communication is an important interpersonal skill in today's global business environment according to Robles, (2012) as in a digital economy leaders need to communicate their leadership agenda's to their customers, employee and partners to maintain them and keep them informed. Leaders therefore need to have good influencing skills as they have to continuously influence, listen and persuade when they are communicating as mentioned by Williams(2001). This confirms that digital leaders need to communicate well especially if they want to relay their vision and digital agenda's to get the correct message through.

Mind-set

A critical point mentioned by various respondents in the findings and in different contexts was the importance of having a growth mind-set to see things differently, a learner mind-set to be open to constant learning, open mind-set so as to be open to constant change or a mind-set shift overall. According to literature, G. C. Kane et al. (2015) state that digital leaders need to understand their businesses and have a strategy or vision for where they want to take their organisations which relates to having a change-orientated mind-set. Dweck (2012) further argues that one's mind-set changes the way one perceives things. A growth mind-set, allows one to expand and persevere when things are tough, enabling one to thrive in the most challenging

times (Dweck, 2012). This confirms having a growth mind or shift in mind-set is key to digital leaders.

Passion

The respondents also mentioned that leaders need passion for what they are doing, as without passion digital transformation will not be approached with the necessary enthusiasm and perspective. This is confirmed by the literature as it suggests that digital leaders must be able to see things from various angles, be truly passionate about what they do, and have a means to learn what they do not know yet (Goethals et al., 2003). Hence indicating that digital leaders are passionate about what they do.

The list of skills mentioned by the respondents of what digital leadership skills South African leaders need is quite large, however the skills discussed were the main skills that were more highly ranked. There were a few leaders who did mention a skill that was relevant to the South African context that was relevant for digital transformation but it was not that highly ranked. This was that digital leaders need to be bold and brave as in some organisations senior leaders are not open to change and as a leader one has to be bold and brave to stand up for one's beliefs. This came up in the section of the digital leadership skills South African leaders. Literature by Silver, (2018) who state that leaders need to be brave in all that they do and bold due to their well thought out risk approach. The other skill was that leaders must stand up for what they believe and be brave to carry it out even when it becomes difficult to do so. The literature indicates that assertiveness is seen to occur when one's behaviour is not aligned to the goals of the situation and other people who are interdependent on these goals as well. This then results in a judgment of the behaviour as it is not aligned to that of others (Ames et al., 2017). Assertiveness is caused as per Ames, Lee, & Wazlawek, (2017) due to our own personal motivations and the value attached to getting our way or doing what needs to be done. This clearly relates to when a leader has to stand up for what one believes. This indicates that digital leaders in South Africa due to their context of having to still be digital laggards as per Schwab (2018), need to be bold and brave, and assertive leaders who stand up for what needs to be achieved regardless of the obstacles and difficulties they must face.

Overall this skillset has been conclusive with the findings and the literature indicating digital leaders need these key skills.

ii)The Most important Digital Leadership Skills

The objective of this question which related to interview question 10 was for leaders to state what they considered to be the most important digital leadership skills based on the list of skills mentioned in interview question 9. The skills mentioned by the respondents were quite similar to the skills mentioned as those that a South African leader needs, and the respondents could not all provide one important skill but rather listed several. The skills are listed in Table 15 in Chapter 5, however not all the skills will be re-discussed as all these skills have been discussed in the preceding sections under digital leadership skills or leadership skills earlier.

As can be seen in Table 14 the respondents regarded influencing skills, strategic skills and understanding technology and infrastructure as the 3 most important skills. Having a different mind-set was also quite highly ranked by the respondents. The ranking of the skills in this list is slightly different to that of Table 13 which lists the Digital leadership skills that South African leader's need, where understanding technology was listed first, following by influencing skills. However in this list, a new skill that come about was that of leaders having resilience. Resilience was mentioned by three respondents as they believed that to carry out successful digital transformation one has to be quite resilient to the disruptive environment one works in and has to adapt to the changes. Resilience is a key skill of adaptive leadership, as mentioned in the literature by Härtel & Roux (2018). They also state that in a bid to develop effective leadership, key areas of attention are resilience, openness, adaptability, collaboration, and meaningful networks Härtel & Roux (2018). This therefore indicates that the respondents believed it was quite important for digital leaders to be resilient due to the environment of a digital era.

Being a visionary leader and learning from failure was mentioned again by the respondents as being important. Being assertive and standing up for one's believes was a mentioned again as it was in Table 13, as leaders believed to ensure successful digital transformation you have to be assertive and say no when things cannot be done, and stand up for your believes as not everyone will support you in what you want to achieve.

Overall all the skills regarded as being important by the respondents have been confirmed by literature indicating the skills digital leaders need.

iii) The Key Digital Leadership Skill in your Organisation

The objective of this section was to understand, based on question 10 of the interview guide, what the skills were that the respondents used in their organisations to ensure successful digital transformation. The results of the skills mentioned is seen in Table 14 in chapter 5. A large range of skills have been mentioned, however the top 5 skills here were that respondents used Business Skills the most, followed by strategic skills, influencing skills, leaders had to understand technology in implementing the transformation and communication skills was used as well.

Being assertive and standing up for one's beliefs was mentioned again by two respondents and being resilient and bold was mentioned by only one respondent in each case.

Therefore the literature with regards to these skills confirm the respondents understanding of the digital leadership skills needed by South African leaders with special mention of additional skills being those of standing up for your beliefs/being assertive, and being resilient and bold. The findings are conclusive as they relate to the literature already discussed.

6.5.3 Conclusive findings in answering Research Question 4

Research Question 4 (RQ4): What is leadership's understanding of digital leadership and what digital leadership skills are needed for successful digital transformation by South African leaders?

It has become clear that most leaders see digital leadership as being different from traditional leadership. However, there is a strong suggestion that digital leadership should become the norm of leadership in this digital age. It has also been confirmed that digital leaders have to have an affinity to technology and need new skills and knowledge to deal with new and different environments that are constantly changing and which are disruptive. These digital leaders therefore need to be open and transparent in all that they do. Digital leaders need to be at the forefront of technology

and, as a result of this, they need to collaborate across functions, constantly learn, and keep up to date by learning from their peers, competitors, and employees. Even though they are said to lead from the front, they need to allow their people to take the lead at times, as they will not always have all the answers. Digital leaders are also said to adjust according to the times and the context of the situation, and are therefore considered contextual leaders.

Therefore the skills that a digital leader would need for successful digital transformation were looked at from the Skills Strataplex perspective and respondents were asked to list the digital leadership skills along the three categories of 1) The digital leadership skills that South African leaders need, 2) investigating which skills are the most important of these, and 3) determining which skills were used by these leaders in their organisations when implementing digital transformation. The listing of the skills was very similar for all three categories, with just the order of importance changing across the three questions. Some unique skills were mentioned and some common themed skills emerged.

In analysing the top skills to determine the digital leadership skills that South African leaders need for successful digital transformation, a final list of skills that does come up is based on the core skills that were always mentioned in all 3 categories and those with a high frequency count. Also included were the unique skills that was mentioned by the respondents which related due to a South African perspective created a list of skills as listed below?

- Influencing Skills
- Strategic Skills
- Business Skills
- Cognitive Skills
- Entrepreneurial Skills and Mind-set
- Mind-set Change/Shift
- Metacognitive Skills
- Understanding Technology
- Learning from Failure/Being Prepared to Fail
- Being Assertive(Stand up for your beliefs)/Bold & Brave/Resilient
- Challenger Mind-set

6.6 Discussion of Results for Research Question 5

Research Question 5 (RQ5): How are leaders acquiring digital leadership skills and keeping these skills up to date?

This section relates to interview question 12 of the interview guide, and comprises two parts that make up this RQ: how leaders acquire the digital leadership skills, and how are the leaders keeping these skills up to date. The objective of this research question was to understand from the respondents how are they acquiring and maintaining their digital leadership skills so other leaders may learn from them.

6.6.1 How are leaders acquiring digital leadership skills

Respondents have mentioned that the way they have been acquiring skills has been due to the learning culture that is being driven in their organisations where leadership is upskilled based on the goals and journey of the organisation. Some organisation have online learning portals, innovation centres or courses offered at various locations. Some respondents mentioned being sent on executive business school courses for course. Many respondents mentioned doing online courses on social media platforms or well-known learning academies online. A few leaders also mentioned abiding by the 1 hour rule which meant reading literature, articles, latest market news on social media sites, relating to the latest trends in the industry and world to keep abreast with what is happening. Many leaders mentioned that it is important to collaborate with other companies, and competitors to learn from them first hand and share knowledge and add value. As well as collaborating with universities also tapping into the talent coming out of universities to stay updated and informed in the digital transformation age.

According to Westerman et al. (2019) and Schwarzmüller et al., (2018), collaboration enables organisations and people to share their knowledge, work across silos, and develop cross-functional teams. A Unique mention by one respondent was that acquiring talent by scanning the market and hiring the right talent is another option, so that future talent can be groomed in the process. However a key mention by many respondents was that self-development and personal drive are key to growing and learning, but skills are being acquired by individuals taking an interest in themselves

and developing themselves through personal research, understanding where they, as leaders, need to be developed, and then deciding how to develop themselves.

In terms of personal development, the literature by Mawas et al. (2019) states that learning and personal development have to come from oneself to advance oneself in order to achieve success. According to this same source (Mawas et al., 2019), individuals need to ensure lifelong learning by developing key 21st century skills which entail being digitally literate, thinking critically, communication, being creative, and being able to problem solve in order to be able to identify the learning activities they have to undertake in order to improve their knowledge and skills.

Further findings suggest that a leadership learning culture and drive in an organisation enforces this skills acquisition. Attending conferences and surrounding oneself with like-minded people, reading a lot, and doing a lot of research are all ways to acquire skills. Having a learner mind-set is key, as this helps one be open to what is out there. Leaders are collaborating with and learning from their competitors and other organisations to gain a better understanding, and are also acquiring talent where relevant to boost the organisation in terms of getting skillsets that others can learn from and grow.

As per the literature, there are various ways in which leaders can keep their skills up to date. There are the traditional methods such as universities, business schools where leadership attend executive programs to broaden their perspectives “such as at Harvard, MIT, Stanford, and SIM’s Regional Leadership Forum” (Kappelman et al., 2016, p. 70), and specialised training companies and consultancies. However, many executives have indicated that they do not apply everything they learn in classroom environments (Moldoveanu & Narayandas, 2019).

Moldoveanu & Narayandas (2019) further identifies blended learning, which entails facilitators customising or personalising individual learning programmes, as becoming quite the norm, especially in leadership development programs. However, not all participants will learn using this approach, and so online training and face-to-face interaction is used. Blended learning also allows leaders to network and connect while still learning (Moldoveanu & Narayandas, 2019). According to Hilliard (2015),

tertiary institutions need to upskill their students in technology and problem-solving skills, as those are the skills required in the global work environment.

In terms of online courses and learning through in-house portals, literature indicates that the emergence of Personal Learning Cloud (PLC) is another means that allows organisations to select the modules they need and personalise them for the training of individuals and teams. The use of PLC allows access to various massive open online courses (MOOCs), and other platforms such as LinkedIn Learning, Salesforce Trailhead, Skillsoft, and so on, allowing quick, certifiable core skills in an interactive, on-demand, solution-centric environment (Moldoveanu & Narayandas, 2019).

The research findings clearly collaborate with that of the literature and confirm the various ways leaders acquire digital leadership skills. Collaboration has been emphasised by the respondents and seen in the literature as being key as it allows leaders to learn from each other, other teams, organisations, and competitors and is highlighted as a skill also mentioned in the other interview findings. Another vital point made is that regardless of the various ways to acquire the skills, the initial step starts with the leader, who has to realise that the awareness and need starts with them.

6.6.2 How are leaders Keeping these Digital Leadership Skills up to Date

In terms of how leaders are keeping their skills up to date, many of the respondents mentioned similar approaches as those of how leaders acquire their digital leadership skills. Respondents mentioned doing online courses, collaborating with other corporates, attending courses at business school and the same approach mentioned in how digital leaders acquire these skills.

However respondents also mentioned attending forums relevant to their areas, attending local and international conferences, aligning to like-minded people, practicing innovation in their organisation regularly in the work they do, and working with universities or attending courses at top universities. Many respondents also mentioned doing specific courses relating to changing one's thinking, and keeping one's ear to the ground. However leaders mentioned again that personal development starts from the individual, and there must be a willingness, and drive to learn.

Much of the literature echoes that of how leaders acquire digital leadership skills, however, on the point of leaders aligning with like-minded people or attending forums related to new industry trends and getting personal coaches this was an additional finding from the respondents. Kappelman, Jones, Johnson, Mclean, & Boonme (2016) state that for leaders to acquire mentors, more senior leaders than themselves, or external professional coaches through networks or professional associations to help leaders practice and learn their relevant skills and help them at key phases of their career, this is important for leaders to gain direction from.

This therefore indicates that digital leaders need to align with individuals who can guide them and they can learn from, similarly in attending forums to learn from, so they are guided in their objectives.

6.6.3 Conclusive findings of Research Question 5

Research Question 5 (RQ5): How are leaders acquiring digital leadership skills and keeping these skills up to date?

This question has been satisfactorily answered, and most of the literature and findings correlating indicating that the leaders are using the various means available for acquiring and developing their skills.

In summary, leaders can acquire and keep their digital skills up to date using a wide variety of technological and traditional means that are either available online, within organisations, at tertiary level or professional institute level. However in employing the correct approach to develop one's skills, it has been confirmed that this initial realisation and awareness needs to come from the leader's own need of wanting to develop and grow further. Hence the leaders' self-development which starts from within where one has to recognise, understand and grow oneself accordingly.

Another key mention is the concept of collaboration. Leaders need to collaborate within their organisation and with other organisation, as this allows for knowledge sharing, learning and development as well. Collaboration with universities also allows leaders to stay abreast of the latest research at these institutions and giving back so as to ensure future talent have the required capabilities.

Hence the approach chosen to acquire and maintain these skills has to start from within the leader, and rely on the self-awareness and self-development needs of the leader so as to understand and develop oneself accordingly.

6.7 Conclusion

The overall objective of this chapter was to determine if the findings from the study matched the literature, and if each of the research questions posed in Chapter 3 were answered.

The findings for each of the research questions was compared and contrasted to the literature resulting in all findings being conclusive and all five research questions being answered.

In terms of research question 1, the objective was to gauge leaderships understanding of digital transformation, and this was clearly articulated and understood by the respondents, confirming that South African leaders understand digital transformation and the kind of leader required. There was special emphasis placed on the importance and role of people, confirming that people, especially leadership are an important part of digital transformation.

In terms of research question 2, this related to understanding the factors that contributed to successful digital transformation based on the leaders own implementations, and the respondents once again confirmed their understanding of the various factors that impact successful digital transformation, thereby answering this research question. There were once again a few additional factors that the leaders confirmed were quite important such as people, culture and that leaders need to learn from failure and understand technology.

In terms of research question 3 the objective was to understand the importance of leadership and if adaptive leadership was relevant for digital transformation. The role of leadership was confirmed to be critical as without leadership buy-in and support success was not guaranteed. The relevance of adaptive leadership was confirmed as crucial and the skills that were relevant were identified. It was also seen that the

adaptive leadership characteristics aligned closely to those of a digital leader as well. Hence this research question confirmed the importance of leadership.

With regards to research question 4, the objective was to understand what digital leadership was and gauge the relevant digital leadership skills. The understanding of digital leadership was confirmed to be different for digital leadership but that all leaders need to be digital leaders. The skills that emerged were many however the important skills were highlighted as well as skills relating to being resilient, brave and bold and assertive from the context of South African implementations was highlighted.

Finally research question 5 explored the means in which these digital leadership skills could be acquired and kept up to date, illustrating various technological, and traditional means could be used. However the overall understanding of the kind of development required all resides with the leaders' self-awareness and need to want to develop themselves further.

In answering all the research questions what has culminated has been a list of the digital leadership skills that South African leaders need for successful digital transformation and the type of leaders required.

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

In an age where technology is advancing so rapidly and digital transformation is occurring all around us and at all times, organisations and their leaders are finding themselves at the point of either choosing to either cross the chasm of digital transformation or risk being left behind and disintegrating from the race (Fitzgerald et al., 2013). Customers, products, and services are demanding the benefits of digitalisation (Loonam, Eaves, Kumar, and Parry, 2018) and (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013), and many leaders of organisations are realising the importance of the new technologies of digital transformation and the impact on their organisations if they do not transform (Singh & Hess, 2017);(Fitzgerald et al. 2013); Westerman et al. (2014); and Kohnke (2018).However, to lead in this continuously disruptive time, leadership cannot continue in this digital age to make decisions using the current leadership skills (Uhl-Bien, Marion, & McKelvey, 2007), but require digital leadership skills to provide direction and steer their organisations to stay ahead of the continuous digital disruption occurring all around them.

As a result, the main purpose of this research was to understand the key digital leadership skills that South African leaders require to ensure successful digital transformation, determine the kind of leader one needs to be, and investigate how a leader can go about acquiring and maintaining these digital leadership skills. The Adaptive Digital Leadership Skills Model has therefore been developed to help leaders understand the general skills and type of leader required to carry out successful digital transformation in their organisations. The chapter concludes with recommendations to management and other stakeholders, limitations of the research, and areas for further research.

7.2 Principal Findings

In answering the five research questions, it was illustrated by the findings of this research that South African leaders understand digital transformation and digital leadership, and are aligned with the literature on the factors that contribute to successful digital transformation. The importance of leadership in digital transformation was reaffirmed as vital, and the leaders have confirmed the relevance of adaptive leadership in successful digital transformation as being crucial. Most

leaders confirmed the equal importance of four key traditional leadership skills and additional digital leadership skills that are required for successful digital transformation.

The Adaptive Digital Leadership Skills model will be discussed in the section below in terms of how it was created. This model originated from the original Digital Leadership Skills Framework developed through the findings from the literature review in Chapter 2. Thereafter the findings from Chapter 5 and Chapter 6 contributed more components to the model, from the perspective of what South African leaders considered and ranked was relevant skills for the implementation of successful digital transformation in their organisation

a) The Adaptive Digital Leadership Skills Model and how it Came About

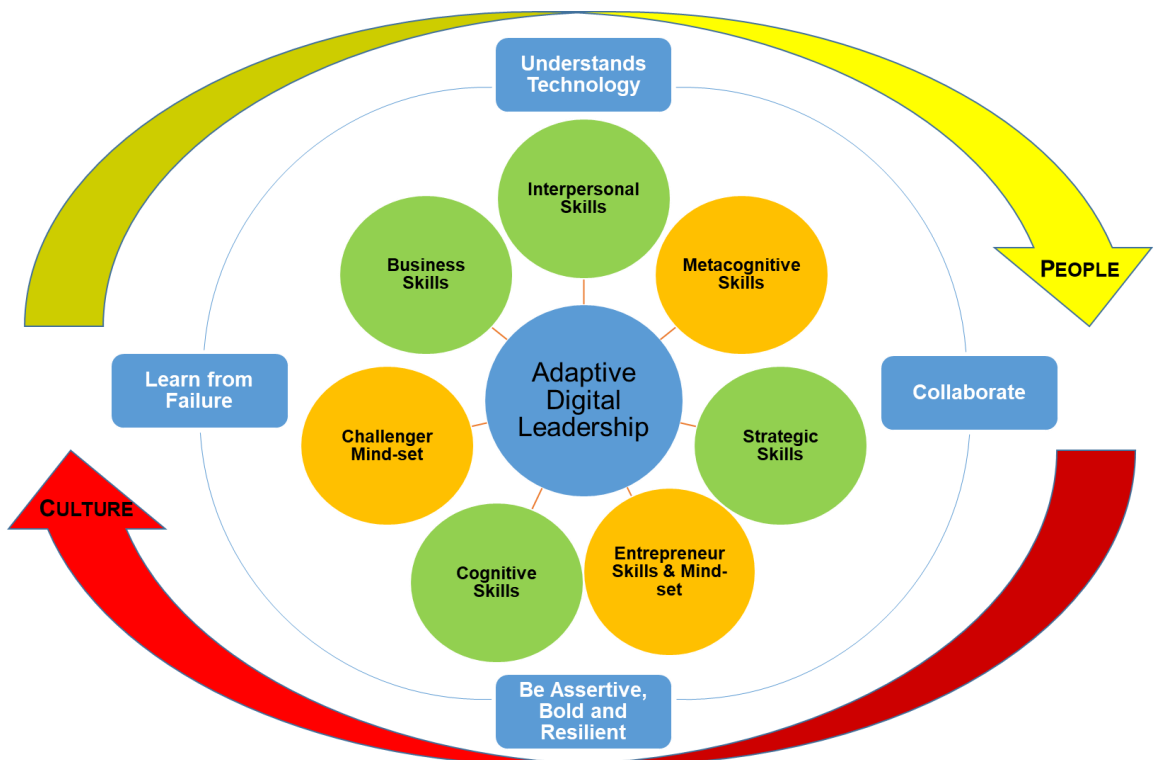


Figure 5: Adaptive Digital Leadership Skills Model

The Adaptive Digital Leadership Skills model was derived from the Digital Leadership Skills Model that was created in Chapter 2 based on the literature review conducted. Considering the environment of digital transformation being volatile, uncertain, complex, ambiguous, and with constant disruption, leaders have to adapt and be flexible to the constant changing environment leaders need to lead in. As per the findings in Chapters 5 and 6, the role of leadership is considered critical to successful digital transformation. Adaptive leadership has also been confirmed by the leaders of the study as crucial to successful digital transformation, and the similarities between adaptive leadership characteristics and the characteristics of a leader for successful digital transformation (depicted in Table 5 in Chapter 5), indicate that digital leaders are adaptive leaders who need to adapt to the constant changing environment, and adjust to the context of the situation they deal with. Thus, digital leaders can also be called adaptive digital leaders, resulting in an adaptive digital leader being the core of the Adaptive Digital Leadership Skills Model.

In the literature review in Chapter 2 it is indicated that there are four key traditional leadership skills that all leaders require, according to the decades of studies done on skills, which resulted in the Skills Strataplex for leaders by T. Mumford et al.(2007) . These skills were reaffirmed by South African digital leaders during the study, indicating that all four skills are required equally as these skills cannot operate independently to ensure successful digital transformation. The skills were understood in Chapter 5 as:

- Cognitive skills, which relate to skills of thinking, decision making, learning, and analysis.
- Business skills, which relate to having financial and business acumen, understanding business drivers for product, service, and customer, and understanding business operations.
- Influencing skills, which relate to communicating your vision, influencing others to see your perspective, following your directive, and people skills.
- Strategic skills, which relate to foresight, future thinking, having a strategy, and having a vision.

When determining if these four traditional skills were relevant for successful digital transformation, an additional three skills were identified by the digital leaders as being relevant to digital transformation. These are:

- i) Entrepreneurial skills and mind-set, which relate to applying an entrepreneurial perspective to digitalisation to be more creative, think differently, and look for opportunity.
- ii) Challenger mentality, which involves changing one's mind-set to be more open minded, having a growth and learner mind-set, and ensuring there is a mind-set shift to constantly grow, learn, innovate, and challenge.
- iii) Metacognition skills, which relate to self-reflection and self-development, requiring leaders to constantly self-reflect, learn and develop themselves. This ties in with digital leaders having to constantly keep their skills up to date to lead in the digital age.

These skills have been added to the four key skills to show the new skills required over and above the traditional skills shown.

Social skills and people skills were also identified; however, these skills form part of interpersonal/influencing skills, which also incorporates the emotional intelligence skills aspect, as per the Skills Strataplex model. As stipulated by T. Mumford et al. (2007), interpersonal skills relate to skills of interacting and influencing others. Interpersonal skills, as stated by Riggio & Lee (2007), are also known as people skills and include the emotional intelligence (EI) aspect of connecting with others at an emotional level.

In addition to the key traditional skills needed by digital leaders as per the Skills Strataplex, the findings of Chapters 5 and 6 also indicated the digital leadership skills that South African leaders are required to have for successful digital transformation based on what was rated important and used in their organisations, according to the leaders who were interviewed. These skills are:

- i) A leader who understands technology. This is a leader who is not necessarily a technical guru, but who has a good understanding of the basics of the existing and new technologies.
- ii) A leaders who is not afraid to fail and who learns from failure. These are leaders who create environments to experiment and fail in.

iii) A leader who is bold and brave, resilient and assertive or stands up for himself/herself. This is a leader who has to stand up for their beliefs and their vision to be delivered and endure all that comes their way.

iv). A leader who has a mind-set shift/learner mind-set/growth mind-set to deal with constant disruption of digital transformation. These mind-set shift aspects will form part of the challenger mentality/mind-set skills of the model as many of the mind-set skills are covered there.

In terms of acquiring new skills and keeping them up to date many of the leaders confirmed that collaboration skills were important, be it with peers, competitors, or other companies. There has also been much mention in understanding the digital leadership skills that leaders need that digital leaders need to collaborate across silo's, cross functionally and cannot work in verticals anymore. Hence collaboration is seen as being important for a leader to carry out successful digital transformation.

In addition to maintaining and acquiring digital leadership skills, a key point was that leaders need to be self-aware, need to self-reflect and engage in their own self-development. These skills form part of the core skills of metacognition that were mentioned earlier which is a skill identified to be part of the Adaptive Digital Leadership Skills model.

The findings also brought about two additional themes that were identified as important, namely the role of people/talent in the organisation, as leaders need the right people to help them with digital transformation (G. C. Kane, Palmer, Phillips, Kiron, et al., 2015a), and the fact that the behaviours of the leader have an impact on people and create the culture of the organisation (G. C. Kane, Palmer, Phillips, Kiron, et al., 2015a). Culture has been regarded as a key tool of a leader as they cannot be part of every decision taking place in the organisation. However by ensuring that people understand the goals and priorities of the organisation, the leaders can enable and empower their people to make the right decision without leadership intervention (Christensen, 2006). This illustrates, as per the model, that people impact culture and culture impacts people, and that they are both affected by the behaviours and skills of the digital adaptive leader.

7.3 Implications for Management and other Stakeholders Impacted by Digital transformation

The study indicated that leaders cannot continue to use their traditional leadership skills to make decisions, they do need digital leadership skills to lead and compete in this disruptive era. South African leaders are considered laggards in digital transformation and need to acquire the right skills, as this will impact the culture and people of the organisation in terms of moving forward and adapting to the constant technological changes, in order to be more efficient in delivering products and services to customers. Managers and other stakeholders therefore need to use the findings of this research in the following ways:

- Management can use this research as a guideline in organisations where they are struggling to carry out successful digital transformation or where they still conform to traditional leadership ways, to understand the skills needed and the kind of leader they need to be, thereby enhancing their skills and capabilities to become more effective digital leaders.
- Management can use the contents of the research to help them recruit digital leaders and the right talent to grow into future digital leaders in their organisations, thereby enhancing the talent and creating a culture of the type of people and thinking they want to drive their organisation.
- Management can enhance the culture and thinking of their people and organisation by allowing their people to attend courses of the skills listed in this study, so as to empower their people to think differently, develop a growth and challenger mind-set, and think outside the box.
- The Department of Trade and Industry can use the skills and factors identified in the research to address skills development in order to grow organisations that need to embark on the digital transformation path and, together with the Department of Education, work on developing these skills at tertiary institution levels.
- HR can use the results from this research to train existing leadership, hire new talent, or upskill their existing talent base on the skillsets set out. Hiring can take into account the kind of leader required to carry out successful digital transformation.
- Unions can approach this in a similar way, in that with digital transformation many organisation's are automating their operations, resulting in

organisation's cutting down on people. However, this research can assist the unions to understand the skills required and how these skills can be acquired so that leadership and employees can be upskilled to stay ahead in this disruptive world we live in.

7.4 Limitations of the Research

The following limitations were noted for the research:

- The interviewer was not expertly trained in conducting interviews and this could have an impact on the results of the data collected.
- The research was done mainly in the Johannesburg area with limited respondents from other areas outside of Johannesburg. Therefore geographic bias could apply.
- The research was limited to senior leaders who were involved in digital transformation in their organisations, and not opened to leaders in lower levels who are involved in other aspects of digital transformation.
- The research was limited to a small sample group of only 17 respondents from nine industries – not all industries in South African were covered.

7.5 Suggestions for Future Research

The following suggestions are put forward in terms of areas for future research:

- As this research was done qualitatively to understand the skills that South African digital leaders require, the research can be done quantitatively to cover a larger sample group across more industries to confirm the outcomes and cover the same level of leaders.
- It would be interesting to understand the perspectives of other management levels, such as middle managers or general managers, on what the skills are that they require for successful digital transformation.
- It would be interesting to understand how the new generations, namely millennials, and others entering the work environment would lead organisations to ensure successful digital transformation and how they would maintain a competitive advantage.
- Whether failure and experimentation in organisations are motivators or inhibitors to leadership's abilities to lead digital disruption effectively in

emerging markets under pressure to compete in tight financial and economic conditions.

- It could also be explored how organisations in an emerging market like South Africa allow digital transformation to be successful and to compete with global counterparts in industries that are highly unionised.

7.6 Conclusion

This research has indicated that digital transformation is not about technology alone but that a key aspect is leadership and skills that need to adapt to the times and the context in which they operate and lead in. The literature has indicated that leaders need to be adaptive to the disruptive changes happening all around them but still need some of the traditional leadership skills like cognitive skills, business skills, interpersonal/influencing skills, and strategic skills for carrying out successful digital transformation. The research set out to fill the gap in understanding the digital leadership skills leaders require for successful digital transformation from leadership, skills, and digital transformation perspectives. The findings that emerged from the interviews with 17 leaders indicated that, over and above the four key skills mentioned by the Skills Strataplex, leaders required an additional seven digital leadership skills, they need to be an adaptive digital leader, and that people and culture are key contributors to the successful digital transformation, thus resulting in the creation of the Adaptive Digital Leadership Skills Model.

Hence the significance of this study from a theoretical perspective has been its contribution to literature on the digital leadership skills needed by leaders, as well as the type of leader one has to be to ensure successful digital transformation. This was achieved through the empirical research conducted during this study, confirming the digital leadership skills needed by South African leaders for successful digital transformation. Furthermore it is hoped that this research will contribute to the practice of management through the application of the 'Adaptive Digital Leadership Skills Model' by leaders, management, corporates, unions, and government institutions who are seeking to understand which skills are required to carry out successful digital transformation in their organisation, which skills organisations can look out for when hiring people to carry out digitalisation, and how leaders and employees can go about acquiring these skills and keeping them up to date, as this starts with the leader and their own interest in self-development.

REFERENCE LIST

- Ames, D., Lee, A., & Wazlawek, A. (2017). Interpersonal assertiveness : Inside the balancing act. *Wiley*, (March), 1–17. <https://doi.org/10.1111/spc3.12317>
- Bennis, W. (2013). Leadership in a digital world: Embracing transparency and adaptive capacity. *MIS Quarterly: Management Information Systems*, 37(2), 635–636.
- Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). *DIGITAL BUSINESS STRATEGY: TOWARD A NEXT GENERATION OF INSIGHTS* 37(2), 471-482. Retrieved from <http://content.ebscohost.com/ContentServer.asp?T=P&P=AN&K=87371552&S=R&D=bth&EbscoContent=dGJyMMvI7ESeqa84wtvhOLCmr1CeprVSrqa4S6%2BWxWXS&ContentCustomer=dGJyMPGnr0q2rLBLuePfgeyx44Dt6fIA>
- Böck, V., & Lange, M. S. (2018). *Employees' Perception of Effective Leadership in Digitalisation (Masters Thesis Jönköping University, Jönköping, Sweden)*. Retrieved from <http://www.diva-portal.org/smash/get/diva2:1210230/FULLTEXT01.pdf>
- Braun, V., & Clarke, V. (2006). Qualitative Research in Psychology, 77–101.
- Breuer, S., & Szillat, P. D. (2019). Leadership and digitalization: Contemporary approaches towards leading in the modern day workplace. *Electronic magazine "Dialogue"*, (1), 24-36 .
- Bughin, J., & Van Zeebroeck, N. (2017). The Best Response to Digital Disruption. *MIT Sloan Management Review*, 58(4), 80–86.
- BusinessTech. (2018). *South African CEOs are struggling to find digital skills*. Retrieved May 25, 2019, from <https://businesstech.co.za/news/business/258889/south-african-ceos-are->

struggling-to-find-digital-skills/

Chirino-klevans, I. (2017). Virtual Reality in Global Business: Using Technology for Leadership Skills Development. *ISM Journal of International Business*, 11-15

Christensen, C. M. (2006). What is an Organization Culture? *Harvard Business Review*.

Harvard Business School Background Note 399-104. Revised 2006.

https://doi.org/10.1057/9780230250932_4

Creswell, J. W., Hanson, W. E., Clark Plano, V. L., & Morales, A. (2007).

Qualitative Research Designs: Selection and Implementation. *The Counseling Psychologist*, 35(2), 236–264. <https://doi.org/10.1177/0011000006287390>

Day, D. V. (2001). Leadership development : A review in context, *The Leadership Quarterly*, 11(4), 581-613.

Deloitte. (n.d.). *Rewriting the rules for the digital age 2017 Deloitte Global Human Capital Trends*. Retrieved from

<https://www2.deloitte.com/content/dam/Deloitte/us/Documents/human-capital/hc-2017-global-human-capital-trends-us.pdf>

Deloitte. (2017). Retrieved from www.deloitte.com

Dierendonck, D. Van. (2011). Servant leadership : A review and synthesis. *Journal of Management*, 37(4), 1228–1261.

<https://doi.org/10.1177/0149206310380462>

Doyle, A. (2016). Adaptive challenges require adaptive leaders. *Performance Improvement*, 18–27. <https://doi.org/10.1002/pfi>

Dubru, R. (2018). *Critical competencies of leaders in the digital transformation of banking in South Africa* (MBA Mini dissertation, University of Pretoria, Pretoria, South Africa). Retrieved from

<https://repository.up.ac.za/handle/2263/64841>

Dweck, C. (2012). *Mindset: Changing The Way You think To Fulfil Your Potential* -

Carol Dweck - Google Books [e-book]. Retrieved from

[https://books.google.co.za/books?hl=en&lr=&id=R0-](https://books.google.co.za/books?hl=en&lr=&id=R0-eBAAAQBAJ&oi=fnd&pg=PT4&dq=mindset+&ots=whhps1dNjp&sig=A3FI7Q-9tLSFD2tqf7wBV-uTdS4&redir_esc=y#v=onepage&q=mindset&f=false)

[eBAAAQBAJ&oi=fnd&pg=PT4&dq=mindset+&ots=whhps1dNjp&sig=A3FI7Q-](https://books.google.co.za/books?hl=en&lr=&id=R0-eBAAAQBAJ&oi=fnd&pg=PT4&dq=mindset+&ots=whhps1dNjp&sig=A3FI7Q-9tLSFD2tqf7wBV-uTdS4&redir_esc=y#v=onepage&q=mindset&f=false)

[9tLSFD2tqf7wBV-uTdS4&redir_esc=y#v=onepage&q=mindset&f=false](https://books.google.co.za/books?hl=en&lr=&id=R0-eBAAAQBAJ&oi=fnd&pg=PT4&dq=mindset+&ots=whhps1dNjp&sig=A3FI7Q-9tLSFD2tqf7wBV-uTdS4&redir_esc=y#v=onepage&q=mindset&f=false)

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *The*

Academy of Management Review, 14(4), 532.

<https://doi.org/10.2307/258557>

El Sawy, O. A., Amsinck, H., Kraemmergaard, P., & Vinther, A. (2016). How LEGO

Built the foundations and Enterprise Capabilities for Digital Leadership. *MIS*

Quarterly Executive, 15(2). Retrieved from

[http://content.ebscohost.com/ContentServer.asp?T=P&P=AN&K=115879197&](http://content.ebscohost.com/ContentServer.asp?T=P&P=AN&K=115879197&S=R&D=bth&EbscoContent=dGJyMNLe80SeprE4yNfsOLCmr1Gep7BSsKe4TbGWxWXS&ContentCustomer=dGJyMPGnr0q2rLBLuePfgeyx44Dt6fIA)

[S=R&D=bth&EbscoContent=dGJyMNLe80SeprE4yNfsOLCmr1Gep7BSsKe4T](http://content.ebscohost.com/ContentServer.asp?T=P&P=AN&K=115879197&S=R&D=bth&EbscoContent=dGJyMNLe80SeprE4yNfsOLCmr1Gep7BSsKe4TbGWxWXS&ContentCustomer=dGJyMPGnr0q2rLBLuePfgeyx44Dt6fIA)

[bGWxWXS&ContentCustomer=dGJyMPGnr0q2rLBLuePfgeyx44Dt6fIA](http://content.ebscohost.com/ContentServer.asp?T=P&P=AN&K=115879197&S=R&D=bth&EbscoContent=dGJyMNLe80SeprE4yNfsOLCmr1Gep7BSsKe4TbGWxWXS&ContentCustomer=dGJyMPGnr0q2rLBLuePfgeyx44Dt6fIA)

Fenech, R., Baguant, P., & Ivanov, D. (2019). The changing role of human

resource management in an era of digital transformation. *Journal of*

Management Information and Decision Science, 22(2), 176–180.

Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2013). *Embracing Digital*

Technology A New Strategic Imperative. Retrieved from

<http://sloanreview.mit.edu/faq/>

Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2013b). *Embracing Digital*

Technology A New Strategic Imperative. Retrieved from

<http://sloanreview.mit.edu/faq/>

Flick, U. (2013). Mapping the Field. In U, Flick (Ed)., *The SAGE Handbook of*

Qualitative Data Analysis (pp. 3-18). London, United Kingdom: SAGE

Publications.

<https://doi.org/10.4324/9781315690254>

Goethals, G. R., Sorenson, G., Burns, M., & Burns, J. M. (2003). LEADERSHIP IN THE DIGITAL AGE Ernest J. Wilson III To Appear in The Encyclopedia of Leadership. *The Encyclopedia of Leadership*, 1–5.

Goleman, D. (2000). Leadership That Gets Results *Harvard Business Review*, (March-April).

Golfasni, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4), 597–607. Retrieved from <http://www.news-medical.net/health/Thalassemia-Prevalence.aspx>

Graneheim, U. H., & Lundman, B. (n.d.). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*. 24(2), 105-112.

<https://doi.org/10.1016/j.nedt.2003.10.001>

Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>

Haffke, I., & Benlian, A. (2016). *The Role of the CIO and the CDO in an Organization's Digital Transformation*. Retrieved from <https://www.researchgate.net/publication/311653140>

Härtel, C., & Roux, M. (2018). The Cognitive, Emotional, and Behavioral Qualities Required for Leadership Assessment and Development in the New World of Work. *Emerald Insight*, 14, 59–69. Retrieved from <https://doi.org/10.1108/S1746-979120180000014010>

Hartl, E., & Hess, T. (2017). *The Role of Cultural Values for Digital Transformation : Insights from a Delphi Study Full Paper Abstract*. Retrieved from

- <https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1369&context=amcis2017>
- Hess, T., Benlian, A., Matt, C., & Wiesböck, F. (2016). Options for Formulating a Digital Transformation Strategy, *MIS Quarterly Executive*, 15(2), 123-139.
- Hilliard, A. T. (2015). Global Blended Learning Practices For Teaching And Learning, Leadership, And Professional Development. *Journal of International Education Research (JIER)*, 11(3), 179–188.
<https://doi.org/10.19030/jier.v11i3.9369>
- Holt, S., Marques, J., & Way, D. (2012). Bracing for the millennial workforce: Looking for ways to inspire Generation Y. *Journal of Leadership, Accountability and Ethics*, 9(6), 81.
- Horlacher, A., & Hess, T. (2016). What Does a Chief Digital Officer Do? Managerial Tasks and Roles of a New C-level Position in the Context of Digital Transformation. <https://doi.org/10.1109/HICSS.2016.634>
- Horlacher, A., Klarner, P., & Hess, T. (2016). Crossing Boundaries: Organization Design Parameters Surrounding CDOs and Their Digital Transformation Activities. 22nd *American Conference on Information Systems (AMCIS)*, (1988), 1–10. Retrieved from
<https://pdfs.semanticscholar.org/a623/ff3e690caea7fb6d5a014bd59220470f491>
- Horney, N., Pasmore, B., & O’Shea, T. (2010). Leadership Agility: A Business Imperative for a VUCA World. *People & Strategy*, 33(4), 32–38. Retrieved from
<https://luxorgroup.fr/coaching/wp-content/uploads/Leadership-agility-model.pdf>
<https://doi.org/10.1016/j.neuron.2011.07.001>
- Hussain, S. I., Alouini, M. S., & Hasna, M. O. (2012). A diversity compression and combining technique based on channel shortening for cooperative networks. *IEEE Transactions on Wireless Communications*, 11(2), 659–667.

- <https://doi.org/10.1109/TWC.2011.121911.101960>
- Iordanoglou, D. (2018). Future_Trends_in_Leadership_De.pdf. *Journal of Leadership, Accountability and Ethics*, 15(2), 118–119.
- <https://doi.org/10.33423/jlae.v15i2.648>
- ITWeb. (2018). SA lags on digital transformation | ITWeb. Retrieved January 19, 2019, from <https://www.itweb.co.za/content/WnpNgq2ALWgMVRGd>
- Kane, G. C. (2018). Common Traits of the Best Digital Leaders. *MIT Sloan Management Review. Big Idea: Digital Leadership - Blog*, 1–5. Retrieved from [https://sloanreview.mit.edu/article/common-traits-of-the-best-digital-leaders/?utm_source=newsletter&utm_medium=email&utm_content=Read the new article now »&utm_campaign=Enews DL 7/10/18](https://sloanreview.mit.edu/article/common-traits-of-the-best-digital-leaders/?utm_source=newsletter&utm_medium=email&utm_content=Read%20the%20new%20article%20now%20%26%26utm_campaign=Enews%20DL%207%2F10%2F18)
- Kane, G., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2018). Coming of Age Digitally. *MIT Sloan Management Review*. Retrieved from <https://sloanreview.mit.edu/projects/coming-of-age-digitally/#chapter-5>
- Kane, G. C. (2016). Do You Have the Will for Digital Transformation? *MIT Sloan Management Review*, 1–3. Retrieved from <https://sloanreview.mit.edu/article/do-you-have-the-will-for-digital-transformation/>
- Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2016). *Reframing the Organization for a Digital Future. Sloan Management ...* Retrieved from <http://search.proquest.com/openview/c5b4a735003320ae0e54bfd8e4665025/1?pq-origsite=gscholar&cbl=26142>
- Kane, G. C., Palmer, D., Phillips, A. N., & Kiron, D. (2015). Is Your Business Ready for a Digital Future? *MIT Sloan Management Review*, 56(4), 37–44.
- <https://doi.org/10.1016/J.GASTROHEP.2017.10.003>
- Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015a). *Becoming*

- a *Digitally Mature Enterprise*. Retrieved from <https://kityna.ga/146142.pdf>
- Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015b). Strategy, not Technology, Drives Digital Transformation. Retrieved January 5, 2019, from <https://sloanreview.mit.edu/projects/strategy-drives-digital-transformation/>
- Kappelman, L., Jones, M. C., Johnson, V., Mclean, E. R., & Boonme, K. (2016). Skills for success at different stages of an IT professional's career. *Communication of the ACM*, 59(8).
<https://doi.org/DOI:10.1145/2888391>
- Khan, S. (2016). *Leadership in the digital age: A study on the effects of digitalisation on top management leadership*. Retrieved from <http://www.diva-portal.org/smash/get/diva2:971518/FULLTEXT02>
- Kohnke, O. (2018). It's Not Just About Technology: The People Side of Digitization. In G. Oswald & M. Kleinemeier (Eds.), *Shaping the Digital Enterprise*. Cham: Springer Springer, 69–91.
https://doi.org/10.1007/978-3-319-40967-2_8
- Lane-Schmitz, T. (2012). *Leadership Vision : How to Train Leaders to Create and Communicate an Effective Vision Tar a Lane-Schmitz A Dissertation Submitted to the Faculty of The Chicago School of Professional Psychology In Partial Fulfillment of the Requirements For the Degree of.*
- Lane, K. E., McCormack, T. J., & Richardson, M. D. (2013). Resilient leaders: Essential for organizational innovation. *International Journal of Organizational Innovation*, 6(2), 7–25. Retrieved from www.ijoi-online.org
- Lawrence, K. (2013). *Developing Leaders in a VUCA Environment*. Retrieved from <http://laszlo-zsolnai.net/sites/default/files/3/documents/Reading 3 Developing-leaders-in-a-vuca-environment.pdf>
- Leffel, A., Hallam, C., & Darling, J. (2012). Enhancement of Entrepreneurial

- Leadership: A Case Focusing on a Model of Successful Conflict Management Skills. *Administrative Issues Journal*, 2(2), 13–25.
<https://doi.org/10.5929/2012.2.2.2.2>
- Lichtenstein, B. B., & Uhl-bien, M. (2006). Complexity leadership theory : An interactive perspective on leading in complex adaptive systems. *Emergence: Complexity and Organization*, 8(4), 2-12.
- Loonam, J., Eaves, S., Kumar, V., & Parry, G. (2018). Towards digital transformation: Lessons learned from traditional organizations. *Strategic Change*, 27(2), 101-109. EBSCOhost. Retrieved May 16, 2019, from <http://web.b.ebscohost.com.uplib.idm.oclc.org/ehost/pdfviewer/pdfviewer?vid=15&sid=e0c81241-c7ba-4386-9265-dd9c54099857%40pdc-v-sessmgr06>
- Lucas, H. C., & Goh, J. M. (2009). Disruptive technology: How Kodak missed the digital photography revolution. *The Journal of Strategic Information Systems*, 18(1), 46–55. <https://doi.org/10.1016/J.JSIS.2009.01.002>
- Matt, C., Hess, T., & Benlian, A. (2015). Digital Transformation Strategies. *Business & Information Systems Engineering*, 57(5), 339–343.
<https://doi.org/10.1007/s12599-015-0401-5>
- Mawas, N. El, & Muntean, C. H. (2019). *Supporting lifelong learning through development of 21st century skills*. Retrieved from http://www.newtonproject.eu/wp-content/uploads/2018/12/EDULEARN_2018_NEM.pdf
- Mewton, L., Ware, J., & Grantham, C. (2009). A question of leadership: Which skills and competencies will be most critical for leaders as the workplace continues to evolve? *Leadership in Action*, 29(5), 12–13. <https://doi.org/10.1002/lia.1305>
- Mihardjo, L. W. W., Sasmoko, S., Alamsjah, F., & Elidjen, E. (2019). Digital leadership role in developing business model innovation and customer

- experience orientation in industry 4.0. *Management Science Letters*, 9, 1749–1762. <https://doi.org/10.5267/j.msl.2019.6.015>
- Mohan, V., & Bharti, L. (2017). Effect of meta cognitive skills on entrepreneurial talent: A contextual study. *Indian Journal of Health & Wellbeing*, 8(12), 1514–1517. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=127255139&site=ehost-live>
- Moldoveanu, M., & Narayandas, D. (2019). The Future of Leadership Development. *Harvard Business Review*, 97(4), 40-48..
- Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). *Verification Strategies for Establishing Reliability and Validity in Qualitative Research. International Journal of Qualitative Methods* 1(2), 13-22. Retrieved from <https://journals.sagepub.com/doi/pdf/10.1177/160940690200100202>
- Mumford, M. D., Todd, E. M., Higgs, C., & McIntosh, T. (2017). Cognitive skills and leadership performance : The nine critical skills. *The Leadership Quarterly*, 28(1), 24–39. <https://doi.org/10.1016/j.leaqua.2016.10.012>
- Mumford, T., Campion, M. A., & Morgeson, F. P. (2007). The leadership skills strataplex: Leadership skill requirements across organizational levels. *Leadership Quarterly*, 18(2), 154–166. <https://doi.org/10.1016/j.leaqua.2007.01.005>
- Northouse, P. G. (2006). *Leadership: Theory and practice* (4th Ed.). Thousand Oaks, CA: SAGE Publications
- Oc, B. (2018). Contextual leadership : A systematic review of how contextual factors shape leadership and its outcomes. *The Leadership Quarterly*, 29(1), 218–235. <https://doi.org/10.1016/j.leaqua.2017.12.004>

- Osborn, R. N., Hunt, J. G., & Jauch, L. R. (2002). Toward a contextual theory of leadership. *Leadership Quarterly*, 13(6), 797–837.
[https://doi.org/10.1016/S1048-9843\(02\)00154-6](https://doi.org/10.1016/S1048-9843(02)00154-6)
- Osborn, R. N., & Marion, R. (2009). Contextual leadership , transformational leadership and the performance of international innovation seeking alliances .
The Leadership Quarterly, 20(2), 191–206.
<https://doi.org/10.1016/j.leaqua.2009.01.010>
- Owens, H. K. (2015). *Influencing accountability in organisations – a critical managerial competence* (Master's thesis, Gordon Institute of Business Science, University of Pretoria, Pretoria, South Africa). Retrieved from <https://pdfs.semanticscholar.org/4e60/f7b84a61200dfa1032922b950fe17016193.pdf>
- Parviainen, P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2017). SciKA - Association for Promotion and Dissemination of Scientific Knowledge. *International Journal of Information Systems and Project Management*, 5(1), 63–76.
- Price waterhouseCoopers. (2018). *South Africa falling behind with digital transformation*. Retrieved January 21, 2019, from <https://www.pwc.co.za/en/press-room/south-africa-falling-behind-with-digital-transformation.html>
- Provost, M., Allan Johnston, K., Tanner, M. C., & Allan, K. (2018). *Awareness and Preparedness of IT managers to digital disruption: A South African Exploratory Case Study*. *The African Journal of Information Systems*, 10(4), 280..
Retrieved from <https://digitalcommons.kennesaw.edu/ajis> Available at: <https://digitalcommons.kennesaw.edu/ajis/vol10/iss4/2>

- Provost, M., Allan, K. J., & Tanner, M. C. (2018). *Awareness and Preparedness of IT managers to digital disruption: A South African Exploratory Case Study*. *The African Journal of Information Systems* 10(4). Retrieved from <https://digitalcommons.kennesaw.edu/ajis> Available at: <https://digitalcommons.kennesaw.edu/ajis/vol10/iss4/2>
- Ramesh, N., & Delen, D. (2019). Why do enterprise transformations fail? Hint: IT'S not what you think. *Journal of Enterprise Transformation*, 7(1-2), 1–16. <https://doi.org/10.1080/19488289.2019.1578838>
- Randall, L. M., & Coakley, L. A. (2007). Applying adaptive leadership to successful change initiatives in academia, 28(4), 325–335. <https://doi.org/10.1108/01437730710752201>
- Reddy, S. K., Reinartz, W., & Reddy, S. (2017). Digital Transformation and Value Creation: Sea Change Ahead. *Digital Era*, 9(1). <https://doi.org/10.1515/gfkmir-2017-0002>
- Riggio, R. E., & Lee, J. (2007). Emotional and interpersonal competencies and leader development, 17, 418–426. <https://doi.org/10.1016/j.hrmmr.2007.08.008>
- Robinson, O.C (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology*, 11(1), 25-41.
- Robles, M. M. (2012). Executive Perceptions of the Top 10 Soft Skills Needed in Today's Workplace. *Business Communication Quarterly*, 75(4), 453–465. <https://doi.org/10.1177/1080569912460400>
- Rubin, H. J., & Rubin, I. S. (2011). *Qualitative Interviewing: The Art of Hearing Data* [e-book] Google Books. Retrieved January 21, 2019, from https://books.google.co.za/books?hl=en&lr=&id=bgekGK_xpYsC&oi=fnd&pg=

PP1&dq=Rubin+HJ+and+Rubin+IS,+1995.+Qualitative+interviewing:+The+art
+of+hearing+data.+–
+Chapter+6,+London,+Sage+Publications&ots=tI7DfQjaLe&sig=U8AwvIAaqQf
e-6ij1Zgz7DBgd10#v=one

Sainger, G. (2018). Leadership in Digital Age: A Study on the Role of Leader in this Era of Digital Transformation. *International Journal on Leadership*, 6(1), 1–6.

Retrieved from

[https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=129632726
&site=bsi-live](https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=129632726&site=bsi-live)

Saldana., J. (2013). *Coding manual*.

Saunders, M., & Lewis, P. (2018). *Doing Research in Business and Management* (Second). Pearson Education Limited.

Scheepers, C. B., & Whelpton, P. (2018). Stakeholders' different perspectives of critical success and risk factors in a case of large-scale system implementation across Africa. *South African Journal of Business Management*, 49(1), 1–13.

<https://doi.org/10.4102/sajbm.v49i1.195>

Schwab, K. (2018). *The Global Competitiveness Report 2018*. *World Economic Forum Reports 2018*.

<https://doi.org/ISBN-13: 978-92-95044-73-9>

Schwarz Müller, T., Brosi, P., Duman, D., & Welpel, I. M. (2018). How Does the Digital Transformation Affect Organizations? *mrev*, 29(2), 114–138.

<https://doi.org/10.5771/0935-9915-2018-2-114>

Silver, W. (2018). The future of HR is being BRAVE. *Emerald Insight*, 17(4), 186–192. <https://doi.org/10.1108/SHR-05-2018-0043>

Singh, A., & Hess, T. (2017). How Chief Digital officers Promote the Digital transformation of their Companies. *MIS Quarterly*, 16(1). Retrieved from

<http://cdoclub.com>.

Sousa, M. J., & Rocha, Á. (2019). Skills for disruptive digital business. *Journal of Business Research*, 94, 257–263.

<https://doi.org/10.1016/J.JBUSRES.2017.12.051>

Uhl-Bien, M., Marion, R., & McKelvey, B. (2007). Complexity Leadership Theory: Shifting leadership from the industrial age to the knowledge era. *Leadership Quarterly*, 18(4), 298–318. <https://doi.org/10.1016/j.leaqua.2007.04.002>

Van Outvorst, F., Visker, C., & De Waal, B. (2017). *Digital Leadership: The Consequences of Organizing and Working in a Digital Society*. Paper presented at the 5th International Conference on Management, Leadership and Governance, Saint Petersburg, Russia. Retrieved from <http://content.ebscohost.com/ContentServer.asp?T=P&P=AN&K=122433111&S=R&D=bth&EbscoContent=dGJyMNHX8kSeqLc4wtvhOLCmr1Cep7NSsKi4SrGWxWXS&ContentCustomer=dGJyMPGnr0q2rLBLuePfgex44Dt6fIA>

Veenman, M. V. J., & Spaans, M. A. (2005). Relation between intellectual and metacognitive skills: Age and task differences. *Learning and Individual Differences*, 15(2), 159–176.

<https://doi.org/10.1016/j.lindif.2004.12.001>

Vey, K., Fandel-Meyer, T., Zipp, J. S., & Schneider, C. (2017). Learning and Development in Times of Digital Transformation: Facilitating a Culture of Change and Innovation. *International Journal of Advanced Corporate Learning*, 10(1), 22–32.

<https://doi.org/10.3991/ijac.v10i1.6334>

Weiling, K., & Wei, K. K. (2004). *Organizational Culture and Leadership in ERP Implementation*. *Decision Support Systems*, 45(2), 208-218.

Westerman, G.; Bonnet, D.; McAfee, A. (2014). The Nine Elements of Digital

- Transformation. Retrieved May 1, 2019, from
<https://sloanreview.mit.edu/article/the-nine-elements-of-digital-transformation/>
- Westerman, G., & McAfee, A. (2012). *How Digital Leaders Outperform Their Peers in Every Industry*. Retrieved from <http://digitalcommunity.mit.edu/docs/DOC-1105>.
- Williams, D. (2001). Communicate your leadership agenda. *ProQuest*, 2001.
- Wright, B. (2019). Just what is the state of digital transformation in South Africa? | CIO. Retrieved October 17, 2019, from
<https://www.cio.com/article/3431617/just-what-is-the-state-of-digital-transformation-in-south-africa.html>
- Yukl, G. (1989). Managerial Leadership: A Review of Theory and Research. *Journal of Management*, 15(2), 251-289.
<https://doi.org/10.1177/014920638901500207>
- Yukl, G., & Mahsud, R. (2010). Why flexible and adaptive leadership is essential. *Consulting Psychology Journal*, 62(2), 81–93.
<https://doi.org/10.1037/a0019835>
- Zikmund, WG; Carr, JC, Babin, B, Griffin, M. (2013). *Business Research Methods* (9th ed.). Mason, OH: South Western, Cengage Learning.

APPENDIX 1: INVITATION LETTER

Invitation Letter

Dear Respondent

I trust you are well.

My name is Asmitha Tiekam, and I am currently a Masters in Business Administration(MBA) student at the Gordon Institute of Business Science(GIBS).

Please can you advise if you would be willing to participate in some academic research to complete an Applied Business Analysis and Research Project i.e a dissertation we are required to complete as part of the MBA program at GIBS. I am conducting my research on: *The digital leadership skills that South African leadership require for successful digital transformation.*

I know from past experience/recommendation that your organisation has done many digital transformation projects, and would appreciate it if I could take an hour of your time to do a brief interview on the Digital Leadership skills required for successful digital transformation. My target audience to interview is mainly senior or executive level leadership directly involved in the decision making, or leading digital transformation in their organisation.

Objective of research:

To understand digital leadership's skills/competencies to carry out successful digital transformation in their organisation, and the kind of leader they have to be.

The interview process is expected to last no more than one hour. ***Your participation is voluntary and you can withdraw at any time without penalty.*** All data will be reported without identifiers. The interview process will be recorded for academic purposes only. If you have any concerns, please feel free to contact my supervisor or myself. Our details are provided below:

Please can you advise your if you would be keen to participate in my research or if you feel another one of your senior managers would be more suitable for the research interview, I would greatly appreciate it! I currently have availability to interview from the 8th July to the 18th July. Should you be interested in participating, do advise a date and time of availability.

I look forward to hearing from you!

Thanks!

Kind Regards
Asmitha Tiekam

APPENDIX 2: CONSENT FORM

INTERVIEW CONSENT FORM

THE DIGITAL LEADERSHIP SKILLS THAT SOUTH AFRICAN LEADERSHIP REQUIRE FOR SUCCESSFUL DIGITAL TRANSFORMATION

RESEARCHER: Asmitha Tiekam, MBA Student at Gordon Institute of Business Science (GIBS),
University of Pretoria

I am required to complete an Applied Business Analysis and Research Project as part of my Masters in Business Administration (MBA) qualification at the Gordon Institute of Business Science (GIBS). As such, I am conducting research on: **The digital leadership skills that South African leadership require for successful digital transformation.** The objective of the research is to understand if a certain kind of leadership is key to successful digital transformation and what are the digital leadership skills required by South African leadership to ensure successful digital transformation.

The interview is expected to last no more than one hour, and your participation is voluntary and you can withdraw at any time without penalty. The interview process will be recorded for academic purposes only and to ensure I do not lose any of the key points from the interview process. The recording is voluntary and you may choose not to be recorded. All data will be kept confidential and will be reported without identifiers.

If you have any concerns, please contact my supervisor or myself. Our details are provided below.

Researcher Name: Asmitha Tiekam

Email: 98102398@mygibs.co.za

Phone : 0836411191

MBA Supervisor: Hugh Myers

Email: Myresh@gibs.co.za

Phone: 083 302 3802

Signature of participant: _____

Date: _____

Signature of researcher: _____

Date: _____

APPENDIX 3: INTERVIEW GUIDE

Interview questions for Research Project on The Digital Leadership Skills

South African leadership need for successful digital transformation

1. In your view, what do you understand by the term digital transformation?
2. To what extent has your organisation undergone any kind of successful digital transformation? What factors were a key contribution to the success of the digital transformation?
3. In your opinion, how important is the role of leadership in ensuring successful digital transformation in South African organisations?
4. What kind of leader, from your experience, is suitable for carrying out successful digital transformation?
5. What in your view do you understand by an 'adaptive leader'?
6. Is adaptive leadership relevant for successful digital transformation and what skills/aspects are relevant?
7. In your view, what do you understand by the term 'digital leadership'?
8. From your perspective and experience, what is the difference between the following skill types: Cognitive, Influencing, Strategic, and Business Skills?
9. From your experience, what digital leadership skills do you believe South African leaders should have in order to ensure successful digital transformation in their organisations?
10. Which of the digital leadership skills/competencies mentioned are most important and why?
11. Which digital leadership skill do you believe have been key in driving digital transformation in your organisation?
12. How are your leaders acquiring these digital leadership skills for upcoming digital transformation in your organisation and how are these skills being kept up to date?

APPENDIX 4: ETHICAL CLEARANCE LETTER

**Gordon
Institute
of Business
Science**
University
of Pretoria

20 June 2019

Asmita Tiekem

Dear Asmita

Please be advised that your application for Ethical Clearance has been approved.

You are therefore allowed to continue collecting your data.

Please note that approval is granted based on the methodology and research instruments provided in the application. If there is any deviation change or addition to the research method or tools, a supplementary application for approval must be obtained.

We wish you everything of the best for the rest of the project.

Kind Regards

GIBS MBA Research Ethical Clearance Committee

Gordon Institute of Business Science
Reg. No. 19748/03

26 Melville Road, Rose, Johannesburg
PO Box 767002, Sandton, 2146, South Africa

Telephone (+27) 8379 4000
Fax (+27) 8379 4007

www.gib.ac.za
University of Pretoria

APPENDIX 5: CONSISTENCY MATRIX

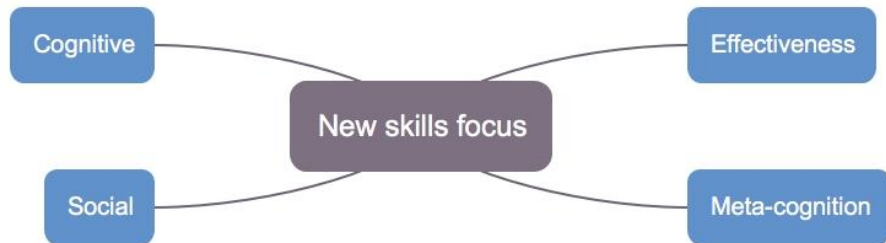
Consistency Matrix of Research Questions to Interview Questions Mapping

Research Questions from Chapter 3	Interview Questions
<u>Research Question 1 (RQ1):</u> What is leadership's understanding of digital transformation?	1. In your view, what do you understand by the term digital transformation
<u>Research Question 2 (RQ2):</u> What are the factors that contribute to a leader carrying out successful digital transformation?	2. To what extent has your organisation undergone any kind of successful digital transformation? What factors were a key contribution to the success of the digital transformation?
<u>Research Question 3 (RQ3):</u> Understanding the Importance of Leadership in Digital Transformation 3.1 What kind of leadership is required for digital transformation? 3.2 To what extent does adaptive leadership contribute to digital transformation?	3. In your opinion, how important is the role of leadership in ensuring successful digital transformation in South African organisations? 4. What kind of leader do you believe from your experience is suitable for carrying out successful digital transformation? 5. What in your view, do you understand by an adaptive leader? 6. Is adaptive leadership relevant for successful digital transformation and what skills/aspects are relevant?
<u>Research Question 4 (RQ4):</u> What is leadership's understanding of digital leadership and what digital leadership skills are needed for successful digital transformation by South African leaders?	7. In your view, what do you understand by the term 'digital leadership'? 8. From your perspective and experience, what is the difference between the following skill types: Cognitive, Influencing, Strategic, and Business Skills? 9. What digital leadership skills from your experience, should South African leaders have in order to ensure successful digital transformation in their organisations?

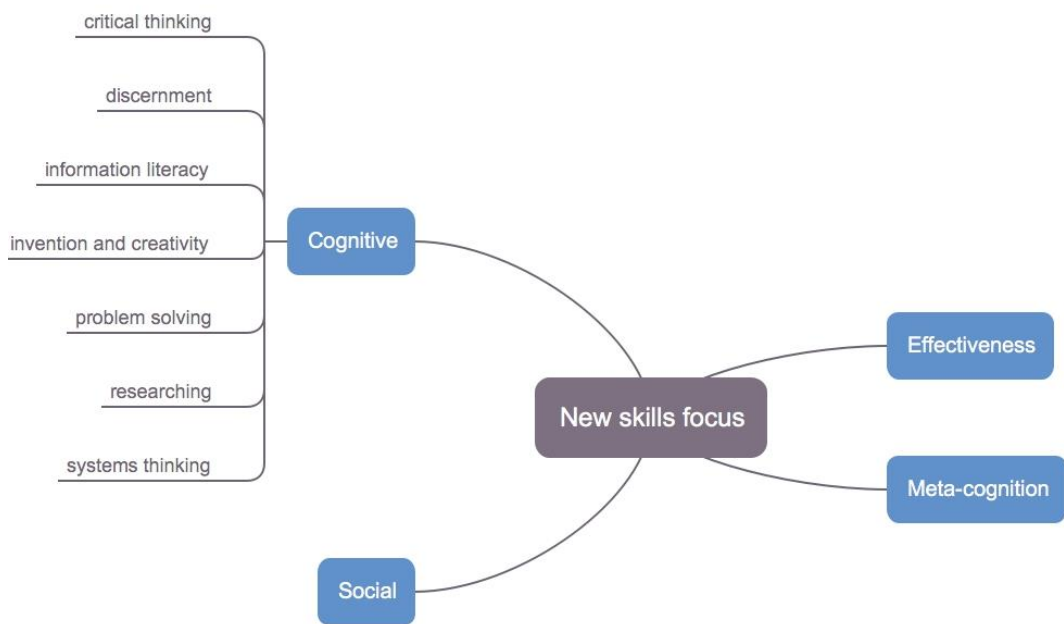
	<p>10. Which of the digital leadership skills/competencies mentioned are most important and why?</p> <p>11. Which digital leadership skill do you believe has been key in driving digital transformation in your organisation?</p>
<p><u>Research Question 5 (RQ5):</u> How are leaders acquiring digital leadership skills and keeping these skills up to date?</p>	<p>12. How are your leaders acquiring these digital leadership skills for upcoming digital transformation in your organisation and how are these skills being kept up to date?</p>

APPENDIX 6: FIGURES FROM RESPONDENT - P3

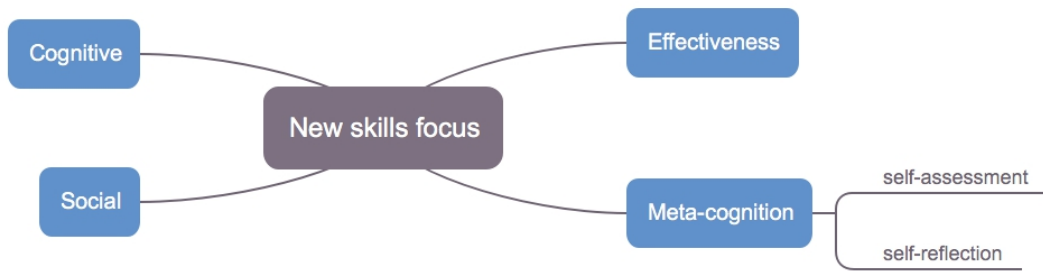
All skills



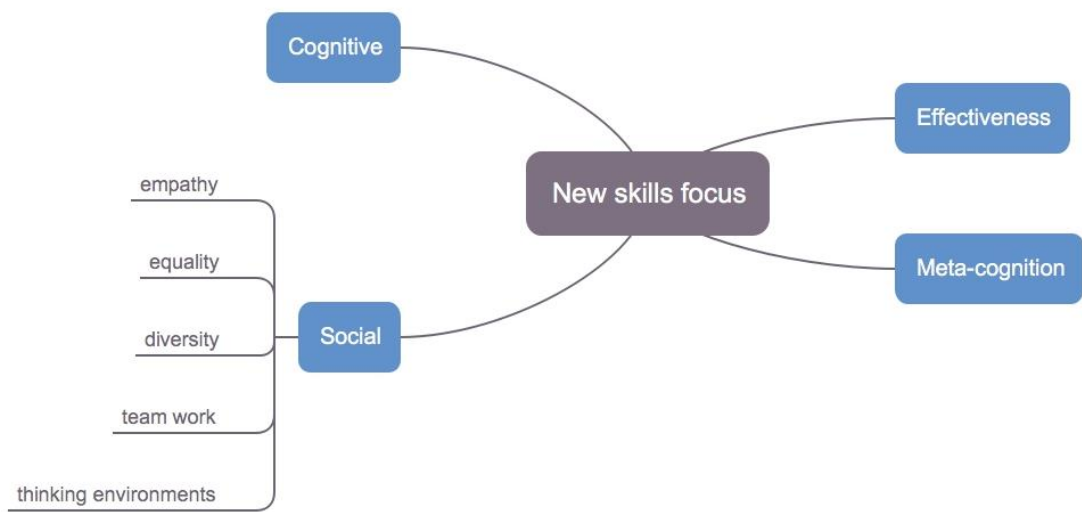
Cognitive skills



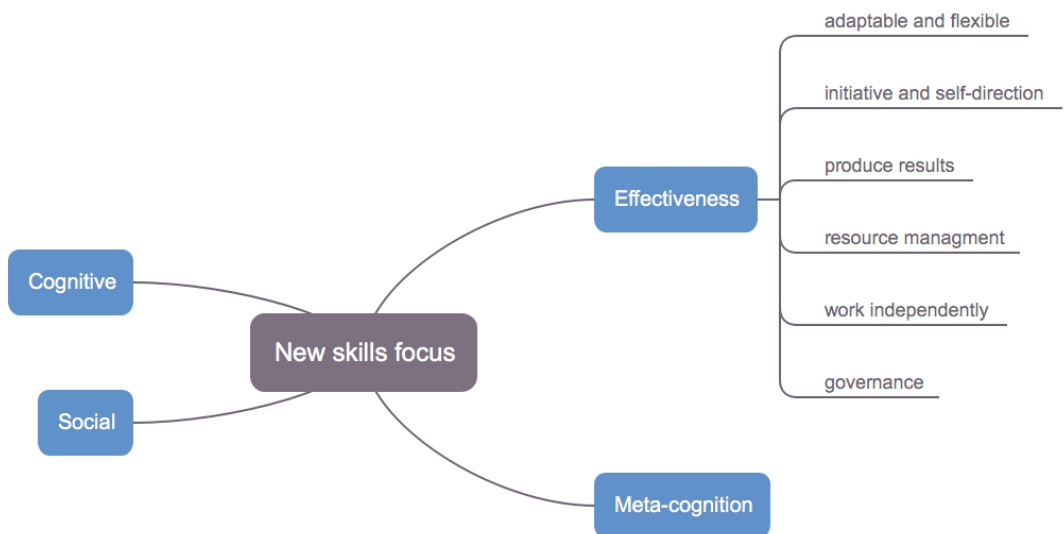
Metacognition skills



Social skills



Effectiveness skills



APPENDIX 7: CODE BOOK FROM ATLAS TI.

Code

A seat at the exco
Able to communicate - Digital Leadership Skill
Acceptance of digitization is important
Acknowledge mistakes
Adapt to change
Adapt to changes - Digital Leadership Skills
Adaptive Leadership
Adaptive Leadership - Adapts to Environment
Adaptive Leadership Skills
Adapts to the situation
Agile Leader
Agile Skilling
Appoint the right people to do the job
As a leader you don't have to always know everything or have all the answers
Assertiveness - Successful Digital leadership skills in organisation
Attend seminars/summits
Authentic leadership
Automation of systems/processes from manual
Be able to stand up and say 'No'
Be assertive
Be confident - Digital Leadership Skills
Be Flexible
Be innovative
Be mindful and aware you are being watched - - Digital Leadership Skills
Behaviour is being watched
Being a strong or tough leader to ensure successful transformation
Being authoritative is key
Being authoritative is not helpful
Being Calm
Being explicit to lead successful digital transformation
Being Optimistic
Being Optimistic - Digital Leadership Skills
Big data understanding
Bold and Brave
Bring together Value Chain elements
Broad Skills
Business Analysis Skills

Business processes are impacted
Business Skills
Capability
Centres of Excellence to play with technology
Challenger Mentality
Change in behaviour
Change in Business Model
Change Management - successful digital transformation
Change your style to the situation
Clarity
Clarity of market opportunity
Clear bottom line
Clear business conversations
Client Centred focus
Client First, everything revolves around client
Cognitive Skills
Cognitive Skills - Successful digital transformation Key skill
Collaborating across Silos
Comfort
Communication- successful digital transformation
Community involvement and collaboration
Confidence skills
Constraint on Resources
Context matters for digital transformation in various organisations
Continuous Skilling up the organisation
Cost implications of digital transformation
Courage of your convictions
Courage to change individually - Satya Nadella
Creates an enabling environment
Creating a safe space
Creating new partnerships
Creative Backgrounds
Critical thinking
Cross Functional Collaboration/Cross Pollination
Culture
Culture - Impacts Upskilling
Culture important for successful Digital Transformation
Curiosity
Curious and Humble
Customer centric iterative testing of ideas
Customers trust a brand

Cut your losses
Data Visualisation
Dealing with Disruption
Dealing with Disruptive technologies
Decentralised decision making
Decision making skills
Design thinking - factors for successful digital transformation
Design Thinking Skills
Determination
Digital and Leadership Skills
Digital Fashionista
Digital Immersions to see technology
Digital Leadership
Digital Leadership is contextual
Digital Leadership is still being figured out
Digital Leadership seen same as Leadership for this age
Digital Leadership Skills
Digital Literacy
Digital Maturity plays a key role in org digital transformation
Digital Strategy
Digital Transformation
Digital transformation is about Digital
Digital Transformation is not only about technology
Digital transformation more about people than tech, and business processes
Digital transformation not about IT, but leadership responsibility & disruption in
Digital Transformation Understanding
Don't assume people understand what you talking about
Ears on the ground
Ecosystems for Collaborating
Embrace transformation
Emotional Intelligence
Employing digital into your business - Digital Leadership
Empowering the right people to empower you
End goal in mind
energy and passion to drive digital transformation
Entrepreneurship skills
Environment Impacts successful digital transformation
Environment impacts Upskilling
Executive courses at Business School
Face to Face course specific dialogue
Facilitation skills - digital leadership skills

Factors contributing to successful digital transformation
Factors to keep skills updated
Fail Cheaply
Failure is ok in digital transformation
Failure of digital transformation
Field readiness programs
Financial acumen
Fit pieces together to make digital transformation work
Flexible Leadership
From an infrastructure perspective it was
Future thinking
Gaps in the business
Generous Leader
Go back to School
Grow businesses Innovatively
Growth Mind-set
Having a vision
Having the right people working for you
Having Trust in People - Key Skill
High tolerance to Failure
Hiring Millennials
Holistic leader - Digital Leadership Skills
Holistic relation between part that contributes to - Successful Digital
Honesty
Hunger to Learn and go forward
I would say the change from being manual
Iconic Leaders
Impact of Technology
Impact of what you are doing
Implement Solutions
Importance of Adaptive leadership
In house innovation hub that communicates
Influence People - Digital Leadership Skills
Influential leader
Influencing Skills
Infrastructure - successful digital transformation
Innovation
Interconnectedness
Interpersonal skills
Intuition
Investing in young people

IT governance
IT study programmes
IT understanding
Keeping skills updated
Keeping your cool and being calm
Keeps core business going
Knowledge of offering
Knowledge of the market
Leader that understands technology and the latest trends of digital
Leader with emotions and support their people for successful dig.transformation
Leaders are role models
Leaders keep up with the times
Leaders teach each other/Learn from each other
Leaders who can execute not just talk
Leadership Behaviour impacts successful digital transformation
Leadership Buy in
Leadership confidence
Leadership Critical Success factor
Leadership failure
Leadership key to drive change
Leadership needs expertise
Leadership ownership
Leadership sets the culture
Leadership Skills
Leadership Skills - Digital Leadership Skill
Leadership skills for digital transformation
Leadership- successful digital transformation
Leadership Support is Critical
Leadership that acts quickly to the changes
Leadership that listen to the younger generation - Digital Leadership Skills
Leadership that listens to people
leadership training sessions
Leadership Trust or Belief
Leadership understanding of Digital leadership
Leadership Understanding of Digital Transformation
Leading digitalisation as a leader or an organisation
Learn IT
Learner Mind-set
Learning from Competitors
Learning from corporates
Learning to Fail

Leverage the capabilities of the organisation from new technology
Likeable leaders
Listen and understand the customers' needs
Listen to Futurists
Listening skills
Local and International conferences
Make decisions
Make decisions like it's your own business
Management of transformation project/process
Management skills
Managing expectations of Stakeholders
metacognition: self-aware and self-reflective
Mind-set shift
Min-set shift
Natural leadership
Need the right infrastructure and technology to support
Negotiating skills - Adaptive Leadership
Negotiating skills - Digital leadership Skills
Networking skills
New Business model
New Revenue Channels
Non-authoritarian leader
Not about technical capabilities
Online courses
Open Mindedness
Open to Change
Open to Change - Digital Leadership Skill
Organisation decision to adaptive relevance
Organisation eg. of implementing successful digital transformation
Organisation Maturity impacts Digital leadership
Organisations that can serve customers in most interactive and responsive
Owner mind-set
Paradigm Shift - successful digital transformation
Partnerships with external vendors/providers
passion
Patience is a skill for Digital Leaders
People contribute to successful digital transformation
People follow leaders
People Management skills
People skills
People who think different to their leaders are key

Permission
Permission for success from the culture leaders drive
Personal research
Positive mind-set and front to carry out successful digital transformation
Practical skills
Problem Solving skills
Problem solving Skills - Digital Leadership Skills
Product, People, Customer
Proficiency
Project Leadership Skills
Project Leading
Project Management Skills
Providing assurance to Positive mind-set and front to carry out successful
Reduce operating costs from use of digital technologies
Relevance of Adaptive Leadership
Remaining calm - Digital Leadership Skills
Removing hurdles for your people
Research constantly
Resilience for tough times -Digital leadership Skills
Resilience to lead in tough times
Resourceful & Adaptive Leader
Revenue generation
Revenue grew
Risk Taking
Security is important
See the big picture
Self-development
Sensitivity to complexity
Servant leadership
Services deliver to consumers
Shareholder value in costs
Showcasing the use of technology
Situational awareness
Situational awareness - Digital Leadership Skills
Skills depends on the situation
Social capabilities
Social effectiveness
Soft skills: empathy
Soft Skills: Mind-set shift
South African context issues impact digital transformation
South African Digital leadership skills

South African People are not moving with the times
Special training
Specific committees/Forums created for Leadership
Speech and how you say things - Cognitive impact
Speed of change- Adaptive leadership required
Stakeholder Management
Staying close to Universities or Tertiary institutions
Step change
Strategic Skills
Strategy is important
Successful digital transformation
Successful digital Transformation understanding
Successful Digital transformation skills
SWOT(strengths,weaknesses,opportunity and threats) Skills
Systems Thinking
Take people along on the transformation
Taking a chance
Taking a step back so your people can figure it out
Taking opportunities when it presents itself
Talk about the change coming/Communication
The art of story telling
The right People help successful digital transformation
The right tools
Think differently
Thinking out of the box
Thought Leadership
To be Mindful
Town Hall Sessions
Training Courses
Transformational Leader
Transparency - Digital transformation
Transparency and openness
Trust
Trust had to be built with customers and internal teams
Trying out new ideas and concepts
Type of Leader for successful digital transformation
Understand Branding
Understand people - Digital Leadership Skills
Understand technology
Understand the market/environment
Understanding basic of technology and IT

Understanding Data in Organisation -Digital Transformation
Understanding digital transformation context
Understanding humans critical cognitive skill
Understanding Interdependencies
Understanding one-self - Digital Leadership Skills
Understanding oneself
Understanding Patterns for now and the future
Understanding people
Understanding: Skills for leaders for successful digital transformation
Understands business to adapt
Unicorn leader
Update Skills
Use of AI in digital transformation
Use of Robotics in digital transformation
Use of Social Media
Use of Technology
Using Analytics
Using CIO Forums to keep informed and learn
Using data intelligently
Using technology for good
Visionary Leader
Vulnerability
Way of working changing
Ways of Upskilling Leadership
Where do you want to take your organisation in terms of
Work abstractly and convert this to what people understand
You need to be able to listen to people,
Young digital Leaders
Young generation employees don't want to be part of authoritative leadership