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Digital Transformation in University Schools: A case study of a South African Business School

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

Johannesburg, 2021

Supervisor: Dr Manessah Alagbaoso

23 April 2021

ABSTRACT

The concepts of digitisation, digitalisation, digital transformation and digital maturity are both revolutionising and fundamentally evolving the way in which organisations operate. Digital technologies and automation are rapidly introducing changes into customers' lifestyles, interactions, engagements and requirements with business and organisations globally. Digital transformation is a continuous journey and is impacting different industries in different ways.

The purpose of this study was to evaluate the state of digital transformation at Wits Business School (WBS), a South African business school in the higher education sector. The study followed a triangulated qualitative research design, which included multiple data sources in the form of 15 digital semi-structured in-depth interviews with senior and non-senior stakeholders across Wits University currently involved in digital business-related initiatives; 160 online qualitative questionnaires from student respondents across WBS; 14 Wits University policy documents; and observational data linked to digitally related projects and initiatives. The data was analysed through a thematic network approach.

The research findings pointed to a large gap between WBS's current digital maturity state and the desired digitally transformed state. The findings indicated that WBS lacks stable leadership to create a digital vision and strategy for digital transformation, which are currently lacking. Cultural transformation is urgently required, coupled with incentives for adopting new digital skills and capabilities into the workforce. Positively, the findings revealed a high level of digital focus across all areas of the value chain both in WBS and Wits University. Six areas were identified as the main factors hindering digital transformation: Leadership, Governance, Strategy and Vision, Culture, Business Models and Platforms, and Technological Resources and Capabilities.

The research recommends bold, agile and transformative leadership; a clearly articulated digital vision and strategy; improved digital skills with a digitally inculcated cultural mind-set; and a revised organisational structure that incorporates cross-functional teams from different areas of the value chain coupled with integrated technological architecture and platforms, supported through digitalised governance policies and appropriate data analytics.

KEY WORDS

Digitisation, Digitalisation, Digital Transformation, Digital Maturity, Digital Literacy, Digital Skills, Digital Capabilities.

DECLARATION

I, Yasira Cajee, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Name: Yasira Cajee Signature: 

Signed at Johannesburg on the 23rd day of April 2021.

DEDICATION

In the name of Allah, the Most Gracious and Most Merciful, I dedicate this research report to the amazing and beloved Cajee family, Yusuf, Anisa, Muhammad and Radhiyyah Cajee. This journey would not have been possible without your continuous motivation, support and unconditional love. I am the woman I am today because of you.

To my parents, your love and support to stand by me whilst I pave my career path has not gone unnoticed and I would like to thank you for providing me the comfort, time, dedication and support to complete my degree with ease.

To my sister, Radhiyyah Cajee, your undying wit and love have kept my head above water during the challenging times and have always inspired me.

To my brother, Muhammad Cajee, thank you for always encouraging and inspiring me.

ACKNOWLEDGEMENTS

"Leadership is not a position or a title, it is action and example".

To my amazing and incredible supervisor, who has been nothing less than a leader, Dr Manessah Alagbaoso, a generous thank you. Without you this achievement would not have been possible. Your ongoing support, guidance and friendship have been a steppingstone for me. Thank you for continuously inspiring me and being a source of motivation throughout this incredible journey.

I would sincerely like to show my appreciation to:

Professor Beatrys Lacquet, for continuously pushing me beyond, encouraging and inspiring me to think further. Thank you for believing in me, for the ongoing support and dealing with my hours away out of office and study leave.

Professor Brian Armstrong, for leading the forefront of this digital group. You have been an inspiration. Thank you for your ongoing support, guidance and friendship.

To the Cajee family, thank you for all the sacrifices and family support provided to me while I completed my research and qualification.

To the faculty of Wits Business School, staff and students, thank you for participating and taking time out of your busy schedules to support my research study.

To the University of Witwatersrand, for the respondents, policies and information as well as observational capabilities across different areas of the university segments.

To my team at Wits Plus, thank you for putting up with my studying responsibilities.

To Eden Pillay and Vernon Thaver, two incredible classmates that became friends and turned into family. Thank you for guiding, supporting and inspiring me throughout this journey that we shared. I am indebted to you for always lending a hand and making time to assist me throughout the entire programme.

To all my classmates and lecturers who embarked on this journey with me, I am forever grateful for all the knowledge bestowed upon me; learning from the lecturers whilst learning from an incredible and diverse network of professionals has had an everlasting impact on the type of leader I would like to be someday.

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LIST OF ABBREVIATIONS AND ACRONYMS

AMBA	Association of MBAs
API	Application Programming Interfaces
ARWU	Academic Ranking of World Universities
BIS	Business Intelligence Services
CRM	Customer Relationship Management
HRDU	Human Resources Development Unit
ICT	Information and Communications Technology
IT	Information Technology
JSE	Johannesburg Stock Exchange
KPI	Key Performance Indicator
LMS	Learning Management System
MANCO	Management Committees
MBA	Masters of Business Administration
MMDB	Masters of Management in Digital Business
PDBA	Postgraduate Diploma in Business Administration

PDDB	Postgraduate Diploma in Digital Business
SCS	Short Course Systems
SET	Senior Executive Team
SoS	Systems of Systems
VC	Vice Chancellor
WBS	Wits Business School
WITS	University of Witwatersrand
WEF	World Economic Forum

CHAPTER 1. INTRODUCTION

Digitisation, digitalisation, digital transformation and digital maturity are part of the digital paradigm underlying the fourth industrial revolution. Digital technologies are taking the world by storm and are essentially changing the way in which we operate, be it through a business, corporate holding group or an institution (Accenture, 2020).

Digitisation can be identified as the process of changing physical assets into digital formats (Bloomberg, 2018), whilst digitalisation is the process of transferring and transforming business models, processes and practices to harness digitised assets (Bloomberg, 2018). Digital transformation can be fundamentally described as an organisation's efforts to change business operations to compete effectively in a digital era (Mogale, 2019). However, introducing new technologies to enhance business operations is merely one element of digital transformation (Kane, 2017) . Strategy, leadership, employees, culture and many other aspects are also critical components of digital transformation. These concepts do not fall under 'transformation' but rather 'digital maturity'. According to Kane, Phillips, Copulsky, and Andrus (2019), digital maturity is a people-centric and organisational-change process that encompasses the use of digital technologies. It requires organisations to see things differently changing what they do and how they do it and optimising their product and service delivery (Deloitte, 2018). Digital maturity, coupled with digital transformation, begins with an organisation's self-evaluation to determine its current status (Westerman, Bonnet, & McAfee, 2014).

Customers are keen to have access to real-time, handheld services through smart phone technologies coupled with advanced and efficient digital platforms (Dubru, 2017). Effective communication is key to ensuring efficient and above-average customer services. The university at large administers multiple different services and operations to ensure a smooth and efficient student journey across the academic programmes that students enrol for. Therefore, agile and streamlined processes across the student's journey have become a key fundamental requirement to assist students and create a sense of ease and convenience when conducting the necessary processes. Overall, these processes interlink and are interrelated across the different areas such as administration, faculty offices, fees offices and other related services; thus, they should be carefully and closely administered.

This chapter introduces digitalisation and digital transformation drivers, trends and insights in the context of the higher education sector as the concepts focused on in this study.

1.1 Purpose of the Study

The purpose of this study is to strategically evaluate the status of digital transformation at a South African business school, focusing specifically on Wits Business School (WBS) of the University of Witwatersrand (Wits University or Wits) in South Africa. This study aims to assess the current digital status and digital initiatives of the business school and analyse the thinking, methodologies and practices of digital transformation from a wide variety of stakeholder, student and university perspectives. The study investigates factors that drive or hinder digital transformation at WBS against a conceptual framework of digital transformation derived from literature reviewed.

1.2 Context of the Study

Customers are at the centre of all businesses. They often drive the trends of value propositions in order for the businesses to sustain themselves in a highly competitive market (Kotler, 2012). Industry trends influence changes across the products, services and operations of organisations (Menguc, Auh, & Ozanne, 2010). With these new digital technologies, customers are at the forefront of requesting real-time, fast, reliable and trustworthy products and services from organisations (KPMG, 2019). The rate at which these industries are being disrupted and the pace at which organisations are changing vary across industries. According to Kuratko, Hornsby, and Bishop (2005), innovation and transformation are key to acquiring a competitive advantage to ensure a sustainable future for organisations. In today's dynamic and ever-changing business environment, digitally disruptive technologies are significant players (Onyeji-Nwogu, Bazilian, & Moss, 2017). Every individual is surrounded by these new digital disrupters, which are empowering them to move beyond and change the way in which they are currently doing things.

The education sector in South Africa is gradually climbing the digital transformation industry scales (Sibanda, 2019) and seems to be digitising some of its efforts. However, this sector is not even considered amongst the top eight industries on the rise in terms of digital transformation, as indicated below in Figure 1(Sibanda, 2019).

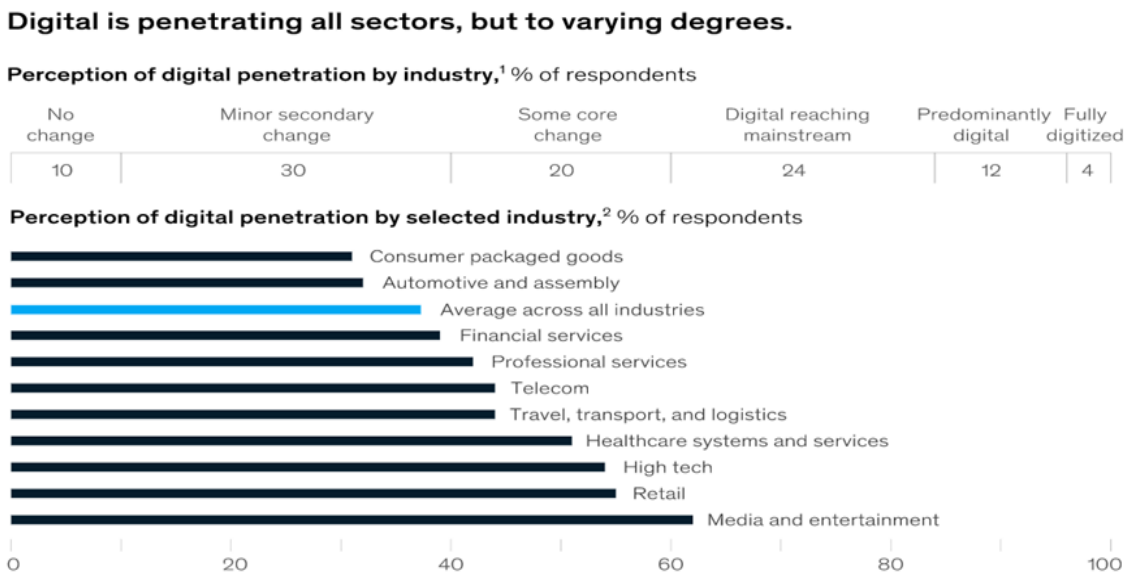


Figure 1: Digital Penetration of Industries in South Africa (Sibanda, 2019)

Whilst there may be no accord regarding the ranking of the digital penetration of South Africa's education sector, the education sector is at risk owing to its high exposure to technological disruption, as displayed in Figure 2 below (Armstrong, 2019).

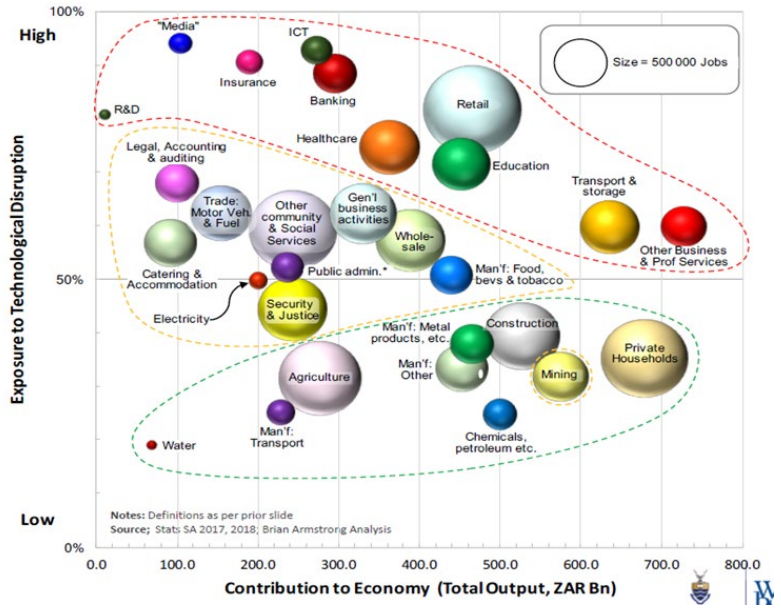


Figure 2: Industry Exposure to Technological Disruption (Armstrong, 2019)

The South African education sector contributes extensively to the South African economy, to the tune of approximately R450 billion (Armstrong, 2019). At the same time, the threat of exposure to technological disruption is above 50% (Armstrong, 2019), which

places the sector at high risk if it does not adopt and adapt to new digital technologies and drive digital transformation.

Apart from the primary and secondary sectors within the education sector, the tertiary or higher education sector is a key contributor to the South African economy at large, as universities and colleges are the pinnacle of knowledge and learning (OECD, 2015). The higher education institutions play an essential role in building, empowering and encouraging individuals towards significant career paths and, coupled with high research outputs in different industries, they aid in building the South African workforce (Sharma, 2015). With a focus on self-improvement and constant upskilling owing to the changes in market development, the higher education sector is constantly evolving, through new content and programmes to ensure that the workforce is always on the rise (Altbach, Reisberg, & Rumbley, 2019).

Universities are identified as the main repositories of knowledge in South Africa, with over 85% of research outputs of publishable research across the country (Pouris & Inglesi-Lotz, 2014). Universities are one of the biggest contributors to the higher education sector (Pouris & Inglesi-Lotz, 2014). Therefore, exploring the rate of digital transformation across universities is necessary and essential for driving universities towards the sustainability of their futures. The adoption of new technologies in line with the new generational groups of students accessing the institutions needs to be realised as customer expectations and the threat of disruption are two primary factors associated with new technologies. Universities should take the above into account for them to remain relevant and attain a competitive advantage. In order to do this, universities first need to understand their current position and the necessary resources required in this digital context.

Wits University has geared up to embracing the fourth industrial revolution through empowering digital transformation changes across multiple facets of the university (Wits, 2018). According to Habib (2018), Wits has invested over R500 million towards adopting a new cutting-edge strategy, introducing innovative blended learning options and a full-blown information and communications technology (ICT) upgrade, which encompasses a digital campus, online courses and high technology classrooms.

Apart from driving digital initiatives through digital adoption and adaptation across the university, Wits has introduced “The chair in Digital Business”, the first of its kind in Africa (Wits, 2018). According to Professor Brian Armstrong, head of the chair at WBS, the vision of the chair is to help South African businesses thrive in a digital era. The position

of a chair in digital business is a global first, which highlights that digital transformation and digitalisation are key priorities as an aid to research and business development. However, the question remains: is WBS as a group ready? Does it have a digital strategy to deliver on for its students and market?

1.3 Research Problem

Digital technologies are leading the way forward and are revolutionising the way in which we operate. Automation and digital technological innovation are rapidly changing customers' lifestyles and customer interactions with organisations and businesses across the world (Jackson & Ahuja, 2016). Furthermore, from Web 1.0 "Static" to Web 3.0 "Semantic", services acquired from businesses are significantly changing, with different forms of acquisition of products and services (Jackson & Ahuja, 2016). With the speed at which new developments of mobile devices, smartphone technologies, and internet penetration and spectrum are released, business markets are changing (Odendaal, 2019).

Likewise, digital transformation should be at the heart of all organisations, which need to adopt these new digital technologies into their workflow systems to empower their employees or simply ensure a desirable and more satisfactory customer service journey. Customers are the point of interest for any organisation or business and thus they will drive the trend towards their current needs and wants. Whilst technology is a common cause of business disruption, businesses still need to be strategically, commercially, organisationally and culturally driven. This has led to a review of the organisational landscape and business environment, along with changes in processes and organisational structures in order to transform and adapt to this digital landscape (Petrucci & Rivera, 2018).

The advent of the fourth industrial revolution promises to change the competitive landscape, customer expectations and deliverance of new products and services (Petrucci & Rivera, 2018). Many industries today are being disrupted by digitisation, the process of converting manual or physical assets into a digital form (Bloomberg, 2018), and by digitalisation, which is the process of transforming business processes, practices and value models to harness digitised assets that are concerned with the business outcomes (Bloomberg, 2018). A fundamental challenge that organisations face is whether to transform or take the risk of facing potential obsolescence (PWC, 2016). The rate at which these industries are being disrupted and the pace at which organisations

are changing vary across industries. Many new technologies have been utilised to digitalise some aspects and elements of the learning experience (Flavin, 2012). However, academic teachings are rapidly changing from face-to-face, in-classroom teaching to online web-based virtual classrooms.

Online learning is fundamentally transforming the way in which students are taught. Universities at large are being disrupted and are seeing radical declines in student numbers for full-time degree courses, part-time degrees and masters' programmes. Quick online short courses that equip the public with a range of skills in a few weeks, all facilitated through a virtual experience, are competing with degree programmes owing to the time allotted to completing a degree in comparison with completing short courses (Schaefer, Fabian, & Kopp, 2020). Short courses allow for flexibility and diversity of information; however, they lack the in-depth understanding and congruencies taught in the context of degree courses (Schaefer et al., 2020).

With technological developments, quick and easy access to platforms, administration of applications and many other activities can now be achieved within a few minutes. Revolutionising teaching and methods of conducting classes, 'digital teaching' can redevelop, help and enhance the South African higher education sector, through increasing flexibility, accessibility and feasibility. This in turn would not only aid the South African market but open up the playing field to an international market as well, in this way increasing the overall economic benefit for the country (Goodman, 2019). Wits University has to a great extent evaluated and introduced new programmes to its tertiary education offerings that align with this dynamic and digital landscape. The university is currently transforming the academic industry through creating accessible digital programme offerings across multiple different courses and faculties, ranging from short courses and blended learning options to degree programmes that are now fully online (Wits, 2018).

Students have high expectations, especially as they live at the forefront of digital knowledge and in an environment that is now being driven through real-time and virtual experiences. Overall, there is an overarching impact on the legacy of excellence that the university at large has upheld for numerous years (Wits, 2018). The transformational shift towards digitalising academic products (courses and programmes), services and operations is a challenging and cumbersome journey, with additional obstacles presented by old and rigid legacy systems and processes (Petrucci & Rivera, 2018). Therefore, with the rate of digital disruption, pace of change and transformation required, generic leadership styles, methods and ways to drive digital transformation may need to change.

The education sector in South Africa is gradually climbing the digital transformation ladder (Sibanda, 2019). The education sector seems to be digitising certain services but is not included amongst the top eight industries in terms of the rise of digital transformation, as indicated above in Figure 1 (Sibanda, 2019). Also, within the context of the study, the education sector faces high risks because of high digital technological disruption exposure, as shown in Figure 2 above (Armstrong, 2019).

Literature on developments and transformation in the higher education institutions suggests that a key characteristic throughout centuries of institution existence is their ability to adapt to changing demands, contexts and market exposure (Ferreira, 2005). Given that universities are one of the biggest contributors to the higher education sector (Pouris & Inglesi-Lotz, 2014), exploring the rate of digital transformation across universities is important for their sustainable future.

1.4 Research Objectives

This research aims to evaluate digital transformation at Wits Business School within the University of Witwatersrand.

The study aims to achieve the following objectives:

1. To assess the level of understanding of digital transformation at Wits Business School.
2. To investigate key focus areas that are enhancing or hindering the drive towards digital transformation at Wits Business School.
3. To evaluate the current digital maturity of Wits Business School.

1.5 Significance of the Study

Wits University is one of the leading universities across South Africa, currently retaining its second position in the country (Kwach, 2020) and first position within Africa in the 2020 Academic Ranking of World Universities (ARWU) (Wits, 2020c), whilst upholding its fortieth position on the global QS BRICS rankings (QS, 2020). In 2018 Wits University announced its summative investments towards its new strategy, which include ICT upgrades, the introduction of the digital campus and many other additional services, coupled with blended learning options in different programmes offered across the university (Wits, 2018). This provides evidence that Wits University is gearing up towards

the fourth industrial revolution, through multiple facets in digital transformation across different faculties, schools and parts of the institution.

With an investment of over R500 million made towards empowering and sustaining the university in the face of macro-economic factors (Wits, 2018) such as the threat of digitisation in the market and the adaptation of new digital technologies in other institutions, Wits needs to ensure and uphold its position in the market. Many faculties, departments, schools and other facets of the university are expected to contribute to this digital transformation. WBS is a third revenue-operating stream for Wits University. WBS offers a variety of postgraduate academic and executive education programmes (WBS, 2020), along with partnering with corporate companies to deliver customised company-driven programmes and training, through innovative, transformative and immersive learning experiences (WBS, 2020).

WBS essentially deals with a large number of the individuals that currently make up the South African workforce as students. The target audience at WBS can be defined as professionals in their working environments who wish to upskill themselves continuously. Students who enrol at the business school are looking to improve their skillsets and are willing to move beyond the norms of just ‘knowing enough’. Thus, in line with Wits University’s strategy and the introduction of the ‘Digital Chair’ at WBS, this particular school can be seen as one of the potential drivers of digital transformation for the university overall. The variety of different individuals that are enrolled at WBS and the nature of the academic programmes offered mean that many of these are experts in their fields and thus require fast, agile and real-time services. They come from some of the top companies listed on the Johannesburg Stock Exchange (JSE) and are already part of organisations that may be at the forefront of digitalisation and digital transformation.

WBS seeks to build bridges between business, government, societies and labour to address critical issues facing South Africa and aid in fulfilling its economic destiny (WBS, 2020). In this context, customers or students are the key focal area. This increases the need to be customer centric, which can be further optimised through digitalisation and digital transformation processes. With the introduction of a Digital Chair, programmes driven around digital business, transformation and innovation and a high focus on customer centricity, the digital reform and digitalisation of processes are at the heart of the future for WBS.

Taking the above into consideration, the significance of this study is to provide WBS with a high-level strategic overview of digital readiness that will outline potential factors that

empower or hinder digital transformation at WBS. The study highlights these factors to influence decision making for the long-term sustainability of WBS through identifying elements of digital maturity, the current status of digitalisation of WBS and the key hindrances.

1.6 Delimitations of the Study

Delimitations describe the limitations of the study, in respect to what falls within and without the scope of the study.

1.6.1 *In Scope*

- Review of operating units across Wits Business School, South Africa
- Senior team driving operational units in Wits Business School, South Africa
- Non-senior team members part of driving digital innovation across Wits Business School, South Africa

1.6.2 *Out of Scope*

- Business and service operational units at Wits University
- Education industry out of South Africa
- Other universities in South Africa
- Tertiary educational industry – digitising colleges, technikons and other learning institutes

1.7 Definition of Terms

For the purpose of this study the key terms are defined as follows:

Digitalisation can be defined as a process of transferring and transforming business models, processes and practices to harness digitised assets. It focuses on business outcomes rather than technical outcomes (Armstrong, 2020; Bloomberg, 2018).

Digital Transformation refers to the effects of change as a result of introducing digital technologies. It is the process of digitisation and digitalisation, with the exploitation of a full spectrum of new technologies to create and transform business processes and attain

sources of value (Armstrong, 2020; Bloomberg, 2018; Parviainen, Tihinen, Kääriäinen, & Teppola, 2017).

Digital Maturity can be seen as the degree to which an organisation has the capacity to adapt, respond and thrive in a digital era. It includes the organisation's ability to deliver and achieve its digital transformation strategy and objectives (Armstrong, 2020; Kane, Palmer, Nguyen-Phillips, Kiron, & Buckley, 2017).

1.8 Assumptions

- The participants, students and selected stakeholders, in this study answered truthfully, based on the anonymity and confidentiality assigned when seeking permission to conduct the research.
- There are new digital technologies currently utilised across Wits/WBS that could potentially yield better results through optimisation, instead of new investments in new technologies.
- There is a perception of the lack of leaders driving digitalisation to empower digital transformation.
- The generational gap between leaders and students hinders the drive towards, and significance given to, moving into a digital era.
- It may be perceived that there is potentially a lack of employee buy-in to empower the necessary changes that aid digital transformation.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

Digital transformation is the central theme arising from the study. Owing to the complex nature of the digital era, organisations seeking to grow their digital status, referred to as their ‘digital maturity’, need to be systematic in introducing digitalisation and developing a digital transformation strategy (Matt, Hess, Benlian, & Wiesbock, 2016). This interrelation suggests a causality between the concepts ‘digitalisation’, ‘digital transformation’ and ‘digital maturity’, in that digitalisation and digital transformation empower the digital maturity status of an organisation (Catlin, Scanlan, & Willmott, 2015; Gottschalk, 2009; Westerman, Tannou, Bonnet, Ferraris, & McAfee, 2012). Digital transformation success is derived from a digital transformation strategy, which should be further derived from the organisation’s corporate strategy and should highlight operational- and functional-level strategies (Matt, Hess, & Benlian, 2015).

Expectedly, digital transformation strategies outline cross-functional and interrelational characteristics that need to be aligned with other operational strategies across the organisation (Matt et al., 2015). Digital maturity reflects the position of an organisation in relation to driving a digital business. Digital transformation coupled with digital maturity is an ongoing process as new digital technologies are introduced into the market at a rapid pace (Davies, Coleman, & Livingstone, 2015). It also involves the alignment of change management around the strategy, people, processes and technologies to adapt to the new way of carrying out business activities to uphold the constant and ever-changing demands of customers, employees and other stakeholders (Kane et al., 2017). This effectively drives the organisation’s sustainability in a complex digital environment.

Although the terms ‘digitisation’ and ‘digitalisation’ can be commonly used interchangeably and are important in digital transformation, it is crucial to understand the difference between the two concepts. Digitisation can be described as the adoption of technologies to improve or automate existing manual assets into a digital form (Armstrong, 2020). In contrast, digitalisation is the process of transforming operating business process, practices and business models to harness digitised assets (Armstrong, 2020). The combination of the two concepts, coupled with changes in leadership and management practices, produces digital transformation, which is a much broader concept and is discussed in depth in this chapter.

This chapter is anchored on the theory that supports the purpose of this study. The objective of this literature review is to discuss digital transformation constructs within the context of universities in the higher education sector.

2.2 Definition of Topic or Background Discussion

Automation and digital technological innovation are rapidly changing customers' lifestyles and customer interactions with organisations and businesses across the world (Jackson & Ahuja, 2016). Furthermore, from Web 1.0 "Static" to Web 3.0 "Semantic", services acquired from businesses are significantly changing, with different forms of acquisition of products and services (Jackson & Ahuja, 2016). With the speed at which new developments of mobile devices, smartphone technologies, and internet penetration and spectrum are released, business markets are changing (Odendaal, 2019). The advent of the fourth industrial revolution promises to change the competitive landscape, customer expectations and delivery of new products and services (Petrucci & Rivera, 2018). Many industries today are being disrupted by digitisation (Bloomberg, 2018) and by digitalisation (Armstrong, 2020; Bloomberg, 2018). A fundamental challenge that organisations face is whether they should transform or take the risk of facing potential obsolescence (PWC, 2016).

Literature best describes the three terms 'digitisation', 'digitalisation' and 'digital transformation' on the basis of their scope (i.e. from a narrow to a broad perspective, in relation to each organisation's customised requirements) (Bumann & Peter, 2019). Digital transformation focuses on a customer-centric approach and requires cross-functional organisation changes with the implementation of digital technologies (Bloomberg, 2018). Figure 3 below provides a visualised definition of the three concepts based on Maltaverne (2017).

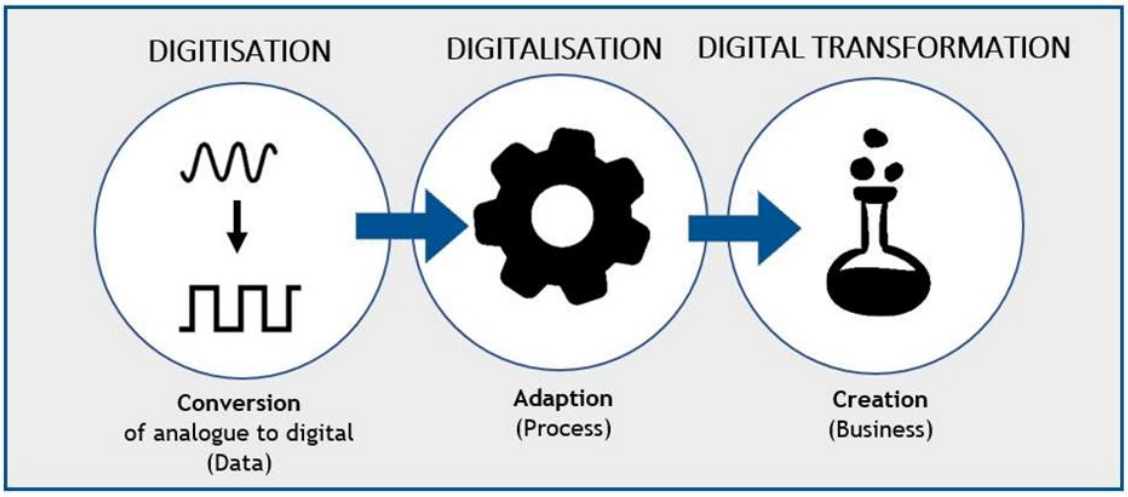


Figure 3: Definition of Digitisation, Digitalisation and Digital Transformation (Maltaverne, 2017)

Digital transformation should be at the heart of all organisations, which need to adopt these new digital technologies into their workflow systems, empowering their employees or simply through ensuring a popular and satisfactory customer service journey (Deloitte, 2018; Westerman et al., 2014). This has led to a review of the organisational landscape and business environment, and changes in processes and organisational structures in order to transform and adapt to this digital landscape (Deloitte, 2018). Understanding the value that these digital technologies attain can aid in creating value for the government, industries and society at large, which can help in setting the footprint for national digital transformation strategies, which can increase investments and improve economic growth across all sectors in South Africa (Accenture, 2020). However, organisations need to understand that in order to execute a digital transformation plan, they need to have a clear strategy where digital is at the heart of their business strategies (Gill & VanBoskirk, 2016). According to Ismail, Khater, and Zaki (2017) and Kane, Palmer, Phillips, and Kiron (2015), several success stories now depend primarily on leaders deploying strategies and thereafter adopting the necessary technologies. This suggests that digital transformation is driven by strategy and not technology (Bumann & Peter, 2019).

Digital transformation can benefit countries. According to Accenture (2020), globally Demark is ranked first amongst the 28 European Union members in the Digital Economy and Society Index of 2017. Demark emphasises industry 4.0, as the increasing trend in automation and data technologies and is committed to digital transformation across the country, which will include the creation of a digital hub, a strengthened focus on education, agile regulations for new business models and data as a driver for growth.

The South African economy is faced with multiple challenges, such as high unemployment levels, declining productivity and increased crime rates. However, with the change in political landscape and the arrival of the fourth industrial revolution, there is growing optimism that change will occur. Accenture (2020) highlights that just over 51% of the total value can be expected across nine industry and five governmental sectors from digital transformation. Digital technology can improve people's lives by improving education, healthcare and other employment opportunities, to create digital value for society (Accenture, 2020).

Everything about business is changing, from the way purchases are made to the way customers interact with service providers. Before any organisation can attempt to decide which way to go, they need to understand where they are and what their current position is: this is digital maturity (Deloitte, 2018). Assessing its own digital maturity level will enable an organisation to assess how far it is on the transformation journey, to create goals and plans, and to help make impactful project investments (Deloitte, 2018). It is important to understand that digital transformation is a journey that involves a complex ecosystem of resources and capabilities (Deloitte, 2018). Organisations must embed digital capabilities as a core competency at their heart (Gill & VanBoskirk, 2016).

2.3 Digital Maturity Model Analysis

Owing to the interrelated conceptuality of digitisation, digitalisation and digital maturity, organisations should have a definitive understanding of what digital maturity is and how it should be critically evaluated (Bloomberg, 2018). The evaluation of digital maturity aids in understanding what is the capacity of an organisation for it to thrive in a digital era (Deloitte, 2018). Digital maturity aids in clarifying the digital state that an organisation is currently positioned in. This is defined using two distinct parameters, which are seen as separate yet related dimensions (Capgemini, 2012). According to Westerman et al. (2014), the two dimensions used to assess digital maturity are digital capabilities and leadership capabilities. To obtain synergies between freed investments, people management and cultural adaptation strong leadership is required, whilst strong digital technologies and capabilities make digital initiatives easier and less risky (Westerman et al., 2014).

Before proceeding to transform an organisation digitally, the digital maturity of the organisation needs to be adequately evaluated in order to determine the level of complexity it would require for the organisation to be digitally transformed into a

successful digital business environment for the digital era (Capgemini, 2012). Westerman et al. (2014) suggests that digital maturity should be evaluated against the two dimensions of digital and leadership capabilities positioned within the four-quadrant classification under: beginners, fashionistas, conservatives and digital masters.

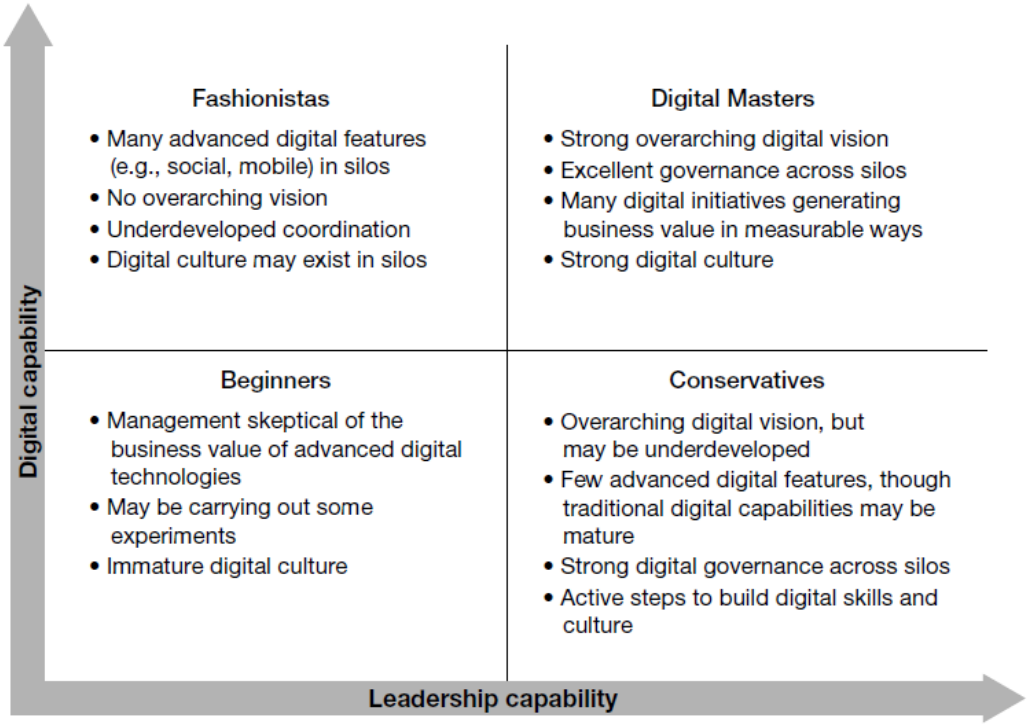


Figure 4: Digital Maturity Evaluation Model by (Westerman et al., 2014)

Beginners (in the bottom left-hand corner of Figure 4) are often categorised as those organisations that have fairly limited digital resources and capabilities; they are beginners by choice without awareness of opportunities to grow their business and often do not have an effective transformation strategy or vision (Capgemini, 2012; Westerman et al., 2014). Digital fashionistas (in the top left-hand corner of Figure 4) seek to be powered by the best and highest digital technologies and changes but lack the synergies of a profound digital vision and transformation strategy and often lack the knowledge to build business benefits (Capgemini, 2012; Westerman et al., 2014). Conservatives (in the bottom right-hand corner of Figure 4) are more in favour of prudence and governance; they have a strong front on a unifying vision coupled with corporate culture to manage investments well. They are often sceptical and follow a careful approach (Capgemini, 2012; Westerman et al., 2014; Westerman, Calméjane, Bonnet, Ferraris, & McAfee, 2011). The ultimate winner that organisations should strive for is the archetype

of a digital master (in the top right-hand corner of Figure 4). These organisations have a thorough understanding of a digital vision, digital value opportunities and how to drive value through digital transformation. Digital Masters are developed through a digital vision, inculcating digital cultures and continuously moving their digital competitive advantage forward (Capgemini, 2012; Westerman et al., 2014; Westerman et al., 2011).

Evaluating digital maturity is a crucial step in moving the organisation towards clearer visions and understanding of the desired state that the organisation wishes to achieve, through a digitalised strategy, vision and culture. Digital masters find the distinct balance between traditional business notions and digital business ideologies (Capgemini, 2012; Westerman et al., 2014). In this regard, the maturity model by Westerman et al. (2014) is one of the most cited frameworks for digital maturity and was identified as a feasible model to evaluate any organisation within any industry.

2.4 Conceptual Framework for Digital Transformation

When organisations consider digital transformation, they are mainly accounting for the adoption of new digital technologies that allow them to conduct certain tasks (Parviainen et al., 2017). This adoption coupled with attempting to improve business processes within the job functions is merely digitisation and digitalisation. Only once these digitisation and digitalisation processes are enhanced with elements of business strategy, leadership, change management and other facets of the organisation that integrate these technologies and the way in which they operate can true value be attained and digital maturity be realised (Deloitte, 2018; Libert, Beck, & Wind, 2016; Parviainen et al., 2017). This suggests the need for a conceptual framework for digital transformation.

Practically, consulting firms have developed practice-orientated publications about digital transformation along with digital maturity models. However, in academia, research insights around a fully integrated and developed approach to the field of digital transformation and digital maturity are fairly limited (Bumann & Peter, 2019; Gsell, 2017). This gap in research has led to further enquiry into the validation of the dimensions being assessed in digital transformation. Considering this, Evans (2017) has developed the Digital Transformation Framework. According to Evans (2017), all organisations that are looking to pursue their digital transformation journeys must understand the complexity of this transformation and be geared towards fully engaging the ideals of this disruptive digital era. Evans (2017) further reports that digital transformation should be built around

four pillars, which are strategy and vision, people and culture, process and governance, and technology and capabilities (Evans, 2017).



Figure 5: Digital Transformation Framework by Nicholas Evans (Evans, 2017)

The importance of developing a digital transformation strategy is that it serves as a central concept that allows for integration across the entire organisation's coordination, prioritisation and implementation of all digital transformation activities (Matt et al., 2015). Evans (2017) framework has been identified as the most cited framework for digital transformation, whilst also being the most relevant and applicable across numerous industries. The depth and breadth of the components that make up this framework were found to be suitable for this study, as their measuring capabilities allowed the researcher to explore the root of the maturity constructs and to gain overall consistency within the study, which could be further leveraged throughout the scope of the literature review. Thus, this study was guided by this framework in preference to other digital transformation or digital maturity models that were consultancy-developed and did not go through peer reviews and analysis, which might influence the outcome of the findings. Consultancy-developed models are more practical in nature but have not been analysed and tested in academic literature (Bican & Brem, 2020).

Each of the four pillars of Evans (2017) framework is outlined in more detail below.

2.5 Strategy and Vision

Strategy and Vision is the first pillar of the conceptual framework of Digital Transformation (Evans, 2017) and has the following components: Digital strategy, Digital focus and Investment

2.5.1 *Digital Strategy*

In general, for all organisations a crucial starting point for any new changes is a vision and a strategy that will empower that vision. Likewise, when beginning the digital transformation journey, a 'Digital' vision and 'Digital strategy' should be instituted (Westerman et al., 2014). Overall, the digital vision should be derived from the broader organisational business vision and together these visions will inform the digital strategy (Sanchez & Zuntini, 2018). Digital transformation is not merely about introducing new technologies into the organisation. New technologies should not necessarily be the first thing driving digital transformation but rather a component thereof, and digital strategy should be the number one priority (El Sawy, Kræmmergaard, Amsinck, & Vinther, 2016; Ross, Beath, & Sebastian, 2017). Furthermore, as noted above, customers are at the heart of digital transformation; they are leading the way in terms of which product, services and operations should be delivered (Lund, 2017). Customers often inform the digital strategy of an organisation as customers' expectations are now very different from before (Willmott, 2014). Today, for example, they rely on the use of new technologies and optimised services to order what they had previously gone into a store to purchase (i.e. online purchases) (Willmott, 2014).

According to Ross et al. (2017) and El Sawy et al. (2016), an organisation can pursue two types of strategies: a customer engagement strategy and a digitised solutions strategy. A customer engagement strategy is driven by customers and follows a customer-centric approach, allowing for a highly customised and personalised experience through digital services (Sahu, Deng, & Mollah, 2018). A digitised solutions strategy is built around products, focuses on products that generate data, delivers data and is data-driven to create new value opportunities and propositions for customers (Ross et al., 2017).

As noted above, digital transformation is a continuous process (Croft, 2018). The development of a digital strategy by an organisation should therefore align to the long-term goals and sustainability of the organisation (Sanchez & Zuntini, 2018). In line with

a digital strategy that is focused on the long term, continuous innovation would lead the organisation to a competitive advantage (Deloitte, 2018). The higher education sector and universities in particular are relative players in this regard. From innovation across the range of programme offerings, to innovation-led virtual classrooms and online teaching, in line with an innovative backend digital solution that empowers the student's journey across their duration of study, all of these aspects of a digital strategy are linked to creating a competitive advantage and positioning the university at the forefront of customer-centric organisations (Avilova, Gulei, & Shavyrina, 2015).

For many organisations digital is the new source of competitive advantage, but it is still often misunderstood by leaders, who understand 'going digital' as being mainly about technology-driven processes and process automation (Adner, 2016). It is vital for leaders of organisations to understand that a digital strategy operates at a business-model level and encompasses the organisation's value proposition for customers (Sanchez & Zuntini, 2018). It is about finding the growth opportunity overlap that exists between customers' needs and how competitors are fulfilling those needs in the marketplace (Rangle, 2019). According to Evans (2017), success in digital strategy will be derived from understanding customers' interaction with products and services, in line with designing their digital customer journey experience that is built around the ever-changing nature of customer requirements and including the continuous need to improve and sustain relationships with customers.

According to Grajek (2019), digital transformation in the higher education industry can be defined as "a cultural, workforce and technological shift". New approaches are likely to generate new opportunities and outcomes, such as an increase in student successes, improved and innovative learning methods, and new research capabilities (Grajek, 2019). The dynamic changes in student expectations are a key driver to higher education's digital transformation movements. In today's dynamic digital era, students expect a seamless, highly customised and personalised experience (Grajek, 2019). Students' desires vary from having an education home base and increased education marketplaces to having a notably competitive advantage when they graduate (Grajek, 2019). Therefore, increasing the importance of developing a digital strategy with a customer centric approach. The degree of this transformation will have institutions developing entirely new business models. Figure 6 below presents a newly reformed digital transformation outlook for higher education institutions (Grajek, 2019).

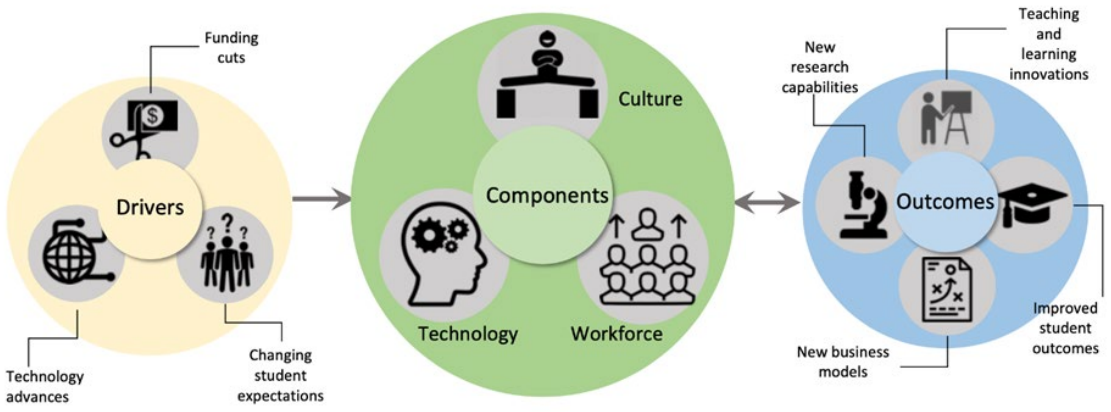


Figure 6: Digital Transformation Outlook Model for Higher Education Institutions (Grajek, 2019)

2.5.2 *Digital Focus*

Organisations today often face the digital dilemma that comes about in this digital era, with a focus on either improving current operational activities, product and service offerings and consolidating the market, or the need to create digitalised solutions that are future driven and innovative (Sahu et al., 2018; Westerman & Bonnet, 2015). Being able to identify this dilemma, take the opportunity and strike a balance between the two notions to enable long-term sustainability, whilst not losing sight of the short-term wins (Chen, Yang, Dou, & Wang, 2018) of the two imperatives can be known as ambidexterity (Sinha, 2016). This dilemma is amongst the top issues in organisations, because whilst future innovation and improvement are important, customers and market trends are crucial as they are the source of profitability for organisations. To ensure ongoing customer satisfaction, organisations should keep customers as a key focal point for their digital strategy (Stettner & Lavie, 2014).

In light of the above, the deployment of an organisation's resources will highlight the preference between the exploitation and exploration of focus areas. However, not all organisations have the flexibility to deploy a preference. The deployment of resources may not always be part of a deliberate digital strategy, but could inform the organisational design, resource deployment and building of capabilities (Sinha, 2016). Organisational ambidexterity can be realised through three approaches: structural ambidexterity, contextual ambidexterity and punctuated ambidexterity (Güttel, Konlechner, & Trede, 2015).

Structural ambidexterity takes place when the two imperatives are deployed by two separate teams; contextual ambidexterity can be realised when an organisation juggles resources between the two imperatives; and punctuated ambidexterity occurs where the two imperatives are explored independently and at different times (Güttel et al., 2015).

For all organisations, identification of key focal areas will be determined by the aim of the digital transformation journey, which is often driven or led by the customer (Lund, 2017). This allows an organisation to map out a thorough understanding of the customer's journey, and their needs and wants in relation to the organisation's products and services. Customers in this digital era are all about multi-channelled experiences (Lund, 2017), with organisations being able to integrate their business functions and operations towards providing customers with a fully developed and well-drafted end-to-end digital experience (Lemon & Verhoef, 2016). This then suggests that the integration of digital transformation does not promote the traditional value chain-modelled silo activities (Young, 2020). For this reason, a total review of a new organisational design, business models and operational features is crucial to the success of implementing a digital transformation initiative (Adeleye, 2015).

2.5.3 *Investment*

Digital transformation journeys are long and require significant investments in technologies and other components (Volarić, 2018). Organisations that are sceptical about digital transformation may be reluctant to make large investments in these new initiatives (PWC, 2016). It is important for these organisations to note, however, that competitors in the marketplace are not reluctant to invest. Some are willing to try, test and fail, if that will bring them to the top; they are taking advantage of the opportunities that present themselves (PWC, 2016). Whilst innovation is largely driven around delivering value to customers in relation to associated services, digital innovation is the collaboration of digital assets supported by structured architecture that is layered and modular (Huang, Henfridsson, Liu, & Newell, 2017). Digital investments will be derived from the organisation's overall strategy and the determination to succeed in the digital environment, in order to promote great performance and position the organisation competitively (Volarić, 2018). With large investments, however, comes an increased risk, especially when the organisation is still empowering a siloed mentality instead of an integrated transformative mind-set (PWC, 2016).

According to (Evans, 2017), digital transformation extends the organisation's frontline through a new level of competitive advantage, which will essentially translate into sustainable and profitable benefits. To ensure that these benefits are achieved, the organisation needs to adopt customer-centric focus as a strategic investment (Goodman, 2019). Once an organisation begins to view digital transformation through this lens, it forms a sense of commitment to its customers and emphasises the importance of an end-to-end digital customer experience (Kane et al., 2017; Lund, 2017; PWC, 2016)

2.6 People and Culture

The second pillar within the conceptual framework by (Evans, 2017) of Digital Transformation is People and Culture, of which the components are: Digital Skills, Leadership and Culture.

2.6.1 *Digital Skills*

According to Milano (2019), access to a workforce with a precedent skillset is already a key differentiating factor for organisations; it sets them apart from other market leaders. This means that, for an organisation, investing in the digital skills development of its workforce is a good predictor for success in digital transformation (Bolton, 2013). Investing in new training and improving the capacity of employees by empowering them with the necessary skillset and know-how already create a source of competitive advantage (Kane et al., 2015; Milano, 2019). Digital skills need to be enabled through a supportive environment (Milano, 2019). If this type of environment is successfully developed and holsters flexibility for employees, it encourages rapid new ways of learning, which will in turn generate peer empowerment, create efficiencies and allow employees to operate effectively through new ways of doing things (Barker, 2018; Milano, 2019). Skills gaps are poised to grow across the fourth 4th industrial revolution, with rapid new technologies such as artificial intelligence and robotics changing the very nature of how people work faster than ever before (Milano, 2019).

According to Leopold, Ratcheva, and Zahidi (2018), by the year 2022 approximately 133 million new roles will have been created as a result of new labour divisions between machines, humans and algorithms brought about by the fourth industrial revolution (Milano, 2019). With this, new ways of work will promote and empower teamwork, increase teams and the building of cross-functional teams, and ultimately create collective accountability for short-term wins or failures (Deloitte, 2018). Furthermore,

(Milano, 2019) states that while there will be an increased need for more technically driven skills, there will also be an increase in demand for skillsets that computers cannot easily master, such as problem solving, negotiating and creative thinking. This is why, for digital skills to flourish, digital leadership should be promoted in mind-set shifts and actionable behaviours. Poor leadership will potentially lead to failure, even if the teams are empowered with digital skills (Milano, 2019).

Organisations may seek short-term quick fixes for filling the skills gaps that arise by paying a higher premium to acquire the skills they need. Figure 7 below indicates the newly identifiable job roles that will be created (Leopold et al., 2018).

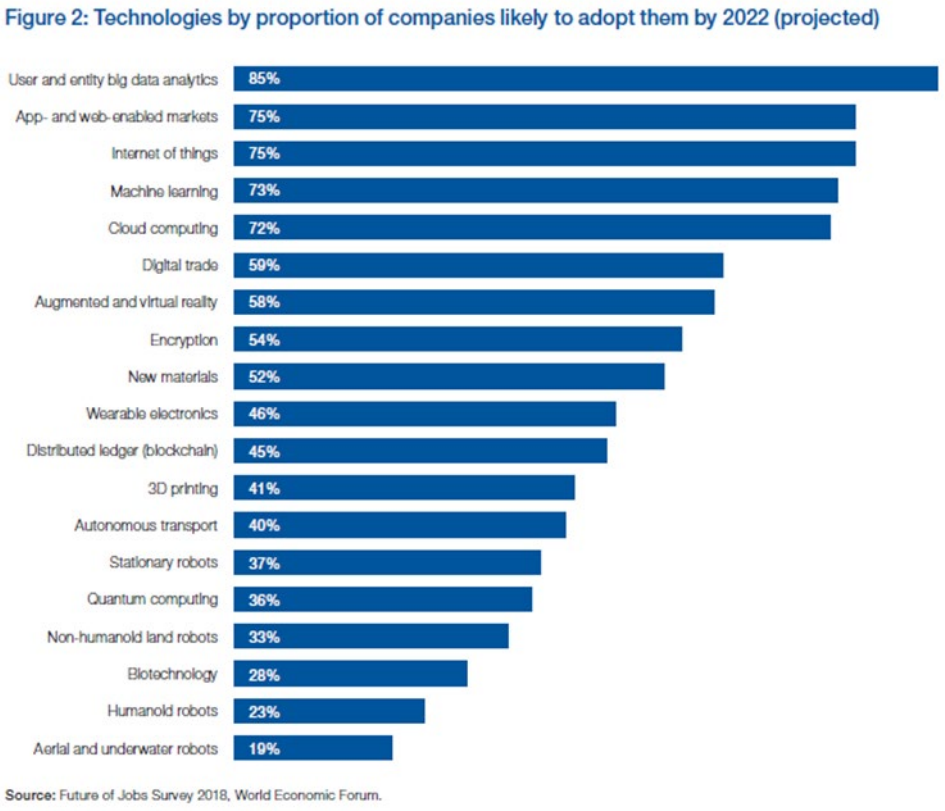


Figure 7: Digital Skill Roles Developed by 2022 (Leopold et al., 2018)

While these new skills will generally be in high demand, as shown in Figure 7, the digital skills are not so easy to find or acquire just yet. According to Holotiuk and Beimborn (2017), research has shown that 77% of companies see one of their biggest gaps in digital transformation as acquiring a digitally skilled workforce. In some industries and roles such as mobility, data sciences and social media, this has been true for over seven years (Westerman et al., 2012). A great emphasis should be placed on the organisation's environment and ability to retain the talent once it is acquired (Kane et al., 2017; Milano,

2019). Concentrated efforts and continuous skills empowerment should be made across the organisation, as some employees who acquire this talent may feel that their organisation is not empowering them enough to ensure that their skills are enhanced (Kane et al., 2017). The maintenance of digital skillsets often requires high levels of flexibility and a newly reformed remuneration model that embraces the new paradigm and includes incentives and recognition for the new innovative advancements in employees' work (Barker, 2018; Celaschi, 2017; Milano, 2019).

2.6.2 *Leadership*

From the onset, for any changes, transformation or new visions to be realised, strong and directional leadership is required, with organisations ensuring that leaders have the ability to lead from the front rather than from the top (Adeleye, 2015). Although there may be a number of different leadership styles and models that were developed around traditional corporate management, these were well adapted into organisations when digitalisation was not a key focus area (Dubru, 2017; Westerman et al., 2012). Leaders that are transformational show a direct interest in capitalising on the opportunities presented by the development of digital capabilities, in this way increasing the organisation's status in terms of digital maturity (Davison & Ou, 2017). Leadership can be seen as a prerequisite for successful digital transformation implementation. The shift to forward-looking leadership will need to consider more than traditional competencies; it will define unique competencies that will be specific to driving digital transformation (Dubru, 2017; Westerman et al., 2014). Designing and driving the process of digital transformation requires momentum. This makes the role of the leader crucial to this journey and requires commitment, dedication and collaboration across the organisation (Ganguly, 2015).

Most leaders in organisations of the current generations are not 'digital natives'; they do not know and embody the digital know-how within themselves but rather need to acquire the necessary skills for becoming 'digital leaders'. In the digital environment, the leadership challenge is the readiness of leaders to shift their mind-set to be forward leading, to lead digitally orientated individuals and to deal with a digitally equipped market (Petrucci & Rivera, 2018). These digitally equipped individuals are multi-faceted; they work well in cross-functional environments and no challenge is too big for them (Petrucci & Rivera, 2018).One of the greatest challenges that leaders in all organisations face is having to break down silos and create new dynamic and cross-functional teams to collaborate and solve problems together (Vey, Fandel-Meyer, Zipp, & Schneider, 2017).

In order for leaders to create this change and achieve a dynamic team, they must ensure that they lead from the front, highlight the vision and purpose of this change, and create an environment and culture that will allow for the necessary flexibility and enable individuals to think dynamically, freely and openly (Kane et al., 2017; Milano, 2019; Vey et al., 2017).

Leaders in this new digital era and context will need to change the types of methods by which they challenge their teams, provide them with critical issues and allow them to come up with dynamic solutions (Milano, 2019; Mogale, 2019). Creating this change and shift in the way that individuals are managed will inspire the workforce and create personal behavioural changes. Authentic leaders embody values that inspire and create the momentum around transformation (Milano, 2019).

While the above traits describe leaders that embrace the new digital era and dynamic context, in this digital era an important question is: what is digital leadership? What traits make up digital leadership? To date there is no one way of describing digital leadership, but it could be adequately described as about ‘doing things right’ in the interest of promoting the transformation efforts to build this new digital ecosystem (El Sawy et al., 2016).

2.6.3 *Culture*

As organisations gear up towards creating a new digital ecosystem through digital transformation, it is vital for them to create a culture that embodies the dynamic, flexible and open mind-sets and support that are required, as culture can be a notable accelerator for the success of digital transformation (Deloitte, 2019; Kiron, Kane, Palmer, Phillips, & Buckley, 2015; Mogale, 2019). According to Catlin et al. (2015), digital culture can be characterised by collaboration and experimentation and can include agility, flexibility and innovation. Digital transformation is dynamic and continuous, as noted previously; it is not merely about updating technologies. Failure to align these new efforts with employees’ values and culture can hinder an organisation’s growth and success in advancing its digital transformation (Deloitte, 2019). This new culture will encompass leaders’ investing in employees’ digital skills, dynamic mind-sets and the promotion of finding new ways of doing work (Antonakis & House, 2014; Deloitte, 2019). Leaders are at the forefront of reshaping this new digital culture, which should focus on motivation, promotions and short quick wins.

As culture can be seen as an accelerator changing a culture can face many obstructions. In fact, changing the culture of an organisation is listed as one of the top barriers to digital transformation in a survey conducted by Harvard Business Review Analytic Services (Eswaran, 2017). Figure 8 below indicates that the top two barriers that disempower the digital transformation efforts in organisations are 'Organizational restructure challenges' and 'Resistance to change'.

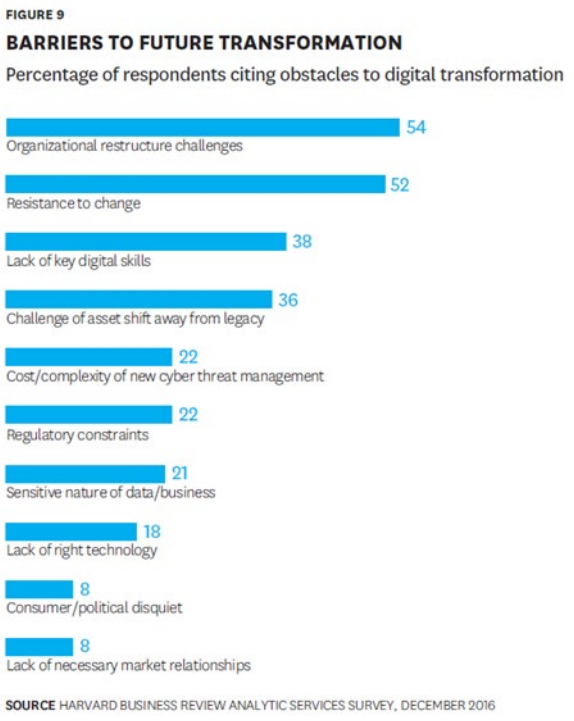


Figure 8: Barriers to Future Transformation (Eswaran, 2017)

Great emphasis is placed on employee readiness and technology enablement in delivering satisfactory customer experiences, which highlights the importance of adopting a digital culture (Deloitte, 2019; Hunsberger, 2017). Often enough, with any new changes required, organisations implement a change-management process to equip themselves with the necessary resources and embrace the appropriate mind-set for generating the momentum required for the changes. Processes include Kotter's eight step change-management process (Kotter, 2020) or Jick's ten step change model (Jick, 1993). Change management involves considerable time taken away from production, but it is crucial for organisations to go through in order to embed a new digital culture that pursues digital transformation (Mogale, 2019; Yukl & Michel, 2006). If the correct digital culture is adopted by the organisation, digital maturity will increase as the leadership inculcates an innovative and learning culture (Kiron, Kane, Palmer, Phillips, & Buckley, 2016). According to a BCG study (BCG, 2020) conducted across 40 digital

transformation companies, those companies that focused on culture achieved five times more breakthrough successes than those that neglected culture.

2.7 Process and Governance

The conceptual frameworks third pillar of Digital Transformation is Process and Governance (Evans, 2017) and is made up of the following components: Digital innovation, Change Management and Governance.

2.7.1 *Digital Innovation*

Another key component of digital transformation is digital innovation. Digital technologies are disrupting and taking the world by storm and largely contributing to transformation that improves economies of scale and society at large (Ciriello, Richter, & Schwabe, 2018). While digital innovation is a key part of digital transformation, digital innovation in itself has undergone drastic digital transformational changes (Ciriello et al., 2018). But what is digital innovation? This concept often relates to bringing together digital elements that create value solutions for clients through an integrated architecture (Huang et al., 2017). As a result, this innovation often aligns with an ever-changing entrepreneurial culture (Ciriello et al., 2018; Huang et al., 2017). With this in mind, it can further be deduced that digital transformation should embody a new entrepreneurial culture, whilst embracing a digital culture. Digital innovation allows organisations to build a business management capability system that essentially is leveraged across all arms of the organisation. This in turn also creates an environment built around the customer, which is an added opportunity for digital innovation as it creates a place for people to focus on customers, their problems, their requirements and what it takes to create commercially valuable and viable products and services (Ciriello et al., 2018; Huang et al., 2017).

The digital innovation playing field has levelled in the sense that it is no longer just for software companies. Today digital innovation has spread across many different companies as it allows them to shift from merely using information technologies (Ciriello et al., 2018; Svensson & Taghavianfar, 2015; Yoo, Boland Jr, Lyytinen, & Majchrzak, 2012). Thus, according to Mogale (2019), digital innovation should not be the “be all and end all”, as it encompasses a creative edge in thinking that can direct organisations to build smart customer solutions that will provide them with the competitive edge that they need to stay prevalent and to sustain them in the digital environment (Ciriello et al., 2018; Mogale, 2019; Rugman & Collinson, 2012). Digital innovation outcomes can be classified

as convergent and generative (Ciriello et al., 2018; Yoo et al., 2012). The combination of digital technologies that were previously separate components and now exist within one component can be described as convergent (e.g. IPhone initially brought the music player, camera and many other components together to create one mobile device). The uniqueness of digital technologies, showing their dynamic and extensible features, aligns with the idea of generativity, extending the original design (Yoo et al., 2012). The combination of these two outcomes allows digital innovation to be both a means ("digital technology as a means") and a result ("digital technology as an end") (Ciriello et al., 2018; Yoo et al., 2012).

2.7.2 *Change Management*

As previously mentioned across chapter one and two, digital transformation is a continuous process and requires strong momentum to ensure that success in digital transformation can be realised. Currently when digital transformation is discussed, most companies still think of digital technologies and digital innovation, which means that they may leave out the people component that will lead to this success (Mogale, 2019; Westerman et al., 2014). Organisational change is driven by people; thus, having all employees at varying levels throughout the organisation buying into this new digital vision and adopting new ways of doing work is absolutely vital. To elaborate further on change, the adoption of change and the level of change that is required are associated with leadership and culture. Leaders for one need to own and commit to the changes being made; they should model new behaviours and should spend the necessary time supporting the change (McKinsey, 2018).

Historically over 70% of change-management processes have failed and have do not reached their desired outcomes (Mogale, 2019). The reason for this failure is that these processes are conducted in siloed teams, are administered in isolation and are ad hoc (Mogale, 2019). However, with digital transformation, change management is dealt with differently as it is forward-facing and leadership plays a significant role in ensuring that there is overall buy-in from all employees across the organisation to the overarching digital vision and strategy for implementing digital transformation successfully (McKinsey, 2018; Smith, 2018). Embracing a new culture will be empowered through successful leadership from the top, which will allow for increased flexibility, dynamic new ways of thinking and incentivising great efforts for those who have made a difference (Kotter, 2020; Smith, 2018; Westerman et al., 2014) .

2.7.3 *Governance*

Organisations and businesses across all industries have adopted different digital advances such as analytics, social media and smart embedded devices and digital technologies to transform their business operations (Capgemini, 2012). However, with this adoption and the creation of new opportunities comes a list of new risks and challenges. According to Capgemini (2012), governance is a key factor in the success of digital transformation, in that new technologies increase the risks associated with brand reputation and regulatory issues. Commonly there are three types of governance approaches that lead organisations' digital transformation endeavours (Tripathi, Matlani, & Maheshwari, 2018): convergence, coordination and separate digital innovation stock. The centralisation and consolidation of digital assets and capabilities to create and enhance synergies make up convergence, whilst coordination involves adding committees that will oversee digital investments across the organisations' business units, with direction from leadership that is customer centric. In addition, digital innovation being isolated as a separate stock decentralises governance across the organisation (Tripathi et al., 2018).

Organisations and their offerings differ to a great extent; thus, their governance also needs to be appropriately associated with the organisations' structure, products and offerings. Furthermore, it can be argued that traditional governance frameworks do not work in a digitally transforming organisation. Today organisations have to be agile and develop a governance framework that can be customised to their values and vision; the framework must allow for agility and mobility in decision making, where silo groups of business and information technology (IT) are removed; and it should realign itself to ensure cross-functional teamwork, where accountability will be shared (Capgemini, 2012; DeLone, Migliorati, & Vaia, 2018). It is absolutely crucial for organisations to wear a cross-functional lens when it comes to customer delivery in this digital space. This is because digital technologies allow for cross-functional demand of services from the market (Mogale, 2019; Westerman et al., 2012). This suggests that organisations will have a holistic view or a single view of customers. In order for organisations to achieve true success in digital transformation, they will need cutting-edge levels of strategic alignment, which will be derived from a clear vision and stringent leadership (Mogale, 2019).

2.8 Technology and Capabilities

The fourth and last pillar of Evans (2017) conceptual framework of Digital Transformation framework is Technology and Capabilities and is made up of the following: Disruptive technology enablers, Platform architecture and Business models and Digital service mastery.

2.8.1 *Disruptive Technology Enablers*

In today's dynamic, ever-changing and highly competitive landscape, the market players Google and Facebook are disrupting and entering into many alternative industries such as retail and business. It is important to understand what technology enablers are. As easily explained by Deloitte (2014), enablers are technological equipment and methodologies that combine with other technologies to generate new ways of processing work items that lead to increased performance and capabilities of a user. The status quo of technologies has changed because of disruptive technologies that have created a highly competitive environmental dynamism (Deloitte, 2019). Examples of disruptive technologies can be seen as "Blockchain technology" or "Gamification" (Deloitte, 2014).

Many of these disruptive technologies are influencing the corporate and social markets. However, according to Christensen's theory of disruptive innovation, as cited in Flavin (2012), while the higher education industry is being disrupted, the disruptive technologies are not directly impacting higher education. This is because they are not explicitly designed to support learning and teaching in higher education, although they may have the potential to be adapted (Flavin, 2012). Furthermore, the introduction and use of technological and virtual learning may disrupt the teaching methods and styles of learning, which could potentially hinder students' adoption of this new learning form (Flavin, 2012; Sagenmüller, 2020).

To this extent, the research provided by Flavin (2012) may have provided insight into technological learnings in 2012. With that being said, in 2020 with the unprecedented times and the need for people to keep a social distance caused by the Covid-19 pandemic, most higher education institutions had to convert to online forms of teaching and empower lecturers and tutors to facilitate their teaching through virtual classrooms and assist in many unconventional ways. It is within this context that leaders in higher education institutions need to keep up with new technological developments that will increase their digital awareness, digital workforce and skills development, and digital adoption (Kane et al., 2015; Westerman et al., 2014). This is essentially a very important

factor to take into consideration as digital technologies are the primary source of digital transformation because of their explicit and exponential nature and their undefined impacts (Berghaus & Back, 2016; Chanias & Hess, 2016). Organisations that adopt these technologies in combination with smart orientation and successful implementation to create a unique value for customers will have a competitive edge as this form may be difficult to imitate (Deloitte, 2019; Sagenmüller, 2020).

These disruptive technologies are quite puzzling; they are yet to be exploited to their full advantage and most allow for customised backend development in order to attain far-reaching benefits (Schmidthuber, Maresch, & Ginner, 2020). Organisations will become either leaders or followers in the market, depending on their strategic outlook, investments in such technologies and ability to create an agile workforce (Milano, 2019; Volarić, 2018; Westerman & Bonnet, 2015). Again, this will need to be in line with whether the organisation chooses a customer-engagement or digital-solution strategy. The challenge for higher education institutions is how quickly they are able to adopt these technologies; how they will compete with online courses and programmes that can be easily accessed; and what efforts are going to be made to enable big institutions such as universities to position themselves as competitive market players.

2.8.2 *Platform Architecture and Business Models*

With the dawn of the digital era, customers have changed the way in which they purchase, interact and communicate overall. Customer demands and interactions, new iterative developments and business process orientation with new disruptive technologies have led organisations to relook at and develop new approaches to and methods of delivering customer services (Goerzig & Bauernhansl, 2018). Customers are at the centre of businesses, and their expectations are built around highly customised and personalised products and services. Today to thrive in this digital era, organisations need to ensure all production or manufacturing, products or services and humans are all closely interlinked and networked, resulting in a more holistic view of the optimisation of business processes by keeping the customer as a point of reference in this newly optimised process (Goerzig & Bauernhansl, 2018).

Organisations should reflect on the type of business architecture designs they need. They should consider whether they are looking to drive the entire ecosystem or control the value chain that delivers client solutions and whether they know enough about their customers. In the higher education industry, getting a single view of a customer may be

a challenge, but with the correct systems architecture and the correct goal in line with how important the customers are, it is possible to create and retain customers over the long-term. Building a profile from a student's undergraduate programme and their succession of courses and programmes can help interlink and allow for cross-marketing of alternative courses or postgraduate programmes to become possible. For organisations, it is all about knowing their customers, including their interests and insights, and the way in which they are self-improving. With the use of big data, predictive analytics, student journey mapping and other digital technologies of these multiple dimensions, together with a digital strategy, organisations will be guided to build a full end-to-end Omni-channel institution (Bondar, Hsu, Pfouga, & Stjepandić, 2017; Goerzig & Bauernhansl, 2018). According to Weill and Woerner (2015), there are four types of business model designs that organisations can adopt, as seen in Figure 9 below.

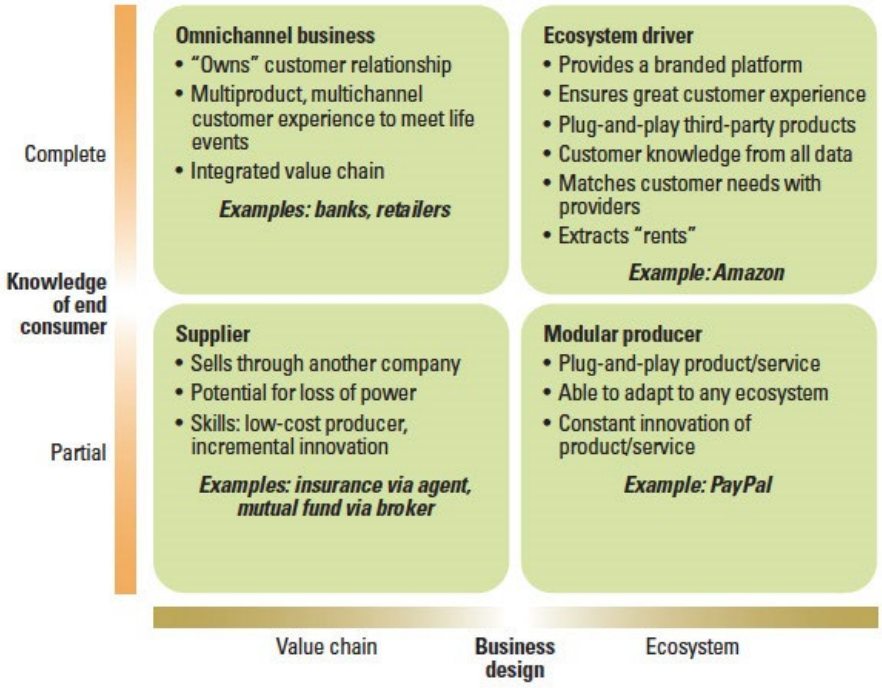


Figure 9: Business Models for the Digital Era (Weill & Woerner, 2015)

Digital business models' key differentiating feature is the exponential scalability, aligned with low costs for growth (Libert et al., 2016). According to Sanchez and Zuntini (2018), digital transformation strategies must align to creating new, viable, valuable and sustainable business models. These digital business models coupled with platform architecture bring about differentiated capabilities from various systems across the organisation to develop an end-to-end customer-centric service platform or portal that addresses all customer needs (Bondar et al., 2017; Goerzig & Bauernhansl, 2018;

Newell & Marabelli, 2014). The core element that will drive these systems is built around data. Integration of data into these systems becomes a top priority for creating digital services, which is why it is also the most challenging (Goerzig & Bauernhansl, 2018; Westerman et al., 2012). With the advancements in communications and interfaces that link humans and machines, interoperability between components constitutes the systems of systems (SoS) environment generated in most business models in this digital era (Bondar et al., 2017).

2.8.3 *Digital Service Mastery*

In this highly competitive digital era, sustaining a competitive advantage is a key competency for all organisations; however, this can only be achieved through the mastering of digital services (Evans, 2015). Having innovative products and services is no longer enough to set an organisation apart from its competitors; organisations now need to master how efficiently they develop, design and continually evolve their digital services (Evans, 2015). To do this they need to set up the appropriate technological infrastructure to simplify the deployment of products and services. According to (D'Emidio, Dorton, & Duncan, 2015), services will account for three-quarters of global growth across the next decade. Digital interfaces are going to be the primary form of interaction for customers, which benefits both the organisation (by decreasing ongoing costs) and the customer (by improving customer service) (D'Emidio et al., 2015; Evans, 2015).

Evans (2015) identifies six key capabilities that can attain digital service mastery, which are; being agile, DevOps as a service infrastructure, intelligent automation, personas and contexts, and digital service management. A well-developed infrastructure is essential for providing services at the level of digital service mastery, where there is a single view of the customer that is tracked and is developed through the use of data (Bondar et al., 2017; Goerzig & Bauernhansl, 2018; Ross et al., 2017). Once the data is acquired and is authenticated, all other teams across the organisation will need to be able to access this information, which means that Application Programming Interfaces (API) will be required (Bondar et al., 2017; Goerzig & Bauernhansl, 2018; Mogale, 2019). Other capabilities such as personas and digital service management may still be lagging behind in digital transformation. Services are moving toward dynamically changing and adapting to customers' environment and expectations and to the changing business conditions (D'Emidio et al., 2015). According to Gartner's predications as cited by

(Evans, 2015), most successful organisations with digital business models will rely solely on deliberately unstable business processes that shift as customers' needs shift.

2.9 Conclusion of Literature Review

'Digital', 'digitisation' and 'digitalisation' are concepts that form an integral part of today's business environment. It is crucial that organisations ensure that their digital efforts are aligned to their overall strategy and the strategic objectives that they wish to achieve. Although having a digital business strategy is important, organisations need to ensure that they are effective in executing and implementing digital initiatives across the organisation and thus they are required to have a clearly defined and flexible digital transformation strategy. This strategy needs to be flexible as new digital technologies are introduced constantly and digital transformation can be seen as an ongoing process and thus requires creative thinking and critical decision making. All key elements of a digital transformation strategy should be managed and integrated so that the organisation may touch base with externalities for purposes of adaptation.

More importantly, organisations should decide first-hand between the two digital transformation strategies – customer engagement or digitised solutions strategies – they plan to adopt. This decision will steer the vision of the organisation and aid in ensuring that it is fundamentally developing customer-centric solutions that are valuable to both customers and the organisation. However, it should be noted that it is possible to adapt a hybrid model that encompasses both strategies, ensuring that there are clearly defined goals, objectives and teams put in place to deliver successful implementation. People are at the centre of digital transformation, with customers making up the majority of the population. Therefore, customer-journey mapping is essential, even if the company is a product-focused organisation, and looking at customer purchasing behaviour and insights will lead to customers potentially purchasing the organisation's product. Regarding service, customers have become more demanding and request real-time assistance and results. Organisations and their employees need to be prepared and have the correct knowledge and skills to better assist with these new service requirements. No matter which strategic direction an organisation may adopt, conventional business models will be disrupted and thus the organisation requires new clearly defined business models that encompass a digital ecosystem that underpins its digital strategy. Organisations should ensure that they protect themselves from disruption and should attempt technology adoption sooner rather than later.

The digital era has not only led to the introduction of disruptive technologies but also requires key paradigm and mind-set shifts, from leadership and culture to skills and the overall mind-set tone set across the entire organisation. The changes required are evidently large and can also attract many challenges, which means that organisations need to be driven and require an appetite for digital transformation. They should ensure that momentum is kept up no matter what challenges they are faced with and that if these digitally related attributes are lacking, then all digital transformation efforts can be seen as futile. To transform, organisations are required to let go of all old and conventional ways of doing things and rather create an atmosphere and environment that invite creativity, change and dynamism, allowing all employees to participate and enhancing buy-in from employees to ensure that they are driven by the same strategy.

The level of innovation and technologies integrated into the organisation influences the organisation's overall digital maturity. Furthermore, financial investments that are made towards digital transformation need to be reflected in unconventional ways as returns on those investments may not be profitable for a number of years following the investments. Another core element of digitally maturing organisations is the empowerment of and investment in the organisation's workforce. Silos toned to fall away if the organisation wishes to achieve success. This in turn means that new cross-functional teams will be built to work together to develop dynamic and creative customer solutions. These solutions will be devised from the influx of data that will be prioritised, as teams will now be required to wear the lens of 'looking outside-in', which involves looking at the market, how customers are behaving, what their purchase behavioural patterns look like, what are the latest trends and where are the customers located. The better an organisation understands its customers the more likely it is to be able to come up with a valuable proposition.

The skills required to empower these digital strategies will in turn change remuneration scales; many employees do not have the required skills and demand for individuals with these skills is high. Traditional remuneration packages will no longer be sustainable; organisations will be required to reinvent new digitally friendly policies and instruments. This, however, can only be achieved through the ultimate driver of digital transformation, which is leadership. Leaders will need to change the way in which they lead the organisation in order to create buy-in to ensure they have the support of all the employees. This is essential across all teams and not just IT or digitally related teams. Inculcating a digital culture and effectively supporting it will empower teams. Commonly, because of the exponential growth of digital technologies, organisations need to adopt

the attitude of ‘fail fast’ and not be fearful of this failure. Essentially, it will allow them to learn and adapt quicker.

Proposed research questions

1. What is the digital maturity of WBS?
2. What are the essential building blocks to implement the digital transformation strategy?
3. Does WBS have a digital transformation strategy to deliver on its digital promises?
4. Are all the relevant factors in place for a digital environment to grow and thrive?
5. What are key factors hindering the digital transformation process?

CHAPTER 3. RESEARCH METHODOLOGY

Research is built upon the systematic collection of data (Hair, Page, & Brunsveld, 2019). It is a logical search for all new and useful information built around a particular topic. The data collected and further collated is often used as a form of investigating and finding solutions to all scientific or social problems (Goundar, 2012). Research is about collecting, analysing and interpreting data to solve a problem or uncover information that was previously unknown, similar to a search for hidden truths (Hair et al., 2019). From this, new knowledge and ideas are created that allow for progress in a particular field to occur. Research is cohesively conducted through a series of studies, experimentation, observations, analysis and reasoning (Goundar, 2012). Research aligns with predictions of events, explanations and relationships, making it ubiquitous in nature (Hair et al., 2019).

Chapter 3 highlights the research methodology chosen for this study and its appropriateness for the study. This chapter outlines the research method and the research approach taken, and describes how the data was collected and the sample selected. It details the research process followed and how the data was analysed. It lists the research limitations of the study, outlines how transferability and dependability were achieved, and, lastly, presents the ethical issues considered.

3.1 Research Method and Data Collection

The research method chosen for a study is crucial in achieving the outcomes and conclusions derived from the data (Ritchie, Lewis, Nicholls, & Ormston, 2013). For the purpose of this study, the research followed a descriptive case study approach, in which a qualitative research method was deployed. This qualitative method followed a dual approach. In Phase 1, qualitative research was conducted with students who were closely associated with WBS through an open-ended text-based questionnaire. The students' experience of the digital journey at WBS was considered important as another layer of comparison, apart from the literature reviewed, between the data from the respondents at WBS and the experience of the users of WBS services.

Phase 2 further enhanced the study with qualitative interviews of WBS senior and non-senior team members who were engaged and actively participating in digital initiatives. This two-step approach further extenuated a three-dimensional view, which was based

on the literature reviewed, the perspectives of the student experience and employee engagement at WBS.

Qualitative research allows for theory to emerge from the research. It yields deep, detailed and contextualised information that allows further questions to be developed that will guide the collection of subsequent data from the research participants (Creswell & Tashakkori, 2007). This research method was chosen in line with the purpose of this study to investigate the culture of key stakeholders within WBS and their attitude towards and beliefs about digital transformation. The research method was also used to assess the student experiences regarding digital transformation adoption, adaptation and overall challenges. It was noted that qualitative research studies often face validity challenges, owing to the nature of emergent themes that arise; findings from such studies cannot be generalised and thus lack transparency. Bearing all this in mind, the research aimed to uncover the deeper meaning, insights, feelings and experiences of students and key stakeholders at WBS on the particular topic through the use of the triangulation concept in qualitative research.

In order to gain an overall and more holistic perspective of the students' and stakeholders' engagement with the digital transformation process, it was vital to conduct Phase 1, which involved data collection from the students to gain insights into their overall experiences at WBS in line with new digital initiatives and digital processes put in place, and Phase 2, which involved interviews with those very stakeholders who drove the necessary digital changes, and evaluate the importance of the subject matter to each group and their beliefs about the subject matter simultaneously. This would allow for a deeper and more revealing picture of the success of the digital transformation process.

The concept of triangulation in qualitative research was used to attain 360-degree perspectives of both employee and student experiences and engagement in digital transformation across WBS. Triangulation can be described as the use of multiple methods to collect data from different data sources to develop a comprehensive and in-depth understanding of the described phenomena (Carter, Bryant-Lukosius, DiCenso, Blythe, & J, 2014; Kurkarni, 2013). It is a method designed to prompt social changes, assist in mitigating bias in perspectives and enhance data saturation (Fusch, Fusch, & Ness, 2018). The triangulation concept within qualitative research can also be used to enhance the test of the validity of the research, through its convergence of data or information from multiple data sources (Carter et al., 2014). Triangulation of data can follow four approaches: method, investigator, theory and data-source triangulation (Carter et al., 2014). For the purposes of this research study, data-source triangulation

was used, as there were four sources of data: collation of questionnaire responses in-depth interviews, policy documents and researcher observation (observed data as a staff of Wits University). This method of triangulation is used to ensure that the researcher does not bring their biased views to the research and to ensure that they are appropriately interpreting other participants' views and ideals of the phenomena (Fusch et al., 2018). Triangulation adds depth to research by supporting a direct link between in-depth analysis and data saturation (Fusch et al., 2018; Fusch & Ness, 2015). The purpose of triangulation is not necessarily to interpret or cross-validate the data and information received but rather to capture and evaluate the different dimensions and perspectives around the same phenomena (Kurkarni, 2013). This resulted in the researcher using selective quotes from the qualitative questionnaires and interviews to present the findings of the results.

The essence of a qualitative research method can be identified as follows (Goundar, 2012; Langkos, 2014; Yilmaz, 2013):

- Qualitative research is mainly appropriate for small sample sizes as its insights and outcomes are not measurable and quantifiable.
- It assumes that research knowledge is not independent of the researcher.
- It is highly emergent and informed from outcomes, which makes it flexible.
- The researcher may only know to some degree what they are looking for; the outcomes influence other emergent concepts.
- It is subject to a respondent's perspective and interpretation.
- The "what", "how" and "why" questions are often asked, to relate back to quality rather than quantity and intensity or frequency.
- Respondents provide consent decisions, and the qualitative method aligns itself to ethical considerations.
- It aligns itself to interpretation of relationships or cultures based on face-to-face interactions among people in a setting.

3.2 Research Design

The research study chose a descriptive case study as the research design and followed a qualitative research method. This involved a cross-sectional methodological approach that was ontological in nature, because it was multi-dimensional and seen from the perspectives of literature, primary observations, the students and the stakeholders

involved, taking into account that these could be subjective (Creswell & Tashakkori, 2007; Goundar, 2012). This qualitative method followed a dual approach, as shown below.

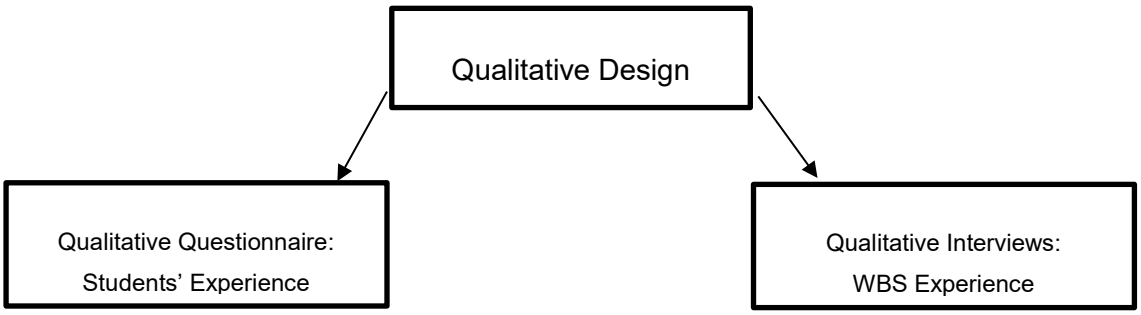


Figure 10: Qualitative Research Design

Phase 1 investigated the students' experience at WBS, through seeking insight into the digital transformation initiatives and digital enabling processes. This phase was conducted through an open-ended questionnaire to 160 students currently enrolled at WBS. Initially the questionnaire was tested on five students in a piloting activity to aid in removing questions that might not be relevant and to remove any ambiguity from the questions. The questionnaire highlighted the natural and daily environment that students were exposed to and the type of quality associated with the experiences of these students. Students' experiences were used as a benchmark to evaluate the insights obtained from Phase 2, the interviews, in addition to the theory obtained from the literature reviewed.

In Phase 2 of the research study, semi-structured, face-to-face interviews were held with key stakeholders at WBS and Wits University. All participants were identified primarily through the head of school at WBS and senior team leaders across the university. The stakeholders were handpicked as leads that aligned across WBS as digital leaders towards driving digital transformation. Their roles might primarily align with those of senior management committees (MANCO) at WBS. Specifically, the list of stakeholders included senior leaders in very distinct areas of the WBS value creation chain; i.e. roles in finance, procurement, marketing, IT, operations and others. The other stakeholders identified as non-senior (non-MANCO) members were chosen on the basis of their involvement and expertise in the digital transformation processes. Senior academic staff were identified and included in the study. Overall, this study aimed to include students' experiences and the experiences of all those participants relevant in ensuring the success of the WBS digital transformation journey.

The questionnaires and interviews were based on the interview guide, which the researcher drew up in accordance with Evans' Digital Transformation Framework (Evans, 2017), as highlighted in Chapter 2 of this research report. The aim of this approach was to keep questions as open-ended as needed, to allow the researcher to gain deep understandings and allow the students and stakeholders to feel comfortable and express themselves openly without any constraints. The questionnaires took approximately 20 minutes to complete while the interviews lasted an average of 60 minutes, in order for the researcher to connect deeply with the interviewees and gain valuable insights from them.

3.3 Population and Sample

The concept 'population' covers a group of individuals that may share common characteristics (Zikmund, Babin, Carr, & Griffin, 2013). The identified population was the group of individuals associated with WBS. This was further segmented into two semi-targeted populations, one being the WBS student population and the second population group including senior executive committee members (MANCO), administrators and academic employees, which included a sample of senior team leads and non-senior team leads working towards or aligned with driving digital transformation across WBS and leading to its success.

3.3.1 *Sample and Sampling Method*

For a research study to be credible, sampling is another important element of research that should be identified, as it is critical for the validity of the results (Morse, 2015).

Phase 1 sample: The target population consisted of WBS students, with the aim of evaluating their experiences at WBS. The sample of individuals was taken from the population of students from the Masters of Management in Digital Business (MMDB), Masters of Business Administration (MBA), Postgraduate Diploma in Business Administration (PDBA) and Postgraduate Diploma in Digital Business (PDDB) programmes across the academic years 2019 and 2020. The sample size was 160 students across the MMDB, MBA, PDBA and PDDB programmes.

Phase 2 sample: The target population was the senior and non-senior team members that were engaged in digital initiatives for WBS. The sample included senior marketing, finance, IT support, operations, administrative and academic officers. This sample was

aligned to the semi-structured interview phase of the research process. The sample size was 15 stakeholders at Wits University, including WBS.

Both phases of the study employed non-probability sampling methods. Under the range of non-probability sampling methods, this study made use of the purposive and snowballing sampling methods. Purposive sampling allows for an active selection of the most productive sample for addressing the research problem study. This sampling method was employed in Phase 2, when applying judgement to the selected individuals from the senior team and non-senior team members of WBS who were aligned to digital initiatives for the progress of digital transformation at WBS.

The researcher employed snowballing sampling techniques to network and used her relationships with employees to access the database for the WBS group of students to send out the questionnaires. However, snowballing techniques influenced the access to other out-of-scope representatives across Wits University who were involved with the greater digital strategy employed at group level and thus relevant to the study. Policy documents were gathered directly from the Wits University intranet and official Wits University website.

Table 1: List of Respondents from Relevant Business Units

No.	Interviewee	Business Unit
1	Respondent 1	WBS Digital Business
2	Respondent 2	WBS: Finance
3	Respondent 3	WBS: Marketing
4	Respondent 4	Wits ICT Support
5	Respondent 5	WBS: Digital Business
6	Respondent 6	Wits Business Intelligence Services
7	Respondent 7	Wits School of Business Sciences
8	Respondent 8	WBS: Marketing
9	Respondent 9	WBS: Operations & Facilities
10	Respondent 10	Wits Plus & Digital Courses
11	Respondent 11	Wits Graduate School of Business
12	Respondent 12	Wits School of Business Administration
13	Respondent 13	WBS: Human Resources
14	Respondent 14	WBS: Digital Business
15	Respondent 15	WBS: Marketing

Table 2: List of Policy Documents

No.	Document	Policies & Documents
1	Document 1	2020: Budget Presentation Service
2	Document 2	Academic Workload Policy
3	Document 3	Digital Learning – Teaching Strategy Implementation
4	Document 4	Wits Digitalisation
5	Document 5	DMP – Data Management Plan
6	Document 6	Finance Admin Strategic Plan
7	Document 7	Governance: Role of Governance in Cyber Security
8	Document 8	KPA: 6.1 – Online Capabilities
9	Document 9	Wits Integrated Value Chain
10	Document 10	Wits ICT service offerings 2020–2022
11	Document 11	Wits Digitisation Centre – 2015
12	Document 12	Strategic Plan for eResearch
13	Document 13	Procurement Policy 2017
14	Document 14	Policy Framework – V20191015

3.4 The Research Instrument

As the study was conducted in two phases, two different instruments were employed in the study. The researcher ensured that both instruments aligned with and covered digital transformation themes.

Phase 1 employed a questionnaire. This followed a structured approach as the questionnaire was digitally sent out to the groups of students to gain insights from them. It employed open-ended questions, with empty textboxes allowing students to provide differentiated opinions, while some questions were structured using various scales such as ordinal, nominal, interval and ratio scales. The questions were developed on the basis of the research objectives set out in Chapter 1 and conclusions drawn from the literature review presented in Chapter 2. The questionnaire is attached in Appendix A.

Phase 2 employed a semi-structured interview with open-ended interview questions. The interview guide consisted of questions that were derived in conjunction with the objectives of the research study as set out in Chapter 1 and research questions

highlighted in the literature review in Chapter 2. WBS is geographically located in Parktown, Johannesburg and interviews were planned to be conducted on the campus. Unfortunately, owing to the nature of the Covid-19 pandemic and lockdown protocols, interviews for the study had to be conducted virtually, through Microsoft Teams, an online meeting platform, which was the most appropriate and comfortable platform for all interviewees during the course of the pandemic. The interview guide is attached in Appendix B.

With the research study objective being to evaluate digital transformation at WBS, it was important to gain insights from the students (clients) of WBS as well as an internal perspective of the digital transformation initiatives, adoption and adaptation across the digital experiences and knowledge of digital technologies. Qualitative research is often shaped through expanding themes that are generated through the interview process, which are further refined and critical to the study (Dubru, 2017).

The questions designed in both the questionnaire and the interview guide sought to explore and extract prominent themes that emerged in the context of digital transformation from both the client (student) and WBS perspectives. For this purpose, the questions were open ended and allowed room for flexibility of answers.

3.5 Procedure for Data Collection

The procedure for collecting data in Phase 1 took the form of open-ended surveys to obtain insight into the students' experiences. In Phase 2, the procedure used was the semi-structured interview, which is a common method used in the collection of data as interviews provide direct insights and focus on the interviewee's personal perspectives, understanding, knowledge and contexts (Ritchie et al., 2013; Zikmund et al., 2013).

Phase 1: The questionnaire was developed using Qualtrics, which is an online survey tool that is used to develop and distribute questionnaires. It also allows the researcher to analyse the responses on the same platform (Qualtrics, 2020). The questionnaire was generated as a test series initially and was forwarded to five students within the MMDB group to assist in removing any errors, ambiguities and out-of-context insights. Following this pilot, the questionnaire was updated by the researcher on Qualtrics. The researcher then requested the Wits University Registrar's office to forward the questionnaire to WBS (MMDB, MBA, PDBA and PDDB) students to complete. The email that was sent to students provided them with a high-level overview of the research study and the purpose

of the study. Students reserved the right to remain anonymous when completing the questionnaire. Students were provided with a first email and a period of 30 days in which to complete it. At the end of this period a reminder email was sent out to students to extend the duration and give them additional time in which to complete the questionnaire. In this way, the data-collection process of the questionnaire lasted a period of two months. The questionnaire requested students to insert their student numbers and name and surname to ensure that no student completed the questionnaire more than once, to prevent any student trying to skew the data with more than one response. The data was collated on Qualtrics and retrieved for analysis. The questionnaire referred to can be found in Appendix A and the email letter forwarded to respondents is in Appendix C

Phase 2: Interviewee details were sourced from the head of WBS and the head of digital business, who informed the researcher of relevant senior team leads who worked closely with digital initiatives at WBS. The identified interviewees were contacted via email, requesting permission for their participation in the study. The email provided a high-level summary of the research topic and scope. The email was sent out two weeks prior to the start of the interviews. Once interviewees had agreed to participate in the research study, they were provided with a consent form and interview guide as formal notification of their agreement and willingness to participate in the study. The interview guide is attached as Appendix B and the formal request email as Appendix D. The interview was conducted by the researcher, via Microsoft Teams. All interviews were recorded via Microsoft Teams, downloaded on to the researcher's personal laptop and later transcribed through a digital transcription service provider, Sonix, which is password protected with the researcher's personal login credentials.

3.6 Data Analysis and interpretation

Phase 1 of the study was carried out through the digital platform Qualtrics, whose software not only assists in formulating and sending out the questionnaire but also uses digital capabilities such as machine learning, artificial intelligence and natural language processing to assist with analysing the data received. The data was analysed with the use of Text iQ™ on Qualtrics (Qualtrics, 2020), which assists in defining the most actionable insights that are hidden among text responses. With the use of powerful machine learning and language-processing identified codes (keywords), Text iQ™ discovered patterns and trends that mattered most to the students. The language processing organised comments by topics and also assigned sentiment scores to open

text feedback. All discovered topics were integrated. Furthermore, it highlighted key priority drivers that were impacting the students' experiences.

Phase 2 of the study used a thematic network model to analyse the responses (data). This particular study also allowed for new emergent themes to arise during the interviews. The thematic network model was adopted from Attride-Stirling (2001).

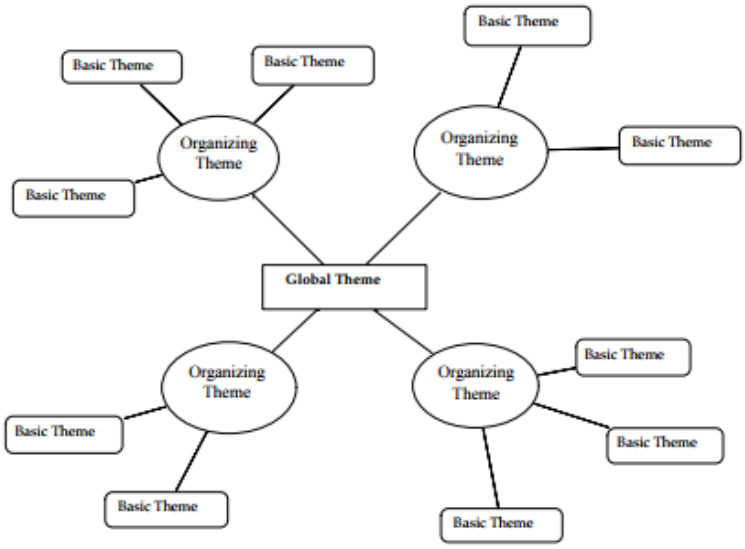


Figure 11: Structure of Thematic Network (Attride-Stirling, 2001)

As this study involved interviews and was reliant on the interpretation and perspective of the interview respondents, it was mainly inductive in nature. This meant that no specific hypotheses were identified upfront. Common themes were outlined during the course of the interviews and were grouped to highlight the validity of the research questions (Ritchie et al., 2013). The thematic network approach by Attride-Stirling (2001) is a useful tool as it entails numerous steps to aid in identifying themes and abstracting or refining themes as they arise. Nvivo, a data-analysis software, was utilised to code, import and analyse data. Figure 12 below presents all the necessary steps involved in the data analysis (Attride-Stirling, 2001).

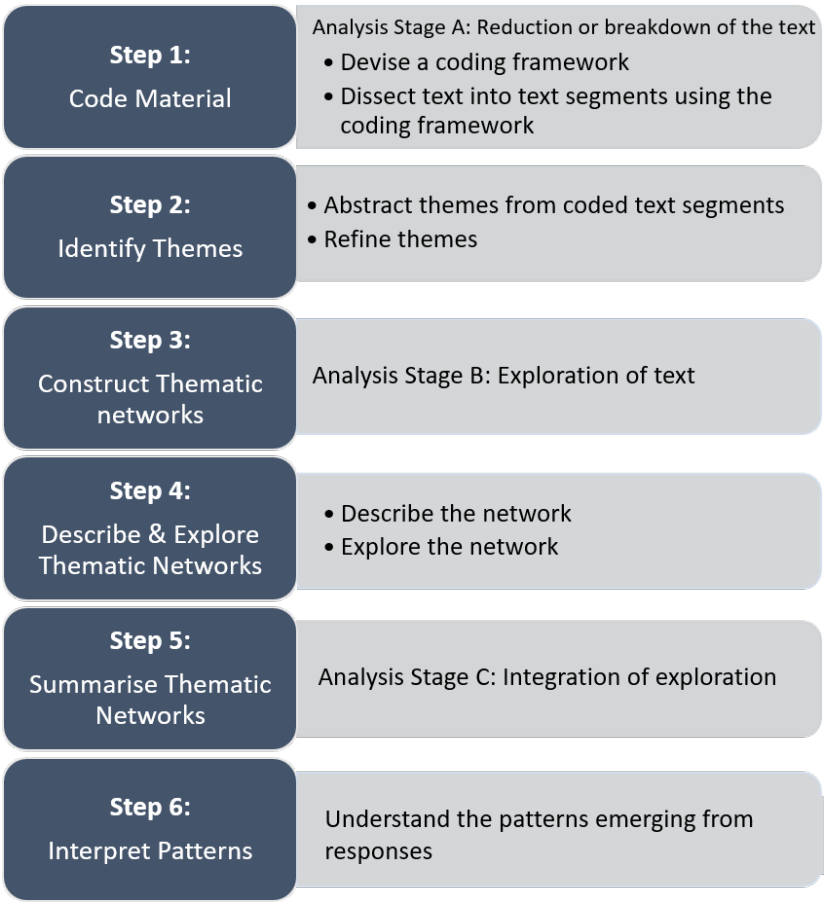


Figure 12: Steps for a Thematic Analysis (Attride-Stirling, 2001)

The data analysis followed a triangulation approach, in which the researcher analysed different data sources and attempted to mitigate any personal perspectives and biases from the research, to safeguard valid interpretations and perspectives of all respondents (Fusch et al., 2018). With the concepts of digitisation and digitalisation applicable across industries and markets, these concepts reflect a social paradigm shift, making the triangulation of multiple data sources useful as an aid in clarifying the objectivity and validity of the data collected (Fusch et al., 2018). According to Stavros and Westberg (2009), the triangulation of multiple data-source applications can enhance the reliability of a study's results. The use of data triangulation allows different data points to interrelate with one another as commonalities are discovered within the same social settings (Fusch et al., 2018; Houghton, Casey, Shaw, & Murphy, 2013). The researcher made use of the blended design in data triangulation, which involves looking at multiple perspectives from the data collected and takes into consideration multiple phenomena to aid in mitigating bias from one point of view and thus aids in increasing the depth of the study results (Creswell & Tashakkori, 2007).

The data was simultaneously compared and contrasted with multiple sources, which included student questionnaire responses, employee interviews, primary observations, and university documentation and information. These sources aided in identifying and highlighting the significant themes, keywords, key phrases and commonalities that arose from the sources, which were also compared to the literature reviewed as presented in Chapter 2. The data from the survey responses was sorted in accordance with the themes identified and voice-recordings of each interview were transcribed through Sonix.AI and compared to the researcher's written notes that had been made at the time of the interviews. This was undertaken to ensure the completeness and accuracy of the information transcribed. Following this process, survey results, transcriptions, policies and other data were imported and uploaded to NVivo to follow through with the coding process and analysis of different information collated from the multiple sources.

3.7 Limitations of the Study

Research studies often face a number of limitations owing to the nature of the problem that the researcher may be trying to resolve. In relation to this particular study, the following limitations were identified.

**Internal perspective*

This study was primarily concerned with the internal perspective of senior and non-senior team leaders and academic staff at WBS and additionally a few hand-selected employees at Wits University, who were directly engaged with the digital initiatives of the digital transformation process, with administrative employees involved as well. This excluded other internal employees such as other professors, lecturers, service operation employees and others who were not directly involved with digital initiatives or had any influence on the digital transformation processes. Their engagement with students and their experiences first-hand with technological challenges might sway the themes identified in the research study.

**Lack of external validity*

All responses, findings and other information were specifically aligned to the case study of WBS within Wits University. The aim of the study was to evaluate the particular state of the WBS case within the greater context of the university. This differs from other cases within similar contexts. Various themes may align, but the impact and significance may be different within the closer context of the particular school. The feedback may be

reviewed and taken into consideration within the global context of Wits University at a higher level, after considering the inter-connectedness of similar themes, but the findings cannot be directly correlated across all cases and thus cannot be related to other parts of the Wits University environment. These findings may not be generalised as WBS is a particular sub-segment of Wits University.

**Alignment to the Group Digital Business Strategy*

This research study primarily focused on WBS. However, the school does not exist in isolation and therefore there might be an overlap with the Wits University's group digital strategy and digital transformation.

**Missing insights*

This study conducted interviews with mainly senior stakeholders and other non-senior stakeholders, such as administrators, who were aligned to digital team leaders for digital transformation or digital processes. However, without the insights of many other specialised professionals, academic experts in other fields and lower management employees at WBS, certain insights may have been missed.

3.8 Transferability and Dependability

Quality assurance of the data in any research study is an important facet of ensuring that the data can be deemed trustworthy (Morse, 2015). This further signifies the credibility of the data (Morse, 2015; Tracy, 2010). Furthermore, each stage of the analysis process needs to ensure that trustworthiness is established (Nowell, Norris, White, & Moules, 2017). The criteria of transferability, credibility, dependability and confirmability can be provisionally assessed to validate the trustworthiness of this research study through the adoption of the qualitative research method (Morse, 2015; Nowell et al., 2017). These criteria as they apply to the research study are outlined below.

3.8.1 *Transferability*

The outcomes of the research study may be transferred across other schools or faculties within Wits University, using different sets of participants, within the context of the target audiences required. Specific stakeholders may be selected and are highly dependent on the case study under review. Transferability should be well documented and follow a structured approach utilising the overall description of the research study but steering in

the context of the particular case study, without necessarily claiming generalisation of this study's results to the next. Findings may be similar or significantly different within the context of the case.

3.8.2 *Credibility*

'Credibility' refers to the internal validity of the data and ties in with data-collection methods such as interviews, prolonged engagements and peer-reviews (Morse, 2015). For the purpose of this research study, credibility can be recognised through the iterative consistency of approach for each interview using the interview guide and approval of transcripts during the data-collection phase of the interviews. Coupled with the questionnaires from the students, primary observations of the researcher and key information sources, guides, presentations and policies from Wits University, the research process enabled the researcher to obtain an understanding of the culture, beliefs, adoption and adaptation technologies of all participants.

3.8.3 *Dependability and Confirmability*

With the provision of an in-depth description of the methodology used for this study, dependability and confirmability were accounted for. The methodology adopted by the study allowed the research results to be critically assessed and scrutinised. Furthermore, the questionnaire and semi-structured interview were built around the themes of the study in relation to the objectives described in Chapter 1 and the research questions listed in Chapter 2.

3.9 Ethical Considerations

The study factored in the applicable ethical considerations during the course of the research. Multiple factors were considered, amongst which were:

- *Informed consent or permissions to participate*: All participants were notified prior to participation and asked to provide their permission and agree to participate in the study.
- *Reserving the right for anonymity and confidentiality:* All participants reserved the right to remain anonymous and could trust that their responses would be collated in full confidence, to gain honest opinions from the participants.

- *Respect for privacy:* All participants had the right to reserve any private information pertaining to the school or its internal projects and were not pressurised to provide more information unless they were open to sharing their perceptions further.
- *No harm or offence inflicted on the participants in any verbal or physical way:* All participants were directed in a professional manner.
- *Voluntary participation:* All participants were invited to participate but were not under any obligation to participate; participation was voluntary and could be disregarded at any point during the interview or survey if the participant felt sensitive towards the topics being discussed.

CHAPTER 4. Presentation of Results

4.1 Introduction

Chapter 4 presents the findings of the study. The findings of the data from the research study have extracted the most common and pertinent themes that surfaced. The respondents (students and staff) provided honest answers to the interview and questionnaire questions, which led to the derivation of the themes through the use of TextiQ™ on the Qualtrics and NVivo platforms. This process highlighted keywords, phrases and sentiments from students and staff. Multiple data sources, including student responses collated on Qualtrics, were imported into the NVivo software, which assisted in generating the thematic network from the data collated, as discussed in Chapter 3. Furthermore, triangulation of data sources highlighted the depth of the themes and uncovered the interrelatedness of the commonalities between students' adoption, adaptation and assimilation of technologies in the customer service deliverables and their engagement with digital service platforms. It also highlighted commonalities raised by the staff, Wits University policies and the observations of the researcher, who was both an employee and a student at Wits University. The sentiments collated are a true reflection of respondents' current experiences and what they believe the future of the business school should be in a digital business environment.

To capture the sentiments of the respondents, the researcher made use of additional artefacts such as word cloud computing, natural language processing, keyword analysis (positive and negative keywords) and, particularly, the use of verbatim interviewee responses. These responses were specifically selected to emphasise crucial sentiments, perspectives and ideals. The findings of the study are outlined following the same framework structure (Evans, 2017) as set out in Chapter 2, and the themes that emerged from the data collated. The data was collected using the methodology explained and outlined in Chapter 3.

The research questions were as follows:

1. What is the digital maturity of WBS?
2. What are the essential building blocks to implement the digital transformation strategy?
3. Does WBS have a digital transformation strategy to deliver on its digital promises?

4. Are all the relevant factors in place for a digital environment to grow and thrive?
5. What are key factors hindering the digital transformation process?

Before beginning with the interview discussions, it was important to uncover the individuals' understanding of the concepts of digitisation and digitalisation, in order to establish a common basis from which to proceed with the discussion. All respondents shared their thoughts about and understanding of digitisation and digitalisation. Many of the ideas expressed about the concepts were consistent but some respondents needed to be provided with further insight before beginning; however, these individuals were competent enough to answer questions aligned to the concepts.

Figure 13 below illustrates the evolving themes presented in the results, beginning at the centre with the global theme, followed by the growth of the organising themes and then on the outskirts the basic emerging themes that were uncovered through the data analysis.



Figure 13: Thematic Analysis of Findings

4.2 Description of the Sample

The study used multiple data sources: a total of 15 employees across Wits University and WBS were interviewed; 160 students were surveyed; 14 different policies were reviewed; and first-hand observations were made by the researcher. A list of the interviewed respondents and their respective positions is provided in Table 1 (see Chapter 3, Section 3.3.1 above). Snowballing and purposive sampling techniques were used to identify and select the 15 individuals across WBS and Wits University that participated in the semi-structured interviews. Wits University was selected as a big contributor to WBS business activities and decisions; thus, a number of respondents from Wits University were selected to be interviewed. These respondents were suitable for the research as they had the appropriate knowledge, skills, roles and experience and were directly linked to digital initiatives through their positions across the university.

Furthermore, this selection of respondents enabled the researcher to gain a broader perspective of different leaders across different business functions that were involved in digital transformation or digital developments at the university. All the interviews were conducted online and recorded via Microsoft Teams. The students that were surveyed came specifically from WBS, across the MMDB, MBA, PDBA and PDDB courses. All of the respondents were postgraduate students and were studying on a full-time or part-time basis at WBS. Other information sources were found through the official Wits University website and intranet.

4.3 What is the digital maturity of Wits Business School?

To answer this question, the researcher examined the university policies, made observations and investigated the respondents' (students and staff) general understanding and experiences of the current level of digital maturity at WBS, encompassing all current digital investments, applications, processes, software, automation services and customer experiences as a whole. The investigation uncovered both the current level of maturity and the desired state of maturity of the institution. Importantly, a relationship that indicated an interconnectedness between WBS and Wits University was uncovered.

Digital maturity is a complex and broad phenomenon and thus it was important to obtain the individuals' understanding of the concept and establish a common ground from which

to proceed with the discussion, with a specific focus on ensuring that all areas around digital initiatives, digitisation and digitalisation were included.

Interviewees across both WBS and Wits University communicated their opinions regarding digital maturity as they understood it, through the generic use of a five-point Likert scale, where position one was the lowest and position five was the highest classification option. The digital maturity evaluation followed the Digital Maturity Model (elaborated on in Chapter 2) in considering the combined capabilities of leadership and digital. The data indicated that the opinions expressed by the majority of the respondents showed many consistencies in their articulation of the digital maturity concept and their evaluation of the digital maturity of WBS. However, a few unique sentiments were shared, based on respondents' individual experiences.

"We are at a one, at most maybe a two, because we are seeing small digital activities taking place, but we are not seeing like organisational level benefits yet, we don't see any big plans for digitalisation, so yes we have new technologies, but are they really for a greater purposes?" Respondent1

"Honestly, I don't think we are ready. We are definitely a one and again, this could just be me being overly critical, but I don't see how we can be higher than a one, when we can't get simple things like online applications for short courses digitised." Respondent8

"On my first assessment, since I'm only here for a year, it's definitely low and probably a one or two. The reason I say this is simple, constituents are still complying to a large amount of manual labour, manual processes and, shew, to beat it we still want students to come hand deliver applications in 2020 no ways man." Respondent15

"We may have nice new smart classrooms, and improved Wi-Fi and maybe some other technologies like Sakai and things, but I don't believe we are more than a level 2, we are between one or two. There is a lot that needs to be done still even though now we are in Covid and we need to work digitally from home, many people are not ready and don't know how to do this." Respondent11

While respondents acknowledged that digital initiatives have been gradually increasing over the last few years, they perceived a high level of reluctancy from leaders across both WBS and Wits University to adopt and adapt new technologies and develop new ways of conducting business practices. Respondents believed that there is no goal in sight and that leadership is not effectively communicating a drive towards fundamental digital changes that need to be made. This was highlighted in the following comment.

"We have urged our senior leaders to consider new technologies in order to improve customer experiences and student engagement overall, but things take extremely long to get done, I mean for example, they see our ideas, but nothing happens, sometimes if something happens it takes two to three years before its finalised and implemented." Respondent8

In conjunction with the perception of leadership as being reluctant to embrace new technologies, respondents shared that leaders are stuck in the old and current governance processes and policies that they need to abide by. Respondents found that leadership strictly stays in line with university policies and is not looking at adapting these policies to becoming more flexible towards new ways of conducting business activities. Furthermore, as pointed out by respondents, this has an effect on the overall business and there has been a recognisable loss of new business opportunities.

"We know we need to follow policies, and decisions cannot just be made easily, but the timelines are very long, we have lost so many opportunities over the last years because we do not have digital capabilities and other requirements from our executive education streams, all we ask our head is to acknowledge this as a problem area for our business, they need to become flexible, it cannot take months for approvals, we are losing business." Respondent2

"I think WBS needs to train and improve their resources, both digitally and from customer services, administrators need help. The head needs to see these challenges and feedback that we give, we need a business school that is advanced, they are teaching us, but are slacking in their own business operations." Student Respondent

"Getting responses from admin and academic staff at WBS, is a nightmare, there's always someone they need to refer to, or get in touch with before they can provide us with the information or process etc that we need." Student Respondent

"Phew! WBS follows very old and outdated process, we have to come in for general administration issues etc to be resolved, just coz they can't do things effectively through digital means, even if its basic communications." Student Respondent

'Leadership capabilities and actions' was the significant theme raised by respondents. However, very interesting perceptions and opinions were shared regarding the digital initiatives and digitalisation at WBS and across Wits University. Respondents acknowledged that the university is investing in new digital technologies for sub-segments within the value chain, to optimise processes. Digitalisation requires redesigning of business practices across the organisation, including infrastructure, processes, technology, people and how they work in this digital environment. Respondents shared that there is a strong sense of digital that has come through or is expected to come through in the near future for Wits University and more so for WBS.

"There is a lot of room for improvement, as time passes we seeing investments going into new digital technologies and these need to be carefully considered, we see that the leaders have acknowledged and changed their mind set towards digital, they have become supportive, however there is a lot of speed bumps and blockages along the way. Like project quantum, was massive for the university as well as this new smart classrooms that have been placed here at WBS, this is big investments and yes people still need to adapt

to some changes, we definitely gearing up, but the question remains, if we doing this quickly enough?" Respondent4

For some respondents, another critical area for universities apart from customer service was the digital adoption and adaptation to online teaching, online learning, online assessments and other digitally related capabilities. Assessing how the university is conducting online or digitally related practices, Wits University has a number of different digital platforms that are being used by both employees and students for similar purposes. These technologies are useful and have been part of the learning management system for a number of years now, with some minor improvements along the way. However, although this may increase the digital maturity of the university from a digital resource perspective, student engagement with these platforms impacts the overall perceptions of the level of maturity of digital technologies. Student responses indicated the following:

"Having multiple platforms, to access for specific information, is so confusing and complicated." Student Respondent

"Multiple platforms often mean that the platform architecture hasn't been thought through." Student Respondent

"Why isn't there just one website or app that is associated to a student, and you can access everything, like your banking app, we get our history, current student details and accounts, marks and some new things we can think off, this is so ineffective." Student Respondent

Whilst it may seem that most students raised challenges regarding platform engagements, there were some students who expressed different opinions.

"The platforms work well, if we have enough training, I think it's not necessarily the technology that is the issue, but rather as students we don't get enough training on what needs to be done." Student Respondent

"The different platforms, have never really been difficult or given issues, yes from time to time there is technical challenges but isn't that normal with all things." Student Respondent

"The functionality of the platforms is fine and I work well on it." Student Respondent

Many digital projects have been prioritised across the university over the last few years. Some of the fundamental digital shifts have been social mobile adoption, an increase in real-time engagements and rapid changes to traditional business practices. Most important has been the change in customer perceptions and adoption of new technologies and newly formed ways of doing things. This was highlighted in a statement by one of the interview respondents.

"Our students are driving our changes, we gain insights on the challenges our students are going through and are moving forward to eliminate many of those changes though new digital and technological investments." Respondent2

Holistically, students are the drivers of the changes required at WBS, primarily because of the lack of a strategy or digitalised vision for digital changes. These changes were recognised by respondents as *"on the go"* (Respondent 1), *"adhoc"* (Respondent 5) and *"need changes"* (Respondent 2). Respondents perceived these changes as plug-ins to remove current challenges, with some potentially increasing customer service efficiencies and others aimed at increasing productivity. However, one respondent highlighted the following:

"Digitalisation across any industry is seemingly based on or driven by societal and customer changes, which in turn is based on new technological advancements, this is rapidly increasing, while ironically this is a full mind-set and culture change of individuals." Respondent14

Another respondent shared a slightly different opinion in stating:

"Digitalisation requires an assessment of capabilities in order for any organisation to process, are individuals really ready to participate with these new digital technologies or is it more of a physical transformation and mind-set that needs to change, it could be both." Respondent10

In contrast to the overall sentiments expressed by the interviewee respondents, the university displays a different thought process and plan in its documentation. According to Document 4, digital intelligence is the centre of gravity for change in digital business, and customers' insights are channelled through to the centre for prompt changes, as indicated in Figure 14 below. The university does not necessarily see customers as the central point that drives the need for digital transformation.



Figure 14: The Centre of Gravity Changes in a Digital Business (Document 4)

Furthermore, the university and WBS have seen a rapid increase in digital adoption and adaptation from students and staff as a result of the Covid-19 pandemic, which created a need to shape shift and adapt quickly to new ways of doing things. The Covid-19 pandemic has led WBS and the university to procure new and better digital technologies and digital solutions and to the university creating a digital culture and mind-set shift, so that almost all business activities, teaching and assessments, and many other priorities can be handled through an online, automated and digitised solution.

"With Covid-19, we now are teaching online, something we should have been doing from a long while back, but nevertheless, it has basically forced all programmes to become online, we had to find new ways of teaching our material." Respondent1

"Covid-19 definitely spurred the digital growth for the university, in a few weeks to a few months, every individual had to adapt quickly and figuring out new ways of doing things. Even those professors and lecturers that didn't believe their programmes or courses can be moved online, were now moved online, and wow can you believe it, it's working well, it may not be perfect but at least we can continue our academic year." Respondent6

This sudden impetus to digitise the university, and therefore to adapt and adopt new methods, has not just resulted in a change to new ways of doing things through new technologies. It has further created the paradigm shift and mind-set change needed within the community of the university. All parties needed to adapt as quickly as possible, to ensure that they did not lose out on opportunities. Evidently this pandemic has had a positive impact on the university from a digital stance, as indicated by some of the respondents.

"We have been pushed out of our comfort zones and we had to adapt quickly and find the best possible solutions to assists staff and students, it was a nightmare we could have avoided to some extent, if we were at a higher digital state, but nonetheless, we figured it out and now I can only see us moving up and out to better ways of doing things." Respondent3

"I think the university has seen the importance of digital needs now, it was a real eye opener. I'm sure going forward we going to be getting better at all this digital things." Respondent15

This pandemic further increased the digital skills and competencies of individuals, as respondents felt they were now more competent and were more confident about doing things within a digital business environment.

"Many lecturers were hesitant initially to move online, but with training, constant support and tons of phone calls we really made it happen. Ultimately, in my perception I think people are just fearful and scared because these technologies are very new and no one has taught them these things before." Respondent4

"With the staff being better digitally equipped, we are seeing real progress and also a new drive from staff to do things differently. Also this pandemic gave us room to explore what options work for the university and what doesn't, what challenges we facing and has provided many other insights." Respondent6

With the increased buy-in from the university community across all levels of engagement, senior management has placed digital adoption and adaptation of new technologies at the forefront of its priorities since the Covid-19 pandemic, and in October 2020 Wits University hired its first ever digital officer. Respondents expressed excitement about seeing where the university is headed with the new appointments of not only the digital officer but also a new vice chancellor (Professor Zeblon Vilakazi) and Head of Business School (Mr Maurice Radebe). Respondents mentioned some new and exciting ideas that they planned to raise in the coming months.

"At the end of the day, we just want to be better for our students and this means we need to improve ourselves digitally, teach digitally, align our material for teaching to suit the digital environments and so much more, we should be excited." Respondent12

"We need to be in tune with our customers, we must find new ways and inspire them too, not wait for them to tell us more of what we should be doing, we should know what we need to do." Respondent8

The paradigm shift generated by the Covid-19 pandemic has increased the need for the university's workforce to become more digitally skilled, capable and improved. Students are at the heart of the university institution and therefore respondents acknowledged the insights and feedback they received in order to provide better and more informed customer services for their students.

4.4 What are the essential building blocks to implement the digital transformation strategy?

Research question 2 sought to uncover the perceptions concerning the building blocks necessary for implementing a digital transformation strategy at WBS. Multiple sources of data included university policies, observations and respondents' perceptions (students and staff) in this data collection. The respondents did not predefine or point out overall building blocks directly but rather alluded to specific building blocks that resonated with the generic tiers of speciality as set out in Evans' Digital Transformation Framework (Evans, 2017).

Digital transformation was highlighted as a fairly new concept by many of the respondents. It is also a broad phenomenon that is continuously evolving and rapidly

improving. Thus, it was necessary to establish a common understanding of the essential meaning of digital transformation and gain insight into individuals' understanding of the concept to ensure that all digital and non-digital concepts, initiatives and digitalisation facets were covered in the interviews and survey.

The data collected was analysed for emergent themes, as indicated in Chapter 3, which describes the methodology used in the study. These themes were related to high-level themes derived from the literature reviewed as set out in Chapter 2, specifically as they related to Evans' Digital Transformation Framework. The framework encompasses the four pillars which can be further acknowledged as the high-level themes of digital transformation: Strategy and Vision, People and Culture, Processes and Governance, and Technology and Capabilities. These have been used to order the findings from the analysis of the data. Respondents shared commonalities regarding what they believed to be the essential building blocks for improving the digital transformation journey across WBS. The responses are presented in the sub-sections below, beginning with the theme of People and Culture, as leadership was discovered to be a core building block.

4.4.1 *People and Culture*

The majority of the respondents highlighted 'Leadership' as the core building block required to empower a digital paradigm shift at WBS. This was considered important for the following reasons:

"Our leadership keeps changing, making it increasingly challenging for us to follow through with big changes." Respondent8

"We have had leaders coming and going, almost every two years we have a new leader head, new strategy, new process to follow and basically we start from scratch and never seeing anything through to the end. The problem in this is that just as staff are getting into the process of the new methods etc, a new person in beginning to step in, most critically we are getting stand-ins who do not critically understand the type of business that we have." Respondent2

"As you know, we are getting a new head of school by the 1st of January 2021. So we have had it with changes in leadership for the past two or three years now. So the fact that there was a gap in the leadership, some of the things could not be done particularly at all. But we also understand that full embrace of the idea and its capabilities will allow this to cater to more students." Respondent9

These sentiments highlight the importance of having a stable leadership at WBS. With heads of school changing, other heads intervening for short periods of time and a constant flux of changes in leadership, this has had a negative impact on employees in numerous ways. This constant change in leadership has further impacted the

respondents' levels of productivity, motivation and aspiration towards creating and implementing new ways of working, as indicated in the quotations below.

"If we can have a leader who stays it would be nice, changing strategies every few years does not allow us to follow through and see our projects to the end sometimes. We lose motivation, because someone new is going to come in and change things again in a few months. We need to know where we are headed and what process we are following to get there, even if a new head of school comes in the basic context should stay so we don't keep moving in circles." Respondent2

"So I think leadership is a critical factor to build on, and I think WBS needs a champion leader, who is willing to push the agenda of digitalisation, currently its temporary leadership, following a 'let's carry on with business as usual and just adapt here and there as quickly as we can to continue'." Respondent14

Respondents strongly affirmed that constant changes in leadership and strategy development have led to frequent changes, inefficiencies, cost increases and no clear goals in sight, whilst productivity and student numbers are steady and unchanged.

"In essence, the story is that the team needs a leader who is passionate about pushing this particular digital transformation agenda. And I'm not sure that leader is in place yet right now." Respondent8

In general, in the sentiments shared, the specifics or a specified type of leadership required for digital transformation in a university business school was not identified.

"It is important that we have a leader that is agile, digitally knowledgeable and knows how these new technologies impact our business and what we need to do." Respondent8

"I think the main priority as WBS, is that there is no leader driving a digital forefront, they are still doing things the old fashioned way." Student Respondent

"WBS needs a leader who is willing to take risks and be open to new ways, we are the market and we have customised needs now, they can expect us to follow old traditional ways of doing things, like hand delivering our applications, coming into university to resolve an issue, we can do so much through the internet." Student Respondent

"WBS doesn't have a visionary digital leader, they don't see how digitalisation is disrupting this industry, because they are not digitally savvy themselves or they don't understand this digital business." Student Respondent

Many respondents shared similar views about the type of leader needed. These included a transformational leader with additional attributes, such as adaptability, flexibility, open-mindedness and willingness to take risks. They suggested that the leader should be someone who is visionary and forward looking, and not a follower; they need to be tech savvy, digitally advanced or digitally savvy, someone with a good knowledge of new technologies and the impacts they have or the threats they can become.

Another important sentiment brought in a different perspective.

"I think we need to look for leadership that should have a very interesting prolife, that is consultative in nature, lead from the front end, but be a systems thinker to critically understand this interface of people and technologies and the different touch points, their impacts from both engagement and internal perspectives." Respondent12

The above sentiments align to galvanising the digital world with human interfaces and engagements. Human factors can ultimately be highlighted as prominent and an emerging theme of how strongly leadership plays a role in decision-making processes. Furthermore, leadership is attributed with cognitive and empathic skills that are used to understand the respondents on a personal and yet professional level. This further indicates the significance of leadership as a building block towards digital transformation.

Respondents indicated that overall skills, both digital and non-digital, were important and highlighted a wide variety of skillsets needed to be successful in the digital world and driven from leadership. These include various levels of critical thinking; critical analysis of technological knowledge, data, and digital technologies and their different products and features; cultural and interpersonal skills; leadership skills on different levels; and cross-functional team dynamics, through digital technologies, i.e. adapting to new forms of digital workspaces. One of the most important sentiments in this regard advocated an increase in problem solving, personal traits and customer-engagement skills.

"People are not open minded about this digitalization that's going on. My major challenge is that I do acknowledge that this is a new space that we are getting into. People need to show initiative from their side. When I say people, I'm talking about staff. I think there's a lot of improvement that needs to be done. Managers need to drive this process and I think a lot of people are resisting it, which is why personal upskilling and being proactive when it comes to problem solving is also really important." Respondent5

The majority of respondents highlighted culture as the steppingstone to successful change and skill development. Many respondents shared similar sentiments to the above statements, pointing to a lack of motivation and incentives to help drive their internal self-motivation to improve. They shared that employee encouragement would lead employees to adapt to change and transform their behaviour much faster than before.

"I would think they, employees would be willing given an opportunity, they would be willing, particularly if the people are made aware of, you know, to say, guys, the future looks like this. You know, in this digital space, the future looks like this. Are we ready for this future? Surely if you painted a picture to say the future looks like this and then we look we all look at our skill set, do we match up? Do we have the skills? I think once that is portrayed and people are given that future picture, then I would be surprised if staff members would say, no, I don't. But there's this thing about leadership not informing us about the changes but rather expect us to fall in line and do what is needed. How do we know what is needed?" Respondent8

In line with this, respondents also shared another important sentiment around the importance of increasing engagement between groups, driving group learning and increasing collaboration between the teams or creating cross-functional teams to support different functions within the business school as leadership was not seen to support this notion.

"So there is no willingness from the employees and this is because there is no support or no incentives, like I can work till 3am and make sure I get the work done correctly, but I'll still get the same salary, no over time, no appreciation or simply no recognition either for a job well-done. Sometimes we are helping other teams, yet they are not willing to do the same." Respondent2

Another view expressed by multiple sources and discussions and which came across very strongly concerned the poor administration culture and services at WBS. The administration was described as unfriendly and unwilling to assist students with their queries, and as unable to respond timeously to emails. These and many other facets around administration have led both employees and students to being frustrated and upset with WBS on numerous occasions. This behaviour and service impede the overall culture that is supported by WBS.

"Administration and delivery of post grad modules. Financial administration is a nightmare. Speedier responses to queries." Student Respondent

"No, especially from an administration perspective, they are resistant to change and want to do things the old way." Student Respondent

"The administration is despicable, no matter how many times you have tried each query or email sent through, nothing comes of it and if it does than its useless, they take forever to respond, if not never." Student Respondent

"Poor poor communication from administration." Student Respondent

"Administrations is really poor and thus requires high levelled training, not just from a digital and technological space, but also from an interacting and engaging perspective, they do not know how to deal with customers." Student Respondent

Further examples are included in the screenshots from social media shown in Figures 15 to 18 below.

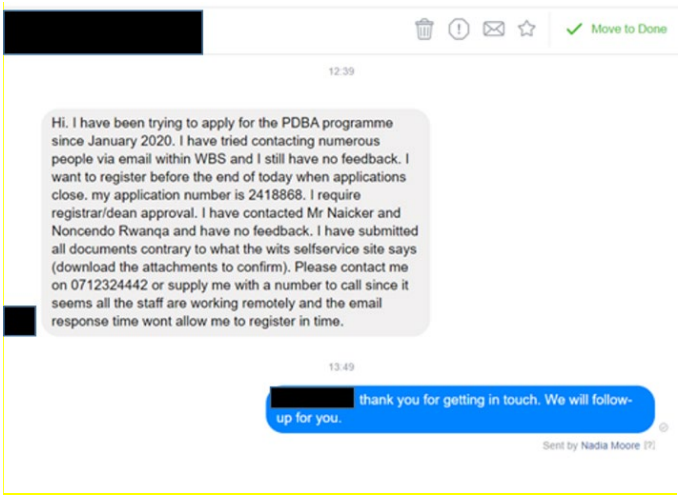


Figure 15: Social Media Administration Issue 1 (Observed Data)



Figure 16: Social Media Administration Issue 2 (Observed Data)

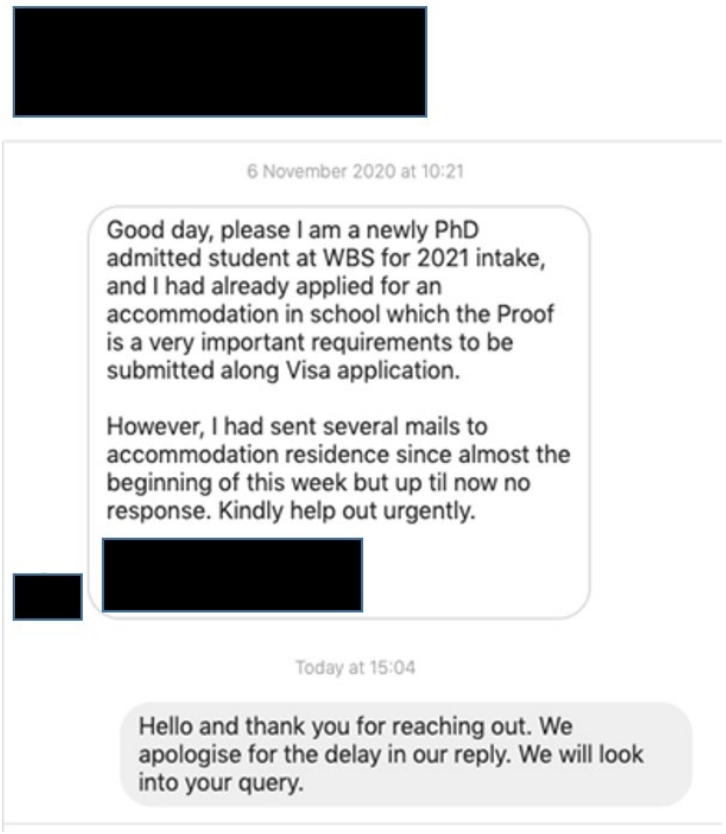


Figure 17: Social Media Administration Issue 3 (Observed Data)

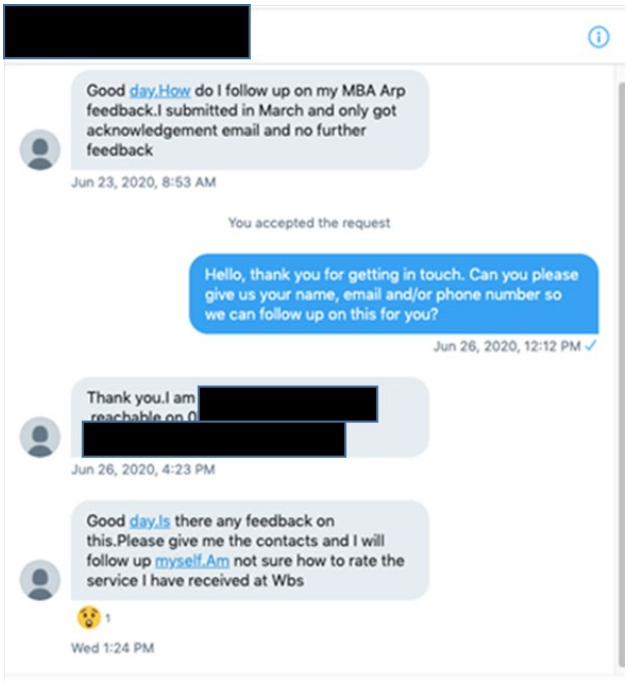


Figure 18: Social Media Administration Issue 4 (Observed Data)

4.4.2 *Strategy and Vision*

"There is no clearly defined strategy, we seem to have pockets of strategy and a few operational interventions, which are not part of a digital transformation strategy." Respondent1

The respondent indicated that WBS is focusing its efforts on improving and increasing digital technologies in pockets of areas, from support services to academic teachings and orientation, which should enhance the overall business model and improve the digital state of the university. However, WBS does not have a defined group digital strategy or vision, which respondents highlighted as a significant facet of digitalisation. One of the most important views shared was that the overarching strategy should significantly outline business goals, with the reason for this given as follows:

"The vision is to evolve both what we teach and how we teach it to continue to be relative in the digital era." Respondent1

The above sentiments share the ideal notion that the vision and strategy are not just about how the institution conducts its day-to-day business activities and services and creates digital autonomy in business operations but also how it incorporates aspects of digital transformation in the content that the institution is teaching. Transforming digitally involves looking at the way in which learning and teaching materials are evolved, what is being taught and how teaching is progressing, from teaching online to understanding how digital technologies influence each area of life. Thus, face-to-face in-classroom teaching is revolutionised into virtual classes, blended learning and fully online options.

The respondents believed that the essential building of a digital strategy and vision for WBS cannot take place in isolation and should be filtering through the interconnected Wits University group-level digital strategy and vision.

"I think it is important to note that, the digital vision and strategy must be developed at Wits Group level for the entire university and then we at WBS follow through with sub-strategies that correlate to that, you know it interlinks, we cannot do it on our own." Respondent8

Furthermore, the above sentiments highlight why it is important that the Senior Executive Team (SET) clearly define the vision going forward and how Wits University will be gearing up to achieving its digital strategy. Essentially customer services are at the centre of growth for businesses; in order for WBS to revolutionise the way in which it is delivering customer services, investments need to be aligned to the digital strategy and vision.

All respondents were cognisant that large investments in precarious digital solutions for the wider community of the university and not restricted or specifically aligned to WBS would be prioritised in terms of the global needs of the university. Furthermore, although an investment hierarchy might be prioritised to align investment decisions and make sure that they are being made coherently, there is no clear distinction regarding the level of investments in relation to how important or how urgent things are, as expressed by the respondents quoted below.

"I think there is investments, but at most it is at a moderate level. A lot of investment had recently gone into the chair of digital business and online offerings, from a product standpoint, but I don't see a lot of transformational investments being made in the way in which courses are being administered, delivered or practised." Respondent1

"They are part of a much bigger organisation, in my view they should have a coherent system in line with what digital transformation would be for the organisation, what it would comprise of and what it would look like, sort of viewing what is situation to a what we would like to be, the assessment is vital to ensure optimal decisions making processes for investments into new digital technologies." Respondent10

Another finding indicated that the university as a whole has multiple pockets of investments as well, enhancing different areas of the programmes and service deliverables. However, yet again, these have not been aligned to a bigger conceptualised digital transformation strategy but rather to multiple digital initiatives. These initiatives were highlighted in Document 3 as "Decisions on Financing Digital Projects" towards the growth of the university.

4.4.3 *Processes and Governance*

Governance of WBS was one of the most touchy, tricky and controversial topics of discussion. WBS governance is a rich topic to comment on. As some respondents shared, they felt that they were *"not in a position",* even at senior management level within the school to address governance issues openly owing to the ideology embraced by the top-down authoritative leadership approach. Overall, the findings around governance revealed that most respondents felt there is a lack of transparency, low involvement in decision making and a tendency to consult older legacy systems for an answer to how things are done.

"Governance and business models is not well suited to the current model is not well suited. It is too hierarchical, it is too rigid and it is aimed at education institutions of the 70s and 80s. So I would say and therefore there needs to be more agile, more rapid decision making and. It's basically things just take too

long to make any changes, firstly and secondly, there are the there's no room for local variation on policies and practice." Respondent1

"We can come up with new governance if seniors allow us to be part of the process, they can still have final say but we deal with first hand problems, we know what the requirements are for the changes that need to be made." Respondent2

With WBS and the university being inundated with outdated policies that no longer serve the needs of the institution, current policies facilitate good business practice and encapsulate the bureaucracy needed within the traditional university institution but lack the flexibility and adaptability of new digital technologies and the ability to deal with the fundamental changes of a digital business environment.

"What is the level of maturity of the existing governance model? – I think it's probably like a three out of five, we've got quite well-defined structures. They're not exactly universally understood or universally followed, but they are well defined for the traditional university business. So I'd say it's a sort of a three out of five. And my view is in terms of how well it's aligned with the digital era to one out of five." Respondent1

An analysis of the policies revealed that they were well developed but lack the adaptability and flexibility requirements for the digital environment. Many of the respondents felt that they were unable to influence change from their perspectives. They explained that they expressed their thoughts and ideas but most of the time with no result. In the same breath, most respondents indicated that they were well aware that they could not influence governance policy and affect changes immediately since there is a higher authority and leadership pool that make the decisions based on governance for Wits University and not only WBS.

"Governance is a topic that needs to be dissolved depending on how you look at it, in some areas it needs to be fairly strict and not allow room for flexibility, but in others I believe there is room for adaptability, like in marketing and procurement, marketers need to ensure they get the best rates for advertising, but this means that they negotiate in real-time and only get a specific quote for that advertising bid, then procurement comes with things like you need to get three quotes and then motivate etc, this is ridiculous given the time pressures marketers are under to get the best deal, in prime time advertising on prime sites. This is where policies need to be adaptable and allow for this to occur with a motivation of course, we are not saying change the premise, but at least adapt it otherwise we lose opportunities." Respondent8

Respondents indicated that governance policies need to be reworked and adapted to suit the newly formed digital environment, while still retaining the stature and vigour of the existing governance policies. However, digital governance is almost non-existent, especially when it comes to finance-related processes, criteria for procurement of items or simple budget approvals and so forth. The processes are mostly outdated and fairly rigid; there is a line of approvals that must be followed before anything is approved. This

has led to many items, projects and other business practices being delayed. For the respondents, these processes now need to have the following characteristics:

"Agile, flexible, increased empowerment in teams and optimised decision making for approvals." Respondent8

To date not even a head of school's approval is enough to proceed with the tasks at hand; the line of approvals requires numerous documents and motivations before the approvals can be proceeded with. By the time the approval is completed, the opportunity may be lost, the quotation outdated or the negotiation may have fallen through. Many operating units function as silos and look at only benefits for their personal team and not for the group as a whole.

"but to have these changed and fight for the senior executive members actually to take heed to what we are saying, takes too long and too much of our time- we might as well just carry on, till we personally move onto something better." Respondent2

"The second issue is that there's no room for local variation on policies and practices, which is key in innovation if you ask me." Respondent1

The statements above indicate that individuals are frustrated; they are trying to make a difference but the processes take too long, involve too much red tape and are mostly declined as senior members do not necessarily agree, without giving a team the opportunity to test new ideas and see their results. The inflexible adherence to outdated policies that do not align with or suit the digital era makes it challenging for WBS to make quick decisions or compete in a dynamic business-orientated environment with key market players as their primary customer. Agility was recognised by many respondents as the common building block not only for governance but also for digital innovation and change management.

Respondents supported the idea that digital innovation should enable rapid decision making and, most importantly, should assist in evolving business models in conjunction with governance and processes and should further aid the university to gain a comparative and competitive advantage. Respondents expressed the following views:

"How suitable is our current business model, for a leading university in South Africa? It's a question yet to be answered, in my view it is not well suited for the digital era, it's too hierarchical and too rigid, embraces education systems of the 70's and 80's." Respondent1

"What I can say, is that most people are living in that old structure and old thinking, in terms of their processes they are scared to change as they feel that their old processes worked better, it's very difficult for us newbies

to make change, the process of just getting things changed is quite difficult, there is a lot of pushback. And to get anywhere one really has to make a noise or cause a disruption to be heard." Respondent2

In addition, business model and governance innovation came out strongly as an important building block. Respondents believed that customers are the key drivers and most important role players in feeding innovation decisions, which are driven by customer data, needs, wants and purchase behaviour, and in developing a flexible dynamism.

More significantly, respondents within WBS believed that a true understanding of what change management means or how changes need to be implemented across the school is lacking. Furthermore, they do not have direction from leadership. Respondents associated with the academic profiles understood the importance of change management and indicated a key change-management process as a vital building block of digital transformation.

"The first step is that there has to be clear articulation of the digital vision and way forward that needs to be communicated across, they should really consider using any change management model and capability, like Kotter's model, create a platform for change, build the coalition of willingness to bring individuals on board." Respondent1

There are no indications of Wits University or WBS' efforts to inform and educate their teams about the digital transforming businesses disrupting the industry, which also include new learnings, relearning and unlearning of business practices. Holistically, the university has not addressed the issue of how it is being disrupted and now has to compete with these new online platforms. Many respondents explained that they had to research and understand in their personal capacity how this was affecting their job and student numbers overall, but not all respondents were willing to do this during their personal time. This further highlighted a key area that needs to be improved or changed within the university, incentivising or motivating employees. Respondents shared sentiments around what they felt would help increase the efforts of individuals to drive the changes needed, as follows:

"Increase incentives for employees, provide simple things like employee of the year awards, or some sort of recognition awards with an incentive attached, this helps staff look forward to their tasks and taking on more. Also there is no room for promotions, if staff were made eligible for promotions, they will give their all. Right now, if I go the extra mile or not even do my required job, or do the bare minimum nothing will happen to me, and I can comfortably just stay where I am." Respondent2

4.4.4 *Technology and Capabilities*

Digital technologies are key role players in the digital transformation journey; they were therefore recognised as an essential building block that makes digitalisation successful. The discussion on 'Strategy and Vision' above (see Section 4.4.2) suggested that WBS is investing in multiple new digital initiatives, which in turn involves purchasing new technologies. Fundamentally, there have been multiple new technology investments such as 'Project Quantum', 'new smartclassroom', 'new learning management systems', technology investments in human resources and many others. However, the debate around technologies was not primarily determined by what types of new technology WBS needs to invest in or purchase for effective business practices but rather focused on the ideology of disruptive platforms that were disrupting the higher education industry and competing with WBS. Most respondents shared that these new entrants:

"Such as udemy, get smarter and many more other online platforms that allow you to register so easily, seamlessly and costs you quarter of university fees, yes they may lack the accreditation, however we living in a fast changing dynamic environment, people are looking to improve their skills quickly and these platforms are addressing that need." Respondent7

"Are just trying to make their way into the industry and are winning as they have seamless online processes." Respondent15

Disruption is therefore inevitable and WBS should aim to embrace it and create a synergy so strong that it allows WBS to uncover its competitive advantage in this era. The respondents shared that new disruptive technologies need to be highlighted and evaluated to see whether the university will find this type of technology useful. Furthermore, the benefits of having such technologies introduced into the university environment need to be assessed along with how the technologies affect the overall business outcome of the university. According to one respondent,

"Disruptive technologies are enabling the world we live in, we need to understand that it is not only there for our personal use, but also for business use and this can make our lives a lot easier, and efficient. But we are not looking at these technologies as how they can help us, rather we have found many questioning the tech or digital shift and many are actually reluctant to do this, including senior executive staff, who do not currently possess the knowledge or information of how these technologies influence the business outcomes." Respondent1

Furthermore, with the current global pandemic and the need to move to digital platforms to conduct day-to-day business activities, it should be acknowledged that only now have particular stakeholders across both WBS and Wits University recognised the importance of specific disruptive technologies as enablers.

"With Covid-19 all of a sudden now, we hearing about moving on to more evasive technologies that include cloud computing, higher level and better online teaching platform licences and a whole bunch more. We have been trying to sway the seniors for a long time, it finally took a pandemic for them to rise up and know that it is possible and can produce better results overall." Respondent2

Overall, respondents believed that a mind-set shift by senior executives and senior management across WBS and Wits University is required, coupled with and tied back into the leadership attribute.

"The more supportive senior executives are, the more favourable the adoption of new technologies become." Respondent5

Respondents shared that the current business models do not align with the digital business environment. A notion of including a hybrid business model was highlighted by one respondent, who shared the following idea:

"The university can only create a competitive advantage if they develop some sort of hybrid model, you know one that is flexible and adaptable to suit this fourth industrial revolution or digital age, includes online, blended and face-to-face teachings." Respondent12

Integrating a number of different teaching methods amplifies the chances of being recognised as a competitive player in both the digital and traditional environments. This allows the institution to stay relevant in all areas, providing customers with customised offerings that suit their lifestyles and personal preferences. Platforms would also need to be created to serve the higher integrated digitised needs of these customers and processes. Respondents supported integrated platforms and/or the idea of having one full customised school of platforms that coincide and connect with one another and that allow all the information to be tracked and traced back to a student from the beginning of the student's journey to the end where they become an alumnus.

"The requirements of platforms are many, we need to analyse all the specifications and have multiple parties across the institution to highlight what they need in particular, but this is a vital process, it helps us tell one story of the student instead of having duplicated views of the same individual with multiple degrees and qualifications. We can only excel if we have a full 360-degree perspective of our students." Respondent6

According to the respondents, digital mastery is attainable through interrelated connectivity between the appropriate enabling technologies and digital business models, all driven by leadership and through the strategy, vision, governance and capabilities of the university and WBS.

Respondents shared the view that mastering services requires an abundance of training, workshops and support in general. Overall, this perspective resonates with ensuring that

the correct customer service processes are clearly defined, with clear outcomes and key performance indicators (KPIs), associated with the soft skills of communication and engagement attributes to deal with customers.

"I think merely understanding what service mastery is in general needs to be defined, I don't believe we have mastered the right service skills as yet, processes or KPIs or even just being accountable for mistakes are not prevalent, are we serious about our services? We need to clearly understand the vision or requirements. This often means we need to have staff constantly trained and reminded about how their services make an impact and create a high level of service mastery culture." Respondent10

Respondents went on to explain that adopting digital technology interlinked with service mastery requires employees to be digitally savvy, clear and concise when communicating through digital channels and providing feedback within 24 hours.

"We have to identify and re-define the service processes, identify what are some of our touchpoints that are now going digital and what areas are still human touch points and how together we need to master the skillsets required for the transition." Respondent14

Coupled with the mastering of digital services are the important facets of digital skills and digital literacy, which interlink and need to be enhanced in order to ensure the overall success of digital service mastery.

4.5 Does WBS have a digital transformation strategy to deliver on its digital promises?

Answering this research question involved investigating the respondents' general sentiments, understanding and perspectives regarding WBS having a digital transformation strategy and, particularly, its interrelatedness to Wits University's digital strategy and vision. It further sought to establish the respondents' ideals regarding digital transformation drivers in relation to strategy and vision, within the context of the academic institution. The first few interview questions channelled the conversation around the discussion of digitalisation and digital strategy. This allowed the researcher to gain an understanding of each individual's knowledge of digital transformation and perception of the importance of a digital strategy. Furthermore, student responses, policies and primary observations were collated in conjunction with the interviewee responses.

Digital transformation was highlighted as a fairly new concept and phenomenon that many respondents were unfamiliar with at the beginning of the discussions. Thus, prior

to beginning the interviews, the concept was explained to the respondents and a common understanding was derived. All interviewees expressed their opinions about digital strategy, digital vision and digitalisation. The literature reviewed as set out in Chapter 2 identified the high-level theme of strategy and vision, which indicates three critical areas as influencing the overall strategy and vision of digital transformation: digital strategy, digital focus and investments. Ideas, opinions, themes and research insights were extracted from the interviews, survey responses, observations and policies. Common themes were identified and grouped to assess the validity of the research question.

The majority of the respondents articulated that WBS and Wits University's digital strategy is non-existent. It is not clearly defined or rather remains undefined. There is no indication of or communication around a clear digital strategy, let alone a digital transformation strategy to drive and foster a digital business environment. The university's strategy is primarily built on the research agenda, which is driven through the business goals. However, built into this, the vision of WBS and Wits University can be articulated as evolving through teaching practices to meet the digital era, as expressed by respondents.

"It is in line with business goals, the vision is to evolve both what we teach and how we teach it to continue to be relative in the digital era or fourth industrial revolution." Respondent1

"Our WBS vision often ties in with the overall university vision and to date there is no mention of either of us following a digital forefront, we are sticking to the research vision, I don't think we have any digital vision clearly communicated, or at least I have not come across it, but I must say there is digital things and digitalisation and automation taking place, so essentially we are adapting our business to the digital environment through what we are doing and teaching." Respondent2

Although there is no clearly defined digital transformation strategy, an important point raised by the majority of the respondents is that the university and WBS are engaging and participating in multiple digital initiatives that are driving digital transformation across the university, as indicated below.

"As a university there is no strategy as such for the digital or fourth industrial revolution, but rather they are participating in it actively through digitizing new processes and introducing new systems, however the university is not ideally forward looking right now, we are not even at level 4 or level 5 in digital readiness where 5 is the highest." Respondent10

"I don't think we have a digital strategy, but we definitely have pockets of strategy. We have a few operational interventions, but it is not part of a bigger digital transformation strategy of the school or the University for that matter." Respondent1

“And the answer must be is no there isn’t a digital strategy. Rather it's a partial strategy. And I think it's more tactical in nature right now based upon having to deal with a response rather than with being proactive to digital changes.” Respondent5

“The school has become digital savvy in many ways, like creating an online presence in social media and working online through digital libraries and across multiple learning management platforms, but in my view the school does not have an overarching digitally focused strategy.” Respondent7

“I don't think so, I’m unaware of a documented vision or strategy, but I do know we are heading in that space because most of all platforms we've moved online a lot of new paper-based processes and procedures. We moved it online. But I'm unaware or maybe I just haven't come across a document with a plan of how the university or the business school you, you know, is going to move into the space. I see it happening across the board in terms of many projects that we that we are currently doing where we are heading towards that, for instance, we are busy with a new Wits Business School website at the moment where we are considering putting in an important place. So there's an element of artificial intelligence that's going to be incorporated into the new site, which is in line with the fourth industrial revolution. But there's no document as a whole that speaks to that.” Respondent4

However, a unique insight around digital strategy was shown by one respondent:

“So I would say definitely. But it's done in the right way. It's done using academic terms, not technology terms. So, for example, in our enrolment strategy, 2020 to 2025, we are we have committed to increasing a number of online registrations significantly from virtually nothing to, I think 400 or something, 400 or 800. There is a definite intention to grow the online side, which is obviously driven by technology, say both into our strategy is a definite strategic intent to digitalise. In addition, there's a whole student success programme that's being driven by the DVC [Deputy Vice-Chancellor] academic and the. Diane Grayson to use technology to help us to increase student success and throughput and retention. So, again, from the business point of view, which is what the university is all about, pompousness, we want to grow our online and we want to make sure that our students succeed, all aided by technology.” Respondent6

Fundamentally, the majority of respondents shared the opinion that from a business perspective they have not seen a clear digital strategy being communicated; however, from an academic perspective there are numerous business and academic strategies that involve digital technologies. Furthermore, respondents argued that any strategy, including a digital strategy, needs to be driven and communicated by the Wits University SET.

“We don’t know if there is a strategy, because we don’t explicitly get communications around digital strategies through SET, it is not always clear where we are and where we are headed.” Respondent2

While there may not be a clearly defined digital transformation strategy, WBS and Wits University are digitally transforming their business through pockets of digital initiatives that are driving changes and are ensuring that WBS promises are kept.

“Project Quantum, was a digital initiative the university spent a lot of money on in order to ensure our students and staff have strong Wi-Fi across the university.” Respondent2

"We now at WBS have one of the first 'smart technological classrooms and there is artificial intelligence and chat bots being incorporated to the website'." Respondent4

"Due to Covid-19 and prior to that, we already began Wits Digital Campus and includes a variety of online courses offered through online learning systems and digital technology formats." Respondent1

"I am sitting on a number of different IT related projects such as a new finance system, new short course system and learning management systems, these are going to be implemented in a short time." Respondent2

Furthermore, respondents stipulated that WBS as a school has raised the importance of and set out the need for technological advancements with SET, citing the nature of its target audiences. The need has been pushed primarily from WBS and took several months initially to be recognised as a need for change not only within WBS but also at university level. Whether these advancements are simple or complex in nature, the university is not advancing to the extent that it should. Rather it follows up on issues that employees and students flag as important. This was indicated by many employees across WBS:

"It was the business school's responsibility that has said and pushed the challenges and has brought us to where we are today and realise what we have in place, note it is not the university but rather the type of customers we have that has brought about the changes." Respondent2

"We seeing things being done as ad-hoc projects or plug-ins to eliminate a problem, if you want you can say it is an emergent business strategy to get rid of the issue at hand, but we are not forward looking." Respondent5

"Now with Covid-19, we can clearly see the university making a collective effort to push forth a digital aspirational goal that will help us continue." Respondent7

At the same time, while some opinions may suggest not much difference in terms of a digitisation and digitalisation forefront across WBS and Wits University, there are other views that provide insight into other key digitally focused areas that have not coincided as well with any documented vision or strategy but are in progress, as indicated by the responses below.

"Most of our platforms, both internally for staff and externally for the market have moved online, there are a lot of new online processes which were primarily paper-based. I see the university moving in small areas onto many new projects, items like artificial intelligence, machine learning algorithms, and other new digital technologies are currently on its way to being integrated into the university's websites and other corresponding online platforms, however I have not seen any documented strategy or plan on the way forward overall." Respondent4

"WBS was recently under major upgrades from an infrastructure point of view, not sure if you heard about it, but the university spend like R500 000 000 on infrastructure development related to connectivity and Wi-Fi and all new networks, I think it was called project Quantum or something like that, it was during 2018-2019, this was also when WBS was busy with the infrastructure of the 'smart' classroom, which was a further R2 Million project, so certainly yes there is advancements taking place." Respondent11

The balance disparity in intercommunications between the university and WBS is explicit. In addition, a general perspective shared was that the university and school are taking steps towards digitisation and digitalisation of processes that have been aligned to business practices but are not underpinned by a clear strategy or change-management process that is cohesive for both staff and students. This view is supported by the following response:

"You can introduce students to use technology to enhance their learning, but you need to ensure that all students are comfortable with utilising those technologies, on top of which the person who has put up the work, should also have been transformed and is also comfortable with the technology." Respondent10

This shows that staff, both academic and support, need to be clearly trained and be completely comfortable with the use of new technologies for conducting their activities, lessons and teachings in a digitalised format. This in turn directly correlates with the university having a digital strategy and the fundamental changes that need to be made to accommodate this strategy. Although senior management across both the school and the university has a common understanding of the need to implement or switch to dynamic and automated or highly digitised business operations services, many of these digitised services are currently taking place through siloed activities and do not align coherently across the university. The result has been isolated pockets of digital initiatives. Thus, within WBS there is mistrust and a lack of confidence in many of the new highly digitised processes that are being introduced, as expressed below:

"The strategy is not merely around the business operations and services, it's not the business school or people outside to whom they will be teaching, it's how do we create digital opportunities for everybody to be able to participate in a future of space, no matter what industry or field?" Respondent10

The statement above suggests that at an institutional level, as a flag bearer of educating the masses in the market, the university has the responsibility, and therefore should employ a strategy, to ensure that all fields of study going forward incorporate a level of digitalisation in the content and context of teaching. In essence, the strategy involves looking at how digitalisation is influencing those current fields of study or how they are adapting digitalisation into their scope of study. For this reason, respondents highlighted

the significance of clear communication from leadership regarding a digital business strategy.

"As an educational institution, the strategy is not merely about how we digitise services to students, but it is also about what we are teaching, what type of strategy are we following to provide the future leaders with the correct study material and the influence digitalisation has on them in a particular field." Respondent1

The importance of integrating or generating new programmes and courses with digitalisation as a focus area for the university was highlighted as a significant part of a business strategy and to some respondents this should be part of a greater digital strategy. Above all, investments and investment decisions were highlighted as critical for digital strategies and visions, as indicated by respondents. The subject of investments elicited multiple views. These opinions highlighted strategic benefits, signing power, decision-making processes, making business sense and other related priorities.

Investment decisions are being made extemporaneously, as and when a need arises. Also, the majority of investments are made with the aim of improving operational processes, which have included investments in digitisation and automation of processes. These decisions are often skewed according to the level of digital maturity and the challenges highlighted in improving processes and systems at WBS. In stating this, the dominant views mentioned the skewness of decisions, which focused on improving the business-as-usual and generic processes, increasing training, upscaling resources and making general improvements across the WBS buildings. This indicates that although investments are headed in the right direction of digitisation, relatively more investments are made in generic business improvements currently, which suggests a bias towards horizon 1 investments, investments to main and strengthen core business actions. However, improvements include digitalisation processes and procuring digital platforms, systems and equipment, as indicated below.

"Yes there is a lot of money being spent within the school, like most recently which was one of my calls, we are procuring new systems for our syndicate rooms, it is going to be digital and no longer will require back and forth emailing and booking, we are spending money on this as well as improving our computer labs on the premises." Respondent2

However, respondents shared their feelings towards investments not being split or budgeted for a long-term futuristic view across horizon 2, investments to explore and consider new options or horizon 3, investments to create entirely new opportunities and competencies. The majority of the investment decisions are perceived to be made in line with policies and discussions, with key stakeholders of SETs highlighting the "unbalanced" nature of the university. Investment decisions are two-fold; signing power

and signing off on investment decisions take more than a head of school to achieve, which often increases the timelines of introducing new digitalised processes.

The university maintains that investments are being made to improve the digital aspirations and customer service delivery as identified in Documents 3, 4 and 5 (see Table 2 in Chapter 3, Section 3.3.1). This is being achieved through specified digital initiatives that can ultimately lead to the university excelling and transforming itself, and in this way delivering on the promises being made.

The university is doing this in the following ways:

"Introducing a new short-course system, new HR system, we have a smart-classroom on the premises, I think we the only group to have one across the whole university. I know there are many other similar projects etc that are currently being discussed and evaluated. I mean we also had project quantum- with the whole fibre lines being installed at the premises and better server connectivity etc. So yes we are gearing up, but this may be at a slower rate than others." Respondent11

"We are getting a new finance system, new HR system, also some talk around a new CRM system for admin and marketing." Respondent4

Customer services from WBS, other schools and the university have been identified as a key problem area. According to respondents, customer relationship management (CRM) is slipping through the cracks and students are expected to follow lengthy processes and wait long response times and long turnaround times for their applications, registrations and other queries to be dealt with. These issues have led the researcher to raise awareness around this problem area throughout the university over the last two years, which has now led to the establishment of a group-level project aimed at implementing newly designed CRM software:

"Wits Plus has been working with Oracle service cloud to manage their CRM activities, however, this system has been outdated and cannot keep up with the dynamic nature of new digital technologies, another facet is that it does not integrate or align to any other systems across Wits, which results in further issues at applications, registrations, marketing and finance." Researcher Observation

With the continuous struggle and increased costs faced by Wits Plus, Centre for Part-time studies, staff have consistently pushed to obtain a new CRM system. This has now led Wits University into discussions with key market players such as Microsoft dynamics, Oracle and Salesforce regarding new software's. Wits University is further investing in a highly digitised CRM system that integrates all facets of the customer journey from attraction point to alumni and provides the internal staff with a full 360-degree perspective of the student, from the beginning of engagement, through marketing means, to

applications, registrations and beyond. It encompasses the full student journey and incorporates a payment gateway, making it convenient and easy for all students to use across the university. This particular project, however, was begun fairly recently and thus will only be implemented from 2022 onwards.

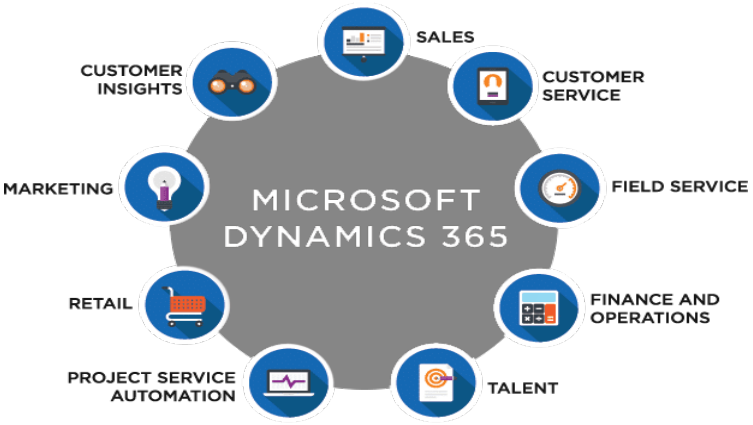


Figure 19: Example of Integrated Business Solution. (Dynamics, 2020)

Linked to this view and in interaction with key stakeholders across the university, opinions were drawn on investment decisions. It was found that investment strategies from business units across the university differ according to their output levels. WBS, being a third revenue income stream for Wits University, has different KPIs from the faculties within Wits University. Furthermore, prioritisation and persuasion are key to bringing all business units on board for a project of this nature (the newly integrated CRM).

Holistically, respondents across WBS and Wits University shared and supported their perceptions of an unclear strategy and vision, with many respondents looking forward to the filling of two important new roles: 1) the new vice chancellor (Professor Zeblon Vilakazi) and 2) the newly appointed head of school for WBS (Mr Maurice Radebe). Adam Habib, previous Vice Chancellor of Wits University, said: *"Mr Radebe brings about plenty of experience as a highly acclaimed leader in the private sector and an academic leader in the university system"* (Habib, 2018). Many have acknowledged both leaders as being significantly more business orientated and aligning themselves more keenly with digital transformation and the execution of digitally focused business initiatives. For the respondents, a clearly defined digital transformation strategy is now up to them to deliver upon. Some respondents expected that with these new fundamental changes to both the university and WBS, effective changes will be made within a short time, to

empower the digitisation and digitalisation of processes at the university, and therefore there are no clearly defined promises as yet to deliver upon.

"They seem very proactive in terms of us being aligned to digital changes. I don't think we are there, but I think we are going to get on the bus and go the way and how rapidly things are changing. I think we will get there definitely." Respondent2

4.6 Are all the relevant factors in place for a digital environment to grow and thrive?

In answering this research question, the study investigated the perceptions of students and staff, and policies were examined again in regard to identifying what relevant factors are currently in place for a digital environment to grow and thrive for long-term sustainability. Data was collected from respondents (students and staff), observations (including Wits University press releases and information found on the university website) and university policies. Holistically, respondents' sentiments uncovered a number of different factors that are currently implemented or will be implemented in the short term and that are aligned towards a growing digital business environment. These factors strategically align with the Evans' Digital Transformation Framework (Evans, 2017).

With a clearer understanding of the digital transformation concept, as indicated in Section 4.4, the majority of the respondents were able to proceed with the interviews and surveys and provided insights based on what they were currently experiencing or had been part of. Insights uncovered were aligned with the high-level themes of the Digital Transformation Framework: Strategy and Vision, People and Culture, Processes and Governance, and Technology and Capabilities. Each of these themes is discussed below.

4.6.1 *Strategy and Vision*

The majority of the respondents acknowledged that with the current digital environment rapidly changing and evolving daily, it is almost inevitable that the relevant factors required to thrive and grow in this digital ecosystem are considered and defined. As previously discussed, the university does not have a clearly defined digital transformation vision, strategy or change-management system. However, at present, WBS and the university have been involved in a number of different digital initiatives and are opting to embrace new digital systems, processes and other digitalised functionalities across

many different value streams within the university. The predominant nature of the institution is to be digitally focused.

"WBS is not all digitally bad, they have digital processes and systems that are working and we see their initiatives in trying to do things better." Student Response

"Writing online or digital exams was a first for many of us, I think that shows that WBS is trying or gearing up towards becoming more digitally inclined." Student Response

"We wrote online exams, yes it may not have been one hundred percent at first, but we slowly got it corrected and worked perfectly thereafter, it was so much better than traditional methods of examinations." Student Response

"We not there yet, there is no digital strategy that we know of, however there is an increasing need and implementable changes of digital coming into WBS. Also doesn't this Digital Business Masters count for something, like the university is driving digital not only from new technologies but also in the courses and programmes they are offering." Respondent8

"If there is a digital strategy, I would know, but I am not aware of any, also there would be no uniform strategy as each school differs, however overall systems are aligning now when it comes to automation and digitalisation of processes." Respondent2

"Wits latest digital innovation was the release of 'KuduBot' which is their online Chatbot that is set up to enhance overall students services to provide students with access to convenient support to their enquiries" (Wits, 2020b).

"Africa's first 5G Innovation Lab- Wits & Huawei collaborated to bring Africa's first 5G innovation lab in Wits Tshimologong Digital innovation precinct"(Wits, 2020a).

Furthermore, respondents acknowledged that WBS and Wits University are introducing newly formed digitisation and digitalisation processes into particular spaces as early adapters to analyse and review the adoption and adaptation of these processes and digital functions. These processes are all fairly new and are yet to be adopted across the larger community at the university.

"A common example of introducing new systems and platforms, testing and utilising it before it goes out to the entire university will be similar to that of the upcoming CRM projects that we are working on with WBS and WitsPlus, they will be the first groups to roll it out and once we see clearly the challenges, limitations and success then we will roll it out across the bigger community, this is a futuristic and development choice for us to grow and sustain our business." Respondent6

"With the Covid-19 pandemic, not everything has been bad, this has given WBS the perfect opportunity to start up a canvas and actually sit down and redefine the way in which they would like to operate, realign the way in which employees do things and how we can internally as group optimise our standing in the digital environment." Respondent6

"We would like the university to grow, even in its online presence and we want our students to succeed, through the aid of different technologies. But we should not have to follow a pompous trend of digital transformation." Respondent4

The sentiments above highlight both WBS and Wits University's digital aspirations, digital goals and digital initiatives that they are working on and gearing up towards. Respondents noted that WBS and the university are making conscious decisions to improve digital technologies and capabilities and make advancements into new processes and customer service delivery. Furthermore, areas that have captured a digital focus include not only the business and operational aspects throughout the university but also the academic online teaching and learning programmes as well as newly formed programme offerings such as the Digital Business Programme.

"We need to be flexible and adaptable, our students know all sorts of modern day technology and are getting bored and frustrated having to deal with old traditional ways of doing things, millennials are fast and easy learners. We need to be able to match and be better than their expectations." Respondent8

Respondents have raised these concerns and have addressed online learning with senior management, with the intention that this will increase the digital focus for the university to introduce and adapt to new ways of doing things. These digital initiatives, both operational and academically inclined, have been sought through large investments that are required for adapting to the new digital business environment. WBS has been fundamentally driving a great number of investments into the digitalisation of processes, programmes and other operational aspects, in conjunction with Wits University, owing to the interrelatedness of the school and its group head.

"Investments into digital projects are definitely being made, these systems are not cheap and thus most of the investments come together from main campus, we have to operate at a group level when investing." Respondent2

In contrast, some respondents shared an alternative perception around investments that moving into this digital phase many projects are underfunded.

"We get small budgets to work with and are required to transform and increase outputs drastically within a year, instead of giving us a billion rand to make this transformation possible." Respondent12

Decision-making processes around investments are lengthy and take longer than anticipated at WBS, smaller investments included. A respondent shared that:

"By the time the approval for the quote comes back to us, the quote and the negotiated prices have expired and we have to restart the process again." Respondent9

Respondents also indicated that there are many parties involved in the decisions and approvals regarding the quotations. This represents a lack of transparency and clarity. In particular, some respondents felt that decision makers:

"Are more concerned about the smaller returns in rands and cents as opposed to building a new brand presence and uplifting the group." Respondent15

Overall respondents chose a similar scoring value regarding the level of investment being made across WBS. On a scale of one to five, where one is the lowest and five is the highest, staff generally had the following response:

"I would probably give the maybe a two, or two and half." Respondent14

4.6.2 *People and Culture*

Despite the university being ranked first in Africa across the 2019/2020 academic year by the ARWU) (Wits, 2020) (Wits, 2020c) and WBS achieving reaccreditation by the Association of MBAs (AMBA), which placed WBS in the top 2% of business schools globally in 2020 (Observed data) the leadership status and a championing mentality are not prevalent. For WBS, as acknowledged across Sections 4.4.1, 4.4.2 and 4.4.3, leadership has been a challenge, with the constant fluctuation of changes in leadership.

"Our leadership has been a nightmare over the last few years, its constantly changing and we have no idea how to move forward because of this. However, many of us are now feeling much more at ease knowing that the new Head of school, Mr Radebe who is going to be stepping in as of 2021 will hopefully be the leader driving this digital changes that we need. He seems to be both academically involved and a business master." Respondent8

"I think with Prof Vilakazi and the new head of WBS, we can definitely say we are going to be steering into this digital world with good leaders now. They both have knowledge of this digital world as far as we know currently, we will have to wait and see." Respondent15

Respondents supported the confidence associated with the appointment of the new vice chancellor (Professor Zeblon Vilakazi) and head of school for WBS (Mr Maurice Radebe). Traditionally, Wits University senior executives have been highly driven by the goal and vision of research generated through the institution, with the focus not specifically on technological developments, which just formed part of the process. However, with Professor Zeblon Vilakazi stepping in from 2021, he is the first vice chancellor with a technological and digital background and will be looking into how the university can transform its business models in the same length. Mr Maurice Radebe has

significant business-related attributes that enable him to understand the market more clearly and align WBS towards becoming more relevant within the market through all of its business operations and offerings.

"It definitely takes leadership who is actually aware of what is happening out in the market, to come about and make the possible changes through the use of technology." Respondent6

Further sentiments shared touched on profitability and sustainability. For the respondents, a leader is needed who will ultimately lead the organisation to long-term sustainability through growing trends of profitability achieved through newly digitised and automated processes and methods of engagement from both internal and external perspectives. The majority of the respondents felt that from 2021 going forward, Wits University will be developing and digitising much more; they anticipated a stronger leadership and looked forward to the changes coming through.

"With many digital projects in place currently, I think these new leaders will help amplify and move things a lot more faster as we had seen how possible it actually is, due to Covid-19 and the effects of quick adaptability." Respondent7

"Fundamentally, we may be in a relatively good position, I just think that now the new leaders need to push this digital drive for all schools so that we can represent one equal forefront." Respondent11

Respondents have called for bold, agile and flexible leadership at WBS that is not afraid to take a stand to move the school in the direction that is required, even if the rest of the university is following on gradually. Furthermore, respondents believe that it is leadership's responsibility to drive digital changes coupled with digital training and skills development programmes that aid and help the WBS community towards becoming digitally savvy in order to operate these new digital systems.

"Do I think the current WBS staff have the right skills for the digital age? No I don't think so. That's the truth, we have seen it in our most recent times of adapting to the COVID-19 pandemic and moving online. People from different standpoints were struggling and had great difficulties adapting to a working world from home and away from the office." Respondent2

"We as staff have different levels of digital skills, some of us adapted quickly and really well during Covid-19 but there was a number of our teams and staff who struggled and it ultimately gives us a bad reputation. Students were not impressed with the services they were receiving." Respondent8

Importantly, this sentiment highlighted a challenge not only at WBS but across the university throughout different faculties, schools and support areas. Many people were not satisfied for a number of different reasons; primarily what stood out was that many employees themselves were unmotivated and uninterested in upskilling and updating

themselves, which led to the initial struggle they experienced in adapting to the new way of working remotely.

"Majority of senior staff at Wits, academic or administrative are not tech-savvy and often require training or further assistance. They are not willing to try and play around with updated technology to adapt themselves to the market." Student Respondent

"If I were to rate staff even now after adapting to Covid situation and online working etc, I would still say that people have not adjusted well enough and quick enough, so I would only give them a 3." Respondent2

Both support staff and academic staff found it challenging to adapt to an online working and teaching world from home during the worldwide pandemic. Respondents acknowledged the significance of equipping both support and academic employees with the necessary digital knowledge skillset, training and ability for them to be flexible enough to adapt to any situation.

Digital skills in relation to administration, training for the use of new high-tech systems coupled with higher-level critical thinking programmes and multi-dimensional programmes such as business administration, customer service engagement and general communication skills were highlighted. The university has a standing rule of thumb for any new training and development, in which:

"The employee is required to register online through the Wits Intranet for the appropriate training, under which it is compulsory training, only thereafter can the employee have access to and utilise the system. It's not optional, every employee will have to go for the required training, basically employees are forced to go for training otherwise they can't do their jobs." Respondent4

Communication and interpersonal engagement skills were identified as the most widely used skillset across the institution and at WBS mostly, owing to the personal interaction and engagement with students throughout the various touchpoints of their journey. However, there is a critical touchpoint that requires far more extensive discussion around 'understanding the customer needs' and requirements and providing them with customisable solutions. This touchpoint is linked largely to critical thinking, and adaptive and flexible problem-solving skills.

"Learning digital skills are important, but the kind of thinking behind digital and understanding the customer is more, and more so how to create the kind of shift in the mind-set that's actually required for the staff to engage with people/students." Respondent7

Respondents uncovered within themselves a need to upskill and develop new digital skills and other business skills and believed they lacked the support from leadership to

acquire these skills. With the new leaders appointed respondents expressed a sense of hope that they would get the training they need to progress.

4.6.3 *Processes and Governance*

"Innovation is great, there will be increased opportunities through innovation. We can achieve this and have been trying to achieve innovation through new programmes, new content and further developments throughout the university and WBS." Respondent1

"Innovating processes will lead to increased staff mobility, which will essentially improve our overall services as an institution." Respondent5

"So Governance plays a major part and role when it comes to innovation, if the governance is as strong as the university, sometimes is really challenging to be innovative, this type of governance eliminates the potential of innovation. However, innovation is absolutely critical and I see WBS being innovative just through this BCX digital business programme for starters." Respondent7

The comments expressed around the idea of digital innovation were positive; respondents are keen to embrace new technologies and to adapt and make new changes to the way in which they work, with the understanding that this can only happen if they have the correct training in place for the newly adapted technologies. A respondent shared an interesting perspective on innovation through the course and programmes that WBS offers. Another respondent indicated that innovation coupled with the necessary trainings can be effective in promoting the change management needed to sustain the digital business environment, as quoted below:

"If they asked or told me I needed to go for training or register for a programme that is this enriching like digital business, I would certainly put up my hand and say, yes teach me and tell me what I'm lacking and what I need to do to be better at what I do, I'd do it and hopefully this will make me better for my job, my services and so forth." Respondent8

A key flag raised by respondents was the lack of awareness and scalability of existing frameworks and technologies or processes that are working innovatively across other schools and avenues in the university but are not prevalent at main university level or extend to WBS and other schools.

"Others are advancing their skills through programs yet are not sharing their knowledge with other in this community to help improve the overall sustainability, we are not working as a team, but rather competing internally with one another." Respondent15

This response tied back to digital innovation through human resources and knowledge and the introduction of new systems, processes and other digital technologies only being

utilised within one department in the university. Furthermore, customer processes and decision-making processes are important examples of digital innovation, and respondents shared sentiments around innovation across the value chain and operational support departments. Similarly, as highlighted in the theme of People and Culture (see Section 4.6.2 above), it is important to ensure that all areas embrace digital innovation, from Finance, Marketing, Human Resources and Legal to Procurement and other departments. Innovating customer processes without digitally innovating other streams in the value chain can be detrimental and was seen as counter-productive by respondents.

"Getting systems that don't ultimately work hand in hand, or is counter-productive, we end up spending more than being investment friendly." Respondent15

This response highlighted that respondent's belief that governance is at the top tier of responsibilities and is critical for the sustainability of the university if innovation is a requirement of a digital business environment.

"I feel the executives have not understood clearly what the requirements of the digital innovation may have for governance and maybe possibly that the governance policies need to be integrated, similar to this changing landscape of the digital world. Often things are looked at in isolation, but here in governance I believe we need to relook at the value chain and see how it all comes together from a governance standpoint." Respondent10

"We are living in a world where by new laws are coming out daily due to the quick, vast transfer of information through the internet. New technology is equipping us to do things differently, but our governance policies are still the same. How then are we supposed to then make effective decisions?" Respondent4

Respondents stated that while the governance policies that are required at WBS and Wits University need to be as stringent as they have been, they also need to be adapted to the rapidly changing business environment.

4.6.4 *Technology and Capabilities*

"We have upgraded our Wifi across the WBS building to enhance students and staff connectivity, we also have a new smart classroom, I'm not exactly sure what it does or how it works as I don't use it personally, but I believe it is one of the firsts in the university, we also have the digital online library for students to access yeah there's a list of new technological things at WBS." Respondent8

"Recently with Covid-19 pandemic, we had to equip all staff with new laptops and remote access devices for data, which was big investments for the business school." Respondent2

“Academic staff and students work on learning management systems like Sakai and now we getting a new one from what I have been informed about.” Respondent4

“We have computer labs for students to use and access at all times with free internet and usage for their work and studies.” Respondent15

WBS, from the perspective of the respondents, is digitally advancing. It is investing in and purchasing the necessary digital technologies for the school to adapt to the digital world. This is being achieved for the WBS community of staff and students. A greater focus was placed on digitalisation of processes internally and externally during the Covid-19 pandemic. Wits University is equipped with digital systems and platforms to adapt and move to blended learning and online learning options. These have been in place for a while but were not utilised effectively until the Covid-19 pandemic. A reason identified for this reluctance was the cultural adaptation needed for online teaching and learning. When the university was forced to make the change, it proved that it can now work well. New platforms were identified during the 2020 lockdown that are now being evaluated for future use, as mentioned by respondents.

“We have realised the short course system does not align itself to any other platforms and has become a real challenge, we have evaluated new offers in the past months and are currently going through the process of purchasing a new one. Also we have a need to update our learning management system, we will be going onto CANVA, from early 2021. Sakai was just not working for our students anymore. The university is taking a stand and making the necessary changes required as soon as it can.” Respondent6

“To some extent we are seeing new technology being introduced, but these things don’t always align to our specific roles, rather to the very niche aspect or challenge that was faced perhaps, like this introduction of the smart classroom? Or here in WBS we now going to have a system platform for students to book syndicate rooms, so no more emails, but isn’t there some system that links multiple things together instead of having separate platforms for different tasks?” Respondent2

According to respondents, WBS and Wits University have digital learning platforms available that need to be utilised more effectively and efficiently. Respondents believed that this could increase the digital maturity and state of the university if they were well trained, equipped and motivated to proceed with online teaching and learning. In line with this, respondents went on further to highlight that the university is at the forefront of introducing disruptive technological courses and programmes that have not been facilitated before. The Masters of Management, Postgraduate Diploma and short courses in digital business are merely some of the enabling technological programmes that are disrupting the market in South Africa and Africa. WBS was the first to introduce the BCX programme.

"This programme is getting us at forefront of research into digital business and how things are needed to operate, we need to be proud of the efforts taken to get us here. I believe this is just the beginning, Wits has many other projects similarly within other faculties and fields that are in progress. I am only aware of this as I am part of the digital business programme. We also disrupting the market in terms of what we teaching, or how we teaching it to the extent that most teachings are coming from real-time experiences, looking at the latest technologies and what's happening in the business world as opposed to looking at theories and teaching theories. Things are being taught based on day to day business happenings across the globe, which is relevant content." Respondent14

Furthermore, the university is equipping itself with different types of disruptive technologies and enabling its staff to use them in the future, with the use of other disruptive technologies such as Cloud, Cloud computing, Big Data, Artificial Intelligence, Business Model Architecture, Predictive analytics and others, including integrated support systems, being explored. From a technology and system standpoint, Data, integrated systems and online platforms were identified as the large areas that need to be fixed into one 360-degree landscape that will enable and further support digital transformation.

4.7 What are key factors hindering the digital transformation process?

Making use of the reviewed literature from Chapter 2, particularly Evans' framework (Evans, 2017), high-level themes were extracted from the data collected from in-depth interview discussions with respondents, key resource evaluations, observations and student survey responses. Ideas, perceptions, themes and evidence were extracted and grouped to establish the validity of the research question, using NVivo to perform coding and analysis of data. Six key themes (leadership, governance, strategy and vision, culture, business models, and technological resources and capabilities) were identified as the main factors hindering the digital transformation process across WBS and Wits University, with the school and university interconnected and therefore impacting one another directly and indirectly. Sub-themes that correlated with the six key themes were also identified. The first 22 interview questions were addressed to gather insight into the overall perceptions across all high-level themes. The 23rd and last question was a follow-up question, asked to ascertain what respondents perceived as the most critical factors that need to be addressed immediately.

4.7.1 *Leadership*

Leadership across WBS and Wits University was identified as the most important factor, in that respondents perceived leadership as the main driver for digitalisation. However, the majority of the leaders at Wits University and WBS are more academic in orientation and strive towards achieving generic business goals with no clearly defined digital business goals. According to respondents within the landscape of WBS, unstable leadership has aggressively hindered the overall progress of the business school. Many respondents felt this lack of stability to be constant and that continuous administration changes were taking place too frequently. Although change is good, many respondents went on to share sentiments that echoed the following…

"We have had a number of leaders coming and going for the past five years. Almost every two years we have a new person, this new director, new strategy. We go back from scratch. There was a problem with that because people get used to the strategy mode and leave then until the moment comes. So there's never been a stability in the in terms of leadership of business called red. And the most problem thing that I think was the key thing was that we were getting people that did not understand the type of business that that we have." Respondent2

"Our leaders change too frequently. This has led to critical decisions changing constantly. Also we begin a new project or plan and then leadership changes and we are no longer able to complete that project as previously discussed or approved and now have to either restart or let it go completely. These projects often enough are of vital importance, but there's a constant change and we have to do what the new head states, even if we disagree." Respondent9

The lack of stable leadership has proved that the business strategy, and particularly the digital strategy, is constantly changing and, with that, no true results can be yielded long term. WBS is seeing small spikes of success but is not fully encompassing and utilising the resources, capabilities and technologies effectively. Although this was strongly highlighted at WBS, the notion of having a leadership that truly understands the importance of digitalisation feeds back into Wits University. Furthermore, respondents believe that the current leaders that have come into WBS do not fully understand the context of this school, its offerings and the differences within business models.

"Often we get these leaders who are academics, okay we get it you know the theory well and we see why you are important, but many times they do not know the business sense and end up making decisions that are more supportive towards other priorities which are not always most important or help us increase revenue – like worrying about more books in the library, as opposed to how we can use that investment to increase student numbers, this is just example." Respondent2

"There isn't one specific champion who we can really say is pushing the digital agenda at that senior level, not only within WBS but also from the university. The agenda seems to be focused on research, but they do

not seem to have an understanding of including digital to that agenda and yield better results all round." Respondent5

"Current leaders think it is IT that need to drive technological development and changes, yes we play a part of it, however, I feel they are missing the concept of the digital age and how exactly these new technologies impact all areas of business, I myself do not know and I guess that is why you are doing this research." Respondent4

Respondents across both WBS and Wits University shared the same opinions regarding the lack of a leader who is digitally inclined and digitally savvy, a leader who understands the requirements of this great paradigm shift in the digital business environment and not only fixates on academic business practices. Within both WBS and Wits University, from the respondents' perspective, the new leaders that are chosen to step in should have newly reformed leadership characteristics to embody, empower and most of all envisage the creation of something new and something different, as suggested by several respondents.

"Our new leaders need to be someone who is agile, flexible, someone who knows the market, understands this use of new technology and its presence in the business, someone who knows the problems and challenges and can wrap both the academic perspective and business perspective." Respondent2

"We need leaders who are bold, brave and most of all willing to let the experts do their jobs, not make decisions that implicate us. What I mean is: If you as a leader don't know much about it, but have people around you who know and who will guide you and then give you direction in terms of this is where we should be, this is where we should be going or this is where we should be playing. So I believe a leadership that is open to new ideas and if they don't know, then they surround themselves with people who know who will guide them and they will then either implement or support whoever is knowledgeable in that space to do what is required for the school. That's that." Respondent8

"For me, the digital the leadership required for digital transformation requires both agility and for that leader role to be a digital native, preferably, but if not a digital native, at least to be a digital immigrants. That is very much in the in that kind of that that strong learning and growth mind-sets environment, legacy or any leadership that is that is threatened or unable to be that agile growth mind-set is going to struggle to do transformation effectively." Respondent14

"For me, I think that leadership that is required is a leadership that that even embraces the importance of digital transformation that understands the importance of digital transformation. And so if they're not well versed, it's fine. But have people in place. If you as a leader don't know much about it, but have people around you who know and will guide you." Respondent10

Additionally, respondents supported the notion of a lack of communication and motivation from leadership to drive the necessary changes and implementation of digitalisation, new projects, relearning and unlearning of old business practices. This notion is discussed in more detail in Section 4.7.4 Culture.

4.7.2 *Governance*

Digitisation and digitalisation are disruptors in the higher education industry. Data obtained from the respondents and policies consulted supports the idea of governance being outdated and focused on the efficacy of traditional business models. Wits University maintains stringent governance policies and processes that do not specifically align with the digital business environment. Coupled with leadership, the underlying theme tied to it is that it is the responsibility of leadership to revise and redefine the governance policies of the university in order to make newly informed decisions that are quick, flexible and adaptable towards the digital business environment. Current governance policies and practices are hindering opportunities for and the progress of specific tasks and activities across the university and specifically in the business school.

"The current governance models followed are that which have been applicable from 70's and 80's, they are not well suited for the digital business environment, it's too hierarchical and far too rigid, there is no flexibility in governance here at the institution." Respondent1

"Governance, I don't think we're doing very well with that, WBS in my opinion has had broken governance, one needs to govern processes and if you want to make sure that the digital initiatives want to achieve something then those initiatives need to be coherent and impactful across." Respondent10

"In essence we do have governance models and roles which align specifically to certain areas like finance, which I believe as a university we are doing very well at. But if we talking of governance in relation to digitalisation, I don't think there is such as yet, maybe it might be in progress. Again though governance is coming from particular streams and not from an overall perspective." Respondent6

Furthermore, it should be noted that the business school's target audience of students differs significantly from the undergraduate and full-time students of the university. Therefore, flexibility and adaptability need to be employed in relation to the different audience groups, as pointed out by the following respondents:

"Our students are leaders in many relative business industries, these students are exposed to new ways of doing things in the business environments, yes they come to learn theories and skill themselves, but we need to meet or better our services to raise the expectations. We cannot be behind and show them different." Respondent2

"Business school doesn't practice what they preach. They teach agile, they teach scrum, they teach digital transformation. They teach digital marketing. And in some cases, they are not the sterling example of what they educate others on. That, to me, is an indication of bureaucracy, red tape and kind of slow adoption. This is I mean, as a sessional lecturer, I'm going to be very blunt here. If the university doesn't go through red tape and bureaucracy isn't able to transform digitally, they will become laggards against Gibs, GetSmarter and UKTI and the rest, because just like they preach to their students that digitisation is happening and you need to keep up. I believe in many cases they are far behind as a business school. So

that being said, unless someone at the helm can see diminishing returns or an inability to stay relevant and creates that leadership from the top down and reduce red tape and the ability to exist in the space, effectively, they are going to struggle in my mind-set." Respondent13

According to Document 3, which concerns digital learning and teaching strategy and was originally formulated in 2018, there is a notion of becoming flexible, as indicated below.

"Now is the time to challenge our institutional practices and collectively embrace pedagogical models that further engage our students in their education. We need to introduce scalable and sustainable practices that better leverage the affordances that technologies can provide to deliver a flexible and personalised learning experience." Document 3

While the university is one year away from its 2022 vision, respondents do not perceive that governance has reformed and become more adaptable towards delivering flexible and personalised learning experience. Governance policies are outdated and to some extent inapplicable to particular areas of the value chain at present. Students and sessional lecturers at WBS and across other parts of the university are beginning to teach and equip the university with new ways of doing things. Although the university is teaching and preaching about the new way, this new way is not being administered or implemented across the university environment, its business activities or processes.

4.7.3 *Strategy and Vision*

According to the insights, perceptions and sentiments shared by respondents, students and the communications or policies used in the data collection, Wits University and WBS do not have a clearly defined digital transformation strategy, nor do they have any well-developed digital vision or digital strategy. Wits University's dedicated strategy, which has been communicated and has been in place for a number of years, reflects the research strategy or goal of reaching the best research output. Wits University has been very successful at employing this strategy and it continues to shine.

"There is no communicated digital strategy or vision to empower the university community, being staff and students. Wits needs to clearly announcing its strategy to ensure its community is driven, they need that vision to build the momentum that will increase the buy-in of digital transformation, we don't see this happening." Respondent13

"I don't think we have a digital strategy, but we definitely have pockets of strategy. We have a few operational interventions, but it is not part of a bigger digital transformation strategy of the school or the University for that matter." Respondent1

The lack of a digital transformation strategy was clearly articulated in Section 4.5, which sought to answer the research question: Does WBS have a digital transformation strategy to deliver on its digital promises? However, respondents within the digital business environment who clearly understood the changes and significance behind having a digital transformation strategy believed that the strategy could be interrelated with research, which is a key priority, amongst many other outputs of the university.

"The university needs to understand, it is not just about introducing digital technologies to enable our practices but also to be frontiers into how digitalisation is impacting all other fields of study. So, I mean, it's a good point, for the work we teach. It's still the case of us as a university needing subject matter experts in all the domains of business science. So finance, marketing, you name it, innovation, etc. So you still need subject matter expertise in all of that. But that needs to be supplemented with an understanding of how. The technological age is changing those. So there needs to be, in a sense, more open mindedness and more. Which integrates with the digital strategy, but just may be a different business model of strategy or something to that effect." Respondent1

Furthermore, respondents also stated that the university should have a global digital strategy and that schools and faculties should also have customised strategies that align with the global group strategy for them to progress in the digital business environment.

"Ultimately, the university needs to dictate the overall group strategy, which all schools need to follow or customise according to their specialities but still form in line with the overall University goals, KPIs and business operations, we should stop doing things that are significantly different from one another." Respondent2

Moreover, with no digital strategy in place, investments are often made without a clear direction, resulting in decisions that do not lead to the best returns on investments. Respondents shared the following:

"We are investing in digital things, I can see that, but without a clear vision of where we are headed essentially, these investments are going to be costly and expensive and we not sure what type of returns they are going to yield, especially if they may not be relevant in the near future." Respondent14

"WBS has been investing in a number of digital and non-digital related business solutions, softwares, training and so forth. But we also don't see why? What is the purpose and ultimately sometime we get these solutions and then governance and processes don't align to what the university wants, so are we really doing the right thing?" Respondent9

The lack of a clearly defined digital transformation strategy or even a digital business strategy is hindering the success and growth of the university overall. WBS cannot drive the strategy in isolation as it needs support and governance policies, and for senior management to lead the way forward to a successful and sustainable digital business environment.

4.7.4 *Culture*

Cultural changes and developments are often dictated by and inculcated from senior leaders. Digitalisation disruption is not only about adopting technology into business but also about understanding the cultural mind-set and paradigm shifts that need to occur for the digitalisation to be successful and socially acceptable in the university environment. Organisational culture was recognised as one of the hindrance factors with the greatest impact and was found to be suppressing the growth of the university from both a digital and a traditional business perspective. The sentiments shared below have been taken from both the students and staff of the university community. The general view of the research respondents was that WBS and the university are stuck in following older workflows, governance and processes. The institution is strict about following rules, processes and procedures that may have been beneficial ten or more years ago but are no longer perceived to be in the best interest of the customer. The processes follow the authoritative approach to doing things as required by senior management or dictated by SET. Respondents shared the following views:

"They are resistant to change and want to do things the old ways, which isn't digitalised in most cases." Student Respondent

"I've experienced poor communication and lack of use of the digital platforms provided, we are doing manual processes in a digital age." Student Respondent

"Some admin and academic staff really need better training to utilise collaboration tools such as Teams and Zoom, we can't rely on the people teaching us, when they are not even learned themselves with basic technologies." Student Respondent

According to the data sources consulted, the cultural situation recognised above stems from multiple attributes associated with the overall culture at Wits University and sadly impacts the culture within WBS. Internally across the university, and more prevalently within WBS, strong opinions and sentiments were shared, which created a different perspective of the university as a whole. Discussions led to respondents expressing the following feelings:

"Lack of motivation from the university, or our senior managers or heads, there are no incentives ever but we are expected to continue to provide our best, even small incentives make the biggest difference and keep us as employees happy which will make us enjoy our place of work." Respondent9

"…very conservative and traditionalist culture, it flows directly from the university culture, it is also very hierarchical and follows a top-down approach, the culture does not in any way reflect a dynamic transformative culture that is required in this digital age." Respondent1

"…major challenge is that staff do not show any initiative, people are not open minded towards digitalisation and getting on board with the changing way in which people need to work, people across WBS are highly resistant to change and are not conforming to new ways of doing things." Respondent7

"Many people are very not satisfied with how we've been treated. I think just from the root from the university overall for people just becoming so people complain about our attitude bit. I mean, I honestly don't think it's from individual basis. I think it's about how the structure of the university is overall and how he's treating the support staff and their support and their staff in general. So a lot of culture change needs to happen. Hopefully somebody hopefully the VC [Vice Chancellor] will change, will have a new strategy which will include this, the culture change that is necessary, the environment, something like hopefully he will touch on that because I didn't see it on the 20/20 vision." Respondent2

The respondents' perceptions point to a lack of communication and motivation from the senior management teams across the university. Respondents expressed the need for incentives or recognition programmes to uphold the momentum and satisfaction of the employees across the university and within their particular schools or departments. There is no clear communication on the way forward, which impacts the attitude of the respondents. Many respondents supported the following idea:

"If the university shows us clearly what is our focus, where are we striving to be and what we are doing to get there as well as continuously remind us and motivate us to being better or incentive those of us who are actively making a difference to make this place better, to keep our students happy etc, then maybe all our employees will adapt a much more friendlier attitude and be more open to change." Respondent7

Respondents are not being recognised for their achievements and are thus 'doing what needs to be done' but are not looking to go beyond, as they feel it is not worth their time or energy. These ordeals have further led to the recognition that employees are meant to follow the instructions of those higher in authority by doing exactly what they are told. Employees are not thinking further or adapting critical thinking abilities to align their tasks in finding better ways of working. Respondents shared insight into typical experiences of not having their ideas taken seriously or realised within the senior management groups of the school and SET. A respondent went further to explain:

"We may have better ideas and we want to do things differently, but even if we raise these ideas, most of the time they are overlooked and nothing happens. Yet we deal directly with the students and know what the students are expecting." Respondent5

Furthermore, the lack of a strategy around people management and change management implicates the overall cultural experience that is recognised across the university. Respondents alluded to need for the leaders to develop a cultural transformational strategy in line with digital strategies.

4.7.5 *Business models*

"That WBS and Wits University should create a digital ecosystem that allows for multiple functions of different business practices to be included." Respondent5

"I think we should be looking at new business models, our processes are super strict and stringent, like up until the pandemic Covid-19 we had measures of people coming into the university to submit their applications, with their documents etc, while they can do this online through email and it can still be applicable, requesting hand deliveries in this day and age is really frustrating for most students especially our post-graduates. Also I believe content and teaching should be blended, majority of courses need to transform into a blended format. I'm not sure what are discrepancies, but it can work." Respondent12

Generally, respondents perceived the business models to be outdated and saw the need for them to be redefined. As indicated above, it has taken a global pandemic for the university to move over to digitise business processes. The perceptions and sentiments shared by respondents regarding business models ultimately lack a well thought out vision. The lack of a digital vision is interconnected with the lack of strategic direction and of leadership who govern the business models. This means that the business models are not assessing the situation at a higher level of business but rather addressing smaller issues and challenges and are adapting quick-fix methodologies to resolve and eliminate the issues, as indicated by some respondents.

"So if we look at the current model, then in essence I'm not saying so much from governance practice, but really but from process more point of view is it's still light and undefined. It's still in an unfinished state of what should be done. So there isn't really a vision that is set the theme for what should be done at this stage. I think it's more rather fighting fires and application implementation and some form of measurement as opposed to a strong specific vision with the various different plans and strategies within those plans at this stage." Respondent5

"So my take is, so when we talk business models, I mean, it can mean a lot of things to a lot of people. So one thing we haven't spoken about is the research agenda. I think the business model for the research agenda is still the right one, namely that people sign up. They do research them. It is it is it is proper academic research as opposed to consulting or research. So I think the research business model remains valid. I think the teaching business model needs to be supplemented with online programmess, which can be scaled far more aggressively than classroom teaching. So I think the classroom teaching model needs to be supplemented with an online version. And just to add to that, I mean, knowing that puts a scores over like a third revenue income stream for the university and that they also do some sort of training for other industry leaders. Or, you know, this you guys do a lot of training for corporate groups, et cetera. The model needs to be relevant for these groups who are already moving forward in digital transformation." Respondent1

The respondents' answers created the understanding and clarified that the university, and WBS in particular, has multiple business models that need to be revised in the context of the adaptability of these business models in the digital business environment.

Furthermore, respondents suggested acquiring external business analysts and expertise that will aid the university to become dynamically adaptable while considering the magnitude of multiple business models, as indicated in the following response:

"Those are the key things, because I think you have to consider the whole business because, you know, digital officer from an outside organisation who doesn't have insight into higher education must think that trying paperless, getting rid of paper and optimising academic and administrative processes can be realised from an external perspective. We as an institution are not recognising where the value is lying. I mean it's not really that hard where the real value comes from." Respondent6

Respondents identified this through their personal experiences when dealing with different scenarios. A common challenge with some of the WBS and other post-graduate or short-course business models is that, for example, the current workflows and processes around simple application processes are typically walk-in scenarios that require hand-delivery applications, with students coming in to deliver their application forms. This is all pre-Covid-19.

"Can you believe we are in a digital era, and students must come deliver their application forms here to our admin staff in order for it to be recognised, this is insane." Respondent15

"Students are one thing, but even staff are still completing manual processes, like HR processes, staff are still hand completing forms, and need to come through to hand deliver claim forms. I am sure we can do this a lot better in a digital way." Respondent13

In this digital age, with the highly digitised generation groups who are technologically inclined and digitally savvy and expect convenient processes and real-time responses, Wits University still stringently insists on hand delivery of applications. This has led to respondents expressing their frustrations with having to deal constantly with the same challenges. This frustration led to a respondent uncovering a significant factor about platform architecture, as they narrated:

"We had to look at why is it not possible at this time to have some sort of online application process for these students, I had a representative from our school look into the issue further, to find that actually, the whole reason we cannot have online applications is because the current 'short course system' that we utilise to configure the details of the applicant does not integrate with any other digital solutions or platforms offered across the university, now how is this even possible, who even allowed this type of thing to come in from the first place? Why hasn't it been upgraded or updated? Why are using this as an excuse?" Respondent10

Respondents have uncovered numerous challenges with business models and the platforms being utilised at Wits University. However, they also know that while the university may not be at the forefront of digital transformation and digitalisation, it is definitely transforming and updating its platforms and systems to adapt and address the

issues it faces. At present, the transformation is more about integrating the platforms into new business models that work in a digital business environment.

4.7.6 *Technological resources and capabilities*

Investments in technological resources and capabilities are being made within WBS and across different levels of Wits University. Respondents, however, felt that the investments are not being critically evaluated to ensure that they are being used for a greater purpose. This further ties into the practice of investing in quick solutions to current challenges without considering whether the new investments in these technologies will be worthwhile or even aligned with other significant technological software and platforms that the university currently uses. In a similar way to the short-course system, the university has other systems, as expressed by a few respondents.

"We currently use the Oracle, service cloud CRM. This was meant to make our lives easier, but because it does not integrate with any of Wits systems like short course system or sims or finance etc, we are not truly being productive with this system, yet we invested significantly. This is merely one example, there are many other similarly to this across the university, but ICT, BIS [Business Intelligence Services] or even SET are not looking into these situations correctly." Respondent10

"Like as a student, I mean we have like three or more sites that we need to use to access study materials, results, timetables, libraries and more it's so complex, clearly the reason for this is because no one up above thought this through previously, they are just adding and adding, it's like students don't matter, we can use seven sites if we need to. Why can't we have one integrated platform and have everything there." Student Respondent

"Wits App, is like not even worth it. We still need to access so many different places to get things, the app supposed to give us everything in one place. A lot of customisation is needed for students." Student Respondent

Respondents' opinions mostly centred on the idea that university investment decisions may to a large extent be made incorrectly or not be well informed. Furthermore, they believed that if the university does not employ decision makers with the digital mind-set shift and a good understanding of which digital investments should be made, external parties with relevant information, experience and expertise should be brought in to guide the university towards appropriate investments.

"It is evident, the university support structures may also be lacking the thinking, methodologies and business sense around the correct technologies as well as identifying the correct individuals to join these transformational teams. Academically we have the insight and it is still growing, but I do not believe our

seniors as well have this insight and know about the implications of these decisions of poor choices in technology, digital platforms and hiring the incorrect people for positions that are yet to be determined." Respondent1

The majority of the respondents shared very similar sentiments to the response above, suggesting that the human resources and capabilities needed in this digital era also require a significant number of investments and a methodology around the paradigm shift in training the experts in particular fields to equip them with the necessary digitalisation knowledge, know-how and skills.

"The real value comes from the academic project, academic and research project. How do we use technology to help research? How do we use technology to help each other? We use technology to help students. Those are the key things. And then there obviously to do those things, we have to then focus on our administrative business." Respondent6

Digital skills and capabilities need to be acknowledged and administered and training provided to meet the new technological developments taking place. Key dynamic capabilities should also be acquired and enabled. This was alluded to in the statement by a respondent who shared the following:

"We need to talk about dynamic capabilities, we need capabilities to teach online, to be able to amend our programmes to ensure it remains relevant in the digital era, secondly we need to update our content, what we teach and update the capabilities around delivering this content in the most modern digital way, yet remaining appropriate and delivering it through the correct digital platforms that effectively delivery our learning. Apart from that the other key area is digitising capabilities in administration, we need to have tech and digitally savvy academic and support staff that can help make the magic happen." Respondent1

These capabilities were further enhanced through the quick adaption that individuals, both employees and students, had to make to new forms of teaching and learning, with administrators now having to conduct general previously paper-based manual processes online, with the push through the Covid-19 pandemic in 2020. Prior to the pandemic, respondents felt there was a reluctance among individuals to adapt to new ways of doing things. However, this resistance was overcome in the pandemic, which presented an unexpected opportunity for the university to realise the shift that needed to take place. Academics who could not see online learning as possible have now made it possible to teach their programmes in this way.

These advancements are carried out currently as small pockets of digital initiatives and there is no strategy in place to highlight the change and people management needed to accommodate it. Respondents shared that they are not initially made aware of these

advancements but are later informed that they need to start using the tools. Training or workshops are not enough for some respondents, as one respondent pointed out.

"We get trained, yes, we have one training session and then we miraculously must know how to use this system, it takes time and we do not often enough get the necessary support from IT or even management, we are just expected to learn and be able to do it. But these technologies are not always so easy, our staff need to be put through competency skills testings first to see where they are and thereafter aid them to becoming more digitally savvy. I have found some staff who won't click further because they are scared, this fear holds them back as they feel they are going to make mistakes." Respondent2

Some respondents are fearful of the digital changes and are willing to make the change but are scared that they may make mistakes and be reprimanded owing to the authoritative nature of the university and its leadership.

4.8 Summary of the results

A number of themes were highlighted and raised important issues, with the most critical themes that emerged from this study being leadership, strategy and vision, and culture. From the data collected and collated, the majority of the responses and information gathered identified leadership as being the critical factor that underpins all other decisions, strategies and tasks that will pave the road for a successful digital transformation journey. There is a need for senior management to cultivate digitalisation, communicate effectively, and motivate and drive the people within the university community, both students and staff, towards a digital vision and strategy that will aid the university towards the forefront of digitalisation and becoming a renowned digital university, a university that is both academically digital and digitally focused. In relation to this, an extended link is the expectation to drive and inculcate a digitally advanced culture that supports digital automation and digitalisation, through a customer-driven approach.

Furthermore, leaders driving the digital frontiers of this transformation journey are required to be brave, bold and willing to take risks and leaps into the unknown, in order to create and promote newly formed business models to ensure the long-term sustainability of the university and its business school. This implicates a variety of disciplines within current business models, governance, human capital, resources and capabilities. Aligned to this paradigm shift are calls for platform architecture, mind-set and agile infrastructure to be open, flexible and adaptable in order to ensure that success is achieved within the digital ecosystem and digital business environment.

It is evident that there are some digital tactics and initiatives in place currently and this creates a perception of a positive alignment towards digital transformation across the university although there are critical aspects that are missing from the digital transformation changes being adapted within the university that need to be highlighted and quickly adapted to accommodate the changes taking place. In summary, leadership needs to take the frontier and drive a sound digital transformation strategy for the university and its sister groups. This strategy needs to be well defined and communicated widely.

To support this, a cultural transformation and individual empowerment would be required to enhance the digital transformation efforts as indicated by respondents. Ideally it should promote the learning, relearning and unlearning of methodologies, ways of work and new ways of adaptation. It should also strive to promote the way in which the university should be imagined and what it means to be a university in the digital era. Digital skills and competencies were highlighted and these require not only technical skills but also cognitive and soft skills. In this rapidly changing digital business environment, the mind-set shift requires of individuals bravery, boldness and a willingness to move out of their comfort zones and embrace new ways of collaboration, thinking, methodologies and new technological adaptations.

CHAPTER 5. DISCUSSION OF RESULTS

5.1 Introduction

Chapter 5 provides a discussion of the research findings in Chapter 4 in relation to the Digital Maturity Model (Westerman et al., 2014) and the Digital Transformation Framework (Evans, 2017), which were identified from the literature and used to provide a frame of reference for the study. The discussion also relates the findings to the research questions posed in Chapter 2. To generate a synthesis of the findings, the key learnings from the literature in Chapter 2 have been integrated with the relevant findings from the in-depth semi-structured interviews, student questionnaires, primary observations and Wits University policies and information sources as presented in Chapter 4, in correlation with the research questions generated for the purpose of this study. The views of the respondents were sought to uncover the digital maturity state of WBS and the association between WBS and Wits University. The findings contribute to strategic business development, practices, policies and the fundamental realignment of the business models of the university to be fostered and grow in the digital business environment. The synthesis reveals critical options that WBS and Wits University can use to transform the traditional organisational landscape into a successful digital landscape.

5.2 What is the Digital Maturity of WBS?

The aim of Research Question 1 was to determine the digital state of WBS, through the evaluation of the Digital Maturity Model, as set out in Chapter 2, as a frame of reference. This was achieved through the use of multiple sources of data – in-depth interviews, surveys, observations and policies – to identify and clearly articulate the current digital state of WBS and its interconnectedness to Wits University.

Literature points to a rapid development of new digital technologies that are advancing the economic and market landscapes (Westerman et al., 2012). New innovations in digital technology are being used by all consumers and businesses. According to Davies et al. (2015), digital maturity is the degree to which an organisation can thrive in the digital era. This includes its ability to deliver on a digital strategy and achieve digital transformation objectives (Westerman et al., 2014). Different levels of digital maturity can be achieved. The process begins with understanding the position of an organisation in

its current state and then determining the state of digital maturity it wishes to attain (Davies et al., 2015; Kane et al., 2019). Westerman et al. (2014) Digital Maturity Model describes digital maturity as a combination of two separate yet interrelated dimensions: leadership capability and digital capability. The model identifies four digital maturity archetypes: (1) beginners, (2) fashionistas, (3) conservatives and (4) digital masters. Beginners are those advanced in traditional applications with minimal advances in digital capabilities, while fashionistas have increased digital capabilities but lack the leadership to drive informed transformational strategies. Conservatives are strongly bound to their traditional governance and policies, making informed strategic decisions but displaying scepticism and a slow uptake of digital capabilities. Digital masters have matured in both dimensions equally and are the highest performing group (Westerman et al., 2014). The model is summarised in Figure 4, Chapter 2, Section 2.3.

As shown in the collated data presented in Section 4.3 of Chapter 4, the majority of the respondents indicated that they would rank WBS as being a level one or two, on a scale of one to five, where one is the lowest and five is the highest degree of digitalisation. These rankings reflected personal experiences and engagement with new digital technologies and services. Respondents indicated that leadership was a key driver around the theme of digital maturity; leaders across both WBS and Wits University do not seem to be promoting a digital vision, but rather are seen to embrace multiple digital initiatives, as indicated by Respondent 1: *"We are at a one, at most maybe a two, because we are seeing small digital activities taking place, but we are not seeing like organisational level benefits yet, we don't see any big plans for digitalisation, so yes we have new technologies, but are they really for a greater purposes?"*

The collated data shows that there is acknowledgement that some digital initiatives have taken place across the university over the last few years; however, there are no defined communications around a digital vision and there is still a strong sense that leadership is operating within a traditional business model. A gradual increase in the use of digital technologies is being seen and this slowed pace is primarily the result of the strict governance, policies and processes that need to be followed. Fundamentally, respondents believe that the Covid-19 pandemic has led leaders to identify the need to increase digital technologies, digital capabilities and digital skills in order to progress in the digital business environment.

In terms of its classification on the Likert scale, coupled with the data from in-depth analysis of the interviews, survey responses, policies and observational data WBS can be recognised as operating at the 'beginner' archetype in terms of the Digital Maturity

Model. Leaders within WBS across the different departments are not placed equally on the level of digital leadership skills, compatibilities and savviness. The business acumen that is characteristic of the beginner archetype describes the interrelation between Wits University and WBS, in that WBS needs to follow specific governance, policies and processes as dictated by the parent university. By sticking to old and outdated traditional business models, governance, policies and processes the university is positively following older prescribed ways of doing things. The data from the interviews specifically revealed that the leaders' sticking to these old outdated business practices is hindering the success of the university, which is missing out on new opportunities as it remains inflexible about adapting to the digital business environment. This was confirmed by Respondent 2, who stated: *"We know we need to follow policies, and decisions cannot just be made easily, but the timelines are very long, we have lost so many opportunities over the last years because we do not have digital capabilities and other requirements from our executive education streams, all we ask our head is to acknowledge this as a problem area for our business, they need to become flexible, it cannot take months for approvals, we are losing business."*

Interestingly, both the literature and data insights emphasise the need for leadership to drive changes (Westerman et al., 2014). Leadership capabilities are of paramount importance in digitally transforming the way in which business operations, practices and governance are upheld. Respondents indicated that leaders need to be willing to adopt a flexible attitude to the newly formed digitised ways of doing things and they need to communicate this effectively to the rest of the university environment. While Wits University may demand strict adherence to its policies and processes, the sudden need to adjust and adapt to newly formed ways of doing things brought about by the Covid-19 pandemic has opened the mind-set of the respondents to explicitly identifying new methods and they are now aware that these newly formed ways are possible. Respondents strongly identified these changes as practices that should remain and be improved on going forward post-Covid-19. This sudden change has not only led the university to a successful adaptation of newly formed ways of doing things but also generated the buy-in and cultural mind-set shift to understanding the importance of being and becoming a highly digitised university institution.

Furthermore, while this pandemic may have slowed business revenue, it has generated a positive outlook for digital transformation to occur in an existing traditionalist business environment in which old and outdated business processes and policies have been stringently followed. The pandemic has influenced leaders into identifying new opportunities that can potentially move the university into the digital master's archetype of the Digital Maturity Model. The sudden need for new digital technologies, procuring of

new systems and adaptation to new technologies along with improving digital skills and capabilities during the pandemic has rapidly increased the digital maturity of the university over the last year. Fundamentally, there is still a requirement from the university to follow processes and policies; however, respondents have found hope in the acknowledgement that there is a need to find newly formed ways of doing things. The increase in awareness of the need to digitise, the appointments of two new leaders with strengths in digital business and the sudden increase in investments in new digital technological solutions have provided hope to the university workforce and increased the likelihood of newly reformed digital processes, policies and business practices. It can be argued that the paradigm shift required for the university to digitally transform is taking place and that the digital transformation journey is rapidly moving forward for Wits University and WBS.

5.3 What are the essential building blocks to implement the digital transformation strategy?

Research Question 2 was posed to identify the essential building blocks for implementing a digital transformation strategy through collecting data via in-depth interviews, survey responses, policies and observations. The building blocks identified related back to the high-level themes built into the Digital Transformation Framework described in Chapter 2. These themes were: Strategy and Vision, People and Culture, Processes and Governance, and Technologies and Capabilities. Sub-themes emerged in relation to the high-level themes.

Fundamentally, the study uncovered that the concept of digital transformation meant different things to different individuals depending on their job roles, their levels of engagement in digital initiatives and holistically their personal digital savviness and understanding of the digital era. There was, however, a clear overlap between the concepts of digitisation, digitalisation and digital transformation. Furthermore, similar views were expressed, and these were linked to some form of digitisation and digitalisation, which signifies the ongoing trajectory and continuation of digital transformation at WBS and Wits University. Many building blocks pointed to the established connection and hierarchical approach that feed WBS decisions towards any changes and transformations. The building blocks as they relate to each of the themes that make up the Digital Transformation Framework are discussed below.

5.3.1 *People and Culture*

Literature found that leadership is a potential prerequisite for successful digital transformation implementation, coupled with the specific competencies and newly formed dynamic capabilities (Dubru, 2017; Westerman et al., 2014). According to Kiron et al. (2016) and (Kane, 2017), leadership is critical to the development of the desired organisational culture, and the identification and retention of the appropriate digital skills and competencies. Mogale (2019) suggests the essence of an organisation is its culture, and the values and the people that drive the organisation. For Milano (2019), a digital culture is built on collaboration, agility, the cross-functionality of teams and experimentational learning. Moreover, leadership is the top-tier building block, whilst another critical building block identified by the respondents was people management and culture. Research suggests that culture is an accelerator in driving successful digital transformation (Deloitte, 2019; Kane et al., 2015; Mogale, 2019). A theme related to culture is digital skills, with investments in developing digital skills a successful building block to digital transformation (Bolton, 2013) that increase the organisation's competitive advantage within the digital era (Kane et al., 2015; Milano, 2019).

Through the analysis of the data collated from the interviews, surveys and policies, results revealed similar insights to the literature researched. Respondents highlighted the importance of having stable leadership as a critical building block for transformation, which corroborated literature (Dubru, 2017; Westerman et al., 2014). This was neatly articulated by Respondent 2, who referred to the importance of: *"leadership that is going to motivate, push and steer us in the direction of a digitally advanced vision."* This was highlighted in response to the high turnover of leadership at WBS, which has created a culture of instability, with miscommunications and a decreased drive towards specific projects. Many respondents shared that the changes in leadership every two years has led them to being misled, in terms of what direction they need to follow, as indicated by Respondent 2 below.

"If we can have a leader who stays it would be nice, changing strategies every few years does not allow us to follow through and see our projects to the end sometimes. We lose motivation, because someone new is going to come in and change things again in a few months. We need to know where we are headed and what process we are following to get there, even if a new head of school comes in the basic context should stay so we don't keep moving in circles." Respondent2

Each new leader makes changes. Sometimes these changes are not interconnected and so make teams lose sight of previous strategies or projects as they do not align specifically with the team's aims for the group. In saying this, some leaders have proved

not to have a clear understanding of the WBS group, its customers and business in essence. WBS needs to acquire leadership that is business orientated and has an understanding of what is academically mandatory to meet the requirements and governance of an educational institution. The call for bold, brave and digitally savvy leadership is to empower the university to take a stand and move away from the old historical and outdated business practices and be courageous enough to introduce newly formed ways of doing things, tying in the rationale of steering the group from the front instead of the top. A transformational leader needs to ensure that they possess relevant business skills, influential skills and specifically cognitive skills. This should be a leader who has personality traits that include being empowering, motivational and energetic whilst at the same time factor in the traits of being an academic profiler who can identify the importance of following rules, regulations and other protocols as necessary. Respondents announced the arrival of the new head of school for WBS (Mr Maurice Radebe), as of January 2021. Most respondents are hopeful and optimistic about having this leader steer their school to success.

The views on the current culture are more negative and point to the culture of following a highly authoritative leadership style. Respondents felt that they need to conform or leave. There is no collective of generating ideas from the bottom up. Respondents' sentiments showed that they believe leadership's drive in orientating a collaborative and cross-functional culture to be an enabler of a transformative mind-set and a problem-solving dynamic that will aid in removing obstacles from teams. Additionally, data collected across this research study indicates that respondents want to be recognised for their efforts, and to be offered incentives and awards that will help employees continuously stay motivated. They want their leaders and senior managers to communicate openly with them and include them in idea-generation phases and even in decisions if possible.

Wits University, in line with WBS, should embrace a cultural awareness that strives to increase flexibility, creativity, cross-functional teams and collaboration. There is a serious lack of collaboration amongst teams, and this is hindering the overall growth of an institution that is made up of many experts and professionals who are the best in their fields. It is apparent from WBS respondents that the mind-set within the group is channelled from Wits University. Certain teams progress and move forward but do not thereafter inculcate a culture of assisting others within the university and teaching them new tactics and new ways of doing things. They are left to recognise the change but can either stay comfortable in the way they are currently doing things or progress on their

own. This highlighted another critical area that respondents identified as ‘the siloed mentality’. Respondents shared that the silo mentality is quite substantial across the university, with a strong internal competition is very strong that makes employees compete rather than grow together.

Digital transformation requires a diverse range of business units to work hand in hand for successful implementation. Respondents were of the view that leadership should drive individual and team developments to inculcate a greater level of productivity from a group. The sentiments drawn in relation to diversity also revealed a silo mentality, as shown in the following response:

“People who update or upskill themselves are unwilling to teach others and are selfish in sharing their knowledge to empower others, their group must be better, we can’t grow if we are all the same or less than” Respondent13

Respondents felt that if leadership does not influence, drive and encourage employees who have gained new knowledge and skills to teach or assist others, then ultimately the greater team will fall and productivity will be hindered. The unwillingness to share knowledge or teach and unlearn or relearn new methods is evident. Linking the above mentioned literature to the data, it can be argued that leadership should strive to create a new paradigm shift in retrospect of digital building blocks combined with the human touchpoint, resources and capabilities. In line with human capabilities the other essential building block of digital skills is formed. According to the results collected from respondents, Wits University and WBS had not yet cultivated a culture that empowers digital skills prior to the Covid-19 pandemic. With the pandemic, there was an acquired need to facilitate all business-related activities online and this pushed many teams out of traditional business operations and forced them to undertake the necessary digital training for the tasks at hand. It can be argued that this force may have been the push the university required to recognise the importance of transforming the university landscape from a traditional educational landscape into a newly reformed digitally savvy business environment, facilitating teaching and learning programmes through digital methods.

Holistically, across the university there were mixed opinions about the required skills for a digital era that are currently available within the university’s employee community. At this point, skills across the university in conjunction with WBS need to be clearly defined. The analysis of the different types of skills is required as current skillsets, coupled with newly reformed skillsets, need to be distributed across the university in different lines of measure. What is meant by this is:

"For the work we teach, it's still the case of being an expert in that field, we still need subject matter experts in all the domains of business sciences. So in finance, marketing, you name it, innovation etc. But that needs to now be supplemented with an understanding of how the technological age is changing those fields and dynamisms. There needs to be increased adaptability and flexibility in now what we teach as well as how we teach it." Respondent1

The above sentiment refers to many employees across the university, not only those who are necessarily teaching or lecturing or are specialised experts in their fields but even those in supporting roles. All employees need to look into what they currently do and how they can technologically advance and improve themselves or their field with updated and new ways of performing the tasks at hand. However, the data uncovered a feeling by respondents that, owing to the lack of a clear vision and lack of motivation from senior management across both WBS and Wits University, there is no need for them to improve themselves and upskill because there is nothing that ultimately drives them. Many confirmed that individually they lack the inspiration to upskill themselves, although there was a call by some to reimagine, learn new and unlearn some qualities and skills for the future. The current skills are not adequate and lack critical elements such as problem-solving techniques, and staff wish to be provided with what they need to do, instead of critically thinking and using their own mental capacities to move forward. The lack of motivation and incentives has resulted in respondents feeling that they are not recognised for their efforts and has left them to question why they need to go the extra mile, when it does not matter:

"So there is no willingness from the employees and this is because there is no support or no incentives, like I can work till 3am and make sure I get the work done correctly, but I'll still get the same salary, no over time, no appreciation or simply no recognition either for a job well-done. Sometimes we are helping other teams, yet they are not willing to do the same." Respondent2

This further highlighted that technology can potentially be the heart of digital transformation, and thus skills associated with technologies are critically important. Leadership needs to motivate individuals to upskill.

5.3.2 *Strategy and Vision*

Literature identifies two types of business strategies that can be pursued in the digital business context: a digitised solutions strategy and a customer engagement strategy (El Sawy et al., 2016; Ross et al., 2017). A customer engagement strategy is developed through focusing on customer centricity, whilst creating a personalised customer experience through digital services (Sahu et al., 2018). A digitised solutions strategy

focuses on developing digitised data-driven products to create new value opportunities for customers (Ross et al., 2017).

According to respondents' comments, the focus of WBS and Wits University is mostly customer centric as students are at the heart of the institution. However, with this being said, no defined customer-centric digital vision or digital strategy has been developed. However, the institution takes digital initiatives that empower a customer-centric focus. WBS constantly gains insights from its current customer segments and continues to strive for customer-service excellence based on what these customers need. In line with being digitally focused, improving customer services is vital. Understanding the role customer services play in digital transformation is inevitably one of the most important building blocks. However, respondents shared that the balance created to improve customer services and business processes was enabled through the WBS employee division of labour and the extra efforts made between its business units and the central university's teams to equip them with the digital tools, skills and amenities required for the upkeep of current business processes.

"Remember, now we are offering educational services to multiple industries, whatever current system we have is not aligned to serve this industries and does not allow us to serve the customers adequately. Like with the research system we currently have, we at WBS have complained timelessly to management, right now we are under pressure to deliver on what the market needs and wants and our systems and processes are outdated, another example was earlier in the year we did a customer satisfaction survey, the results thereof showed that on a post graduate level, with more advanced adults registering for our courses, we are still paper based for applications, registrations etc." Respondent2

"I think to a large extent WBS has rather been geared to a causation situation rather than a reality of them actually being prepared to cater to a dynamic and technologically advanced market, with this kind of thing, I would say Digital transformation and initiatives to digitised have been a little bit slow of the mark." Respondent5

The above quotation, which is from a senior employee, spells out the employees' dissatisfaction with constantly having to implement ad hoc strategies and improvise, as the university does not cater to the requirements of a dynamically evolving market. It is clear that the university is not at the forefront of improving customer services on a wider scale. Instead, each school has to implement new systems and processes to assist their particular groups. Respondents highlighted how this has been a time-consuming exercise.

The interconnectedness of WBS and Wits University means that insights are often misinterpreted or taken into account wrongly. In addition, sometimes changes or

digitalised solutions are introduced with fairly long implementation timelines, some of two to five years. The ever-changing and dynamic digital environment and the introduction of new disruptive technologies mean that these timelines do not make sense. Technology changes so swiftly that by the time these changes have been made in the university, new solutions have entered the market that can offer far more value, such as solutions that could work across multiple levels of the university and not specifically within a specialised school to conform or eliminate a specific challenge within that school.

Furthermore, to embody a customer-centric digital strategy, it is vital for the university to make a conscious effort to become fully digitally focused across the different streams of the value chain. Respondents stipulated that it is not only the processes and services, both administrative and teaching that require a digital focus, but also the content, material and teaching methodologies. The university is an environment that creates pioneers within specific fields across multiple industries. This digital focus needs to align with the context of all the different fields of study. One respondent acknowledged the introduction of the BCX programme, which contains academic programmes such as the Masters of Management in Digital Business and similar post-graduate diplomas and short courses that cover the digital environment. This particular programme can be recognised as WBS's competitive advantage threshold over other similar business schools across the region. Similar to this, Wits University has multiple other digitalised programmes, projects and solutions across different fields, becoming a pioneer in research within the context of digital solutions in the respective fields. This has provided hope for the respondents.

5.3.3 *Processes and Governance*

Ciriello et al. (2018) state that disruptive digital technologies are contributing to transformation and economies of scale. Moreover, in order to digitally innovate, a mind-set that embraces innovation and an entrepreneurial spirit are required (Mogale, 2019). For organisations that aim to stay relevant and innovative, Capgemini (2012) suggests that governance is critical for driving successful innovation and transformation. According to Tripathi et al. (2018), digital innovation in isolation decentralises overall governance throughout the organisation.

With a forward-looking leadership, a clear digital vision and strategy, and a supportive organisational culture, both academic and support-related employees will be appropriately motivated to develop new innovative ideas and ways of doing things. However, the general response from respondents did not confirm digital innovation. They

felt that the hierarchal and authoritative nature of senior management meant that they had to follow instructions rather than being allowed to generate new ways of doing things, the majority of the time. There have been some cases in which ideas put forward have come to fruition; however, this process has taken two to three years. Changes take extremely long to be implemented in the university environment and this affects the success of the growth of the digital business environment.

"What I can say, is that most people are living in that old structure and old thinking, in terms of their processes they are scared to change as they feel that their old processes worked better, it's very difficult for us newbies to make change, the process of just getting things changed is quite difficult, there is a lot of pushback. And to get anywhere one really has to make a noise or cause a disruption to be heard." Respondent2

WBS follows the governance policies as stipulated by Wits University. The university uses highly bureaucratic governance policies that have been effective and have worked historically; however, these policies seem to be inadequate for the digital era. Respondents' sentiments related to governance revealed a lack of transparency and low involvement in decision making, with strict rules for sticking to older legacy systems. There is always a long process to work around and thus individuals lose the motivation to ask questions in relation to the governance policies across different areas in the value chain.

"Governance and business models is not well suited to the current model is not well suited. It is too hierarchical, it is too rigid and it is aimed at education institutions of the 70s and 80s. So I would say and therefore there needs to be more agile, more rapid decision making and. It's basically things just take too long to make any changes, firstly and secondly, there are the there's no room for local variation on policies and practice." Respondent1

Fundamentally, the university is required to maintain strict governance across the different areas and this has been achieved extensively over the decades. However, these governance policies are proving to be inflexible; they are forming bottlenecks and causing hindrances in the processes. They do not align well with the new digital environment and this is affecting the university on a much larger scale than it is acknowledging. Policy changes take place every few years, but with modern technology, the rapidly changing digital business environment and new entrants to the market, these policies need to be adapted as quickly as the business environment is changing. The current Wits University policies have not been amended or adapted to the new teachings and learnings of the digital business environment. Inflexible policies have led to a loss of business opportunities, long lead times, postponements of projects and much lengthier processes across all business operations.

Moreover, governance is not to be treated lightly and thus it is encouraging to see that the governance is controlled primarily by the SET. This embraces positivity and builds trust as an institution that governance will follow ethical business practices. Governance from all walks of business is made up of many in-depth layers that need to be taken into careful consideration. However, for success in the digital business environment, governance should be:

"Agile, flexible, increased empowerment in teams and optimised decision making for approvals." Respondent8

Respondents stipulated that governance practices are important and agreed with the generic causality and theory behind these older governance tactics. However, they affirmed that with flexible leadership comes flexible governance, which is strongly required in the digital business environment.

5.3.4 *Technologies and Capabilities*

According to Deloitte (2014), technology enablers are technologies and methodologies combined to develop new ways of conducting work-related activities that lead to an increase in the productivity, performance and capabilities of a user. Furthermore, literature surrounding the higher education industry finds that disruption through new technologies is not directly impacting the sector. These technologies are not designed to support learning and teaching in higher education but have the ability to be adapted into the industry (Flavin, 2012). Customers are now being placed at the centre of the industry, with customer demands, interactions and overall service delivery leading organisations to relook at and develop new business models and revise their approaches when delivering customer needs and services (Goerzig & Bauernhansl, 2018). Literature suggests that a dynamic end-to-end Omni-channel business model can be created through new digital technologies, a strong digital vision and strategy (Bondar et al., 2017; Goerzig & Bauernhansl, 2018). Adopting new digital technologies coupled with agile orientation and implementation built on creating unique value and customer experiences provide organisations with a competitive advantage as it may become increasingly difficult to imitate a specific model (Deloitte, 2019; Sagenmüller, 2020). (Evans, 2015) suggests that to retain a competitive advantage, mastering digital services is critical.

According to the sentiments shared by the respondents, WBS, in line with Wits University's interrelated and connected efforts, is currently not geared towards new future-proofed, forward-looking business models. The university is diverse and unique

and thus encompasses multiple business models. However, these business models seem to be outdated and reflect models that previously led the university to success in a traditional business environment. With these business models being out of date and old, they do not adequately resonate with the ideals of a digital business environment. Current business practices that can enhance the business process are being overlooked owing to specific requirements. As one respondent shared:

"Can you believe that in 2020, we are still asking students to come in to do hand deliveries of their application forms, I mean how can we be asking people to do this, we living in a digital era and whilst this may be working digitally for the undergraduates up at main campus, here at WBS we do not have the same systems." Respondent15

Furthermore, without having newly reformed business models, the university, according to the respondents, is not critically evaluating best business practice and introducing new technologies that will enable the university overall. There may be sub-segments, schools or particular faculties that are trying to introduce new technologies and they are doing this as siloes. This means that other parts of the university could potentially benefit but are ultimately losing out. However, the university is making some efforts at digitisation and digitalisation of specific processes and systems across the whole university, such as the introduction of the new learning management system, the introduction of cloud-based systems, and project quantum (expanding Wi-Fi across the university and WBS). This insight was obtained from respondents in the ICT and BIS fields as well as from the policies and from information gathered in discussions within Wits University. These new technologies are being introduced to optimise and improve overall customer services.

Technological advancements, from the perspective of the respondents, take place not only through digital technologies and disruptive entrants into the market, but also through offering disruptive technologically inclined masters, diploma and short-course programmes in digital business. The digital business programme was introduced in 2018 and took off predominantly in 2019. The programme is the first of its kind across Africa, making it niche, disruptive and enabling. The content taught and generated has equipped a number of WBS students to become a niche target group of highly relevant digital officers, digital specialists in specific areas and digital administrators.

"We are amongst a very niche market of highly attractive subordinates out there, acquiring my masters in digital business has already opened new opportunities and had grown my knowledge and broaden my scope of expertise. I am no longer just an engineer I am now also a specialist in digital business, and there are not many in Africa that can say that. I am a want in many organisations now." Student Respondent

“I chose to do my masters in digital business, because it is the first of its kind in Africa. And with my position in the company driving digital changes, this was highly applicable, the banking industry is at the forefront of digitisation and digitalisation and we as employees need to jump on that ship as soon as possible. This has lead me to acquiring a promotion and stepping up.” Student Respondent

The Masters of Management programme in the field of digital business has placed WBS at the forefront of creating a disruptive and enabling technologically advanced group of individuals who will transform, digitise and disrupt their respective industries in time to come. This programme has created a competitive advantage for WBS and Wits University.

Mastering digital services is yet to be developed. Respondents shared their distress concerning their digital service experiences with WBS. Opinions shed light on how poorly specific customer services are being delivered. Across WBS, administration, in particular, seems to be a key challenging area for respondents. Digital services, from administration to online location and navigation of materials and tools to online learning experiences, have created frustrating experiences for the respondents, with little to no human intervention to provide service excellence. Simple digital services such as administrators responding to email queries are lacking or exceptionally slow: sometimes students are fortunate to receive a response, but sometimes they receive a response only after two to three weeks of enquiring. Students have had to call, email and eventually drive to the WBS offices to receive assistance with administration tasks and other queries.

Many respondents shared that they felt:

“The administrators need better training, need to become more digitally savvy and friendlier as well.” Student Respondent

Furthermore, when respondents were questioned about digital skills, knowledge and digital interaction, administration staff were seen as:

“unwilling to assist at times, or if they do, they take forever to get feedback to us, sometimes it takes two to three weeks before they acknowledge our emails.” Student Respondent

“No they are resistant to change and want to do things the old way, not digitised.” Student Respondent

“No – It does not seem as if all digital experiences are integrated and Wits is working in Silos, administration is different on different levels, yet all are despicable.” Student Respondent

“No some admin and academic staff really need better training to utilize collaboration tools such as Teams and Zoom.” Student Respondent

“No, I’ve experienced poor communication and lack of use of the digital platforms provided.” Student Respondent

“No, support mostly doesn't know what the problem is, and I need to explain it several times.” Student Respondent

Student respondents were very dissatisfied with the type of administration services they were faced with. In addition, the researcher’s, personal experiences with administration as a student and when reaching out as a researcher to set up interviews and interact with administration stakeholders and was unable to conduct a single interview with an administrator, which confirms this as a serious problem. Not one of the approximately seven administrative staff at WBS that were invited to take part in the study acknowledged or responded to their interview invitation. Even where some administrative staff did respond to the initial request, none of them kept to their engagement promises. It is evident that this lack of response frustrates students and is hindering customer services, which affects the overall status of the business school. Negative sentiments have been shared and WBS is facing critical issues regarding its administration services, amongst many other service issues. The lag in response time often frustrates students and staff and leads to inadequate customer services, which potentially may result in students dropping out and choosing to register with other institutions instead. The general sentiment shared is that WBS and the university as a whole need to invest in new improved digital technologies that set them as equivalents to their competitors in the online digital market. This further implies and was suggested by respondents that WBS does not have a defined culture that is adaptable, flexible or relevant.

The university has introduced numerous online courses through Wits Digital Campus, but many other groups across the university are adapting their courses to blended learning and online formats as well. The Digital Business programme itself now also has a series of online short courses driven through Wits Digital Campus. Wits Digital Campus is climbing the ladder towards digitalisation success and is gradually growing. The idea of understanding the customer from the beginning is critical and this data needs to be accessible to all parties of the University for cross-marketing and further development to inculcate targeted marketing campaigns and build on business model differentiation.

5.4 Does WBS have a digital transformation strategy to deliver on its digital promises?

Strategy is an important consideration when developing and transforming any organisation. Research Question 3 aimed to discover whether WBS has a digital transformation strategy that delivers on the promises made to its customers. This research question was answered through the use of multiple sources of data generated primarily through in-depth interviews with stakeholders and students across WBS and Wits University, primary observations and the analysis of Wits University policies. The study also emphasised the interconnected relationship between WBS and Wits University.

Literature suggests that, within the higher education industry, digital transformation requires a cultural, technological and workforce shift that encompasses new approaches to increase student success, through improved and innovative learning methods and increased research capabilities (Grajek, 2019). Dynamic changes in the new generations of customers have led to new needs and requirements, in this way raising student expectations for services such as easy, seamless, fast tracking, highly customised and personalised real-time experiences (Grajek, 2019). The alignment of these changes with transformation is realised through leadership (Volarić, 2018). Literature further indicates that strong transformational leadership is required to create the necessary paradigm shift, with the leader leading from the front rather than from the top (Adeleye, 2015). Leadership is critical and becomes essential when developing the vision and strategic direction of an organisation (Mogale, 2019).

For the development of a digital strategy to evolve, it should derive from the business strategy and conform to the business vision of the organisation (Sanchez & Zuntini, 2018), which could be exploratory (Mogale, 2019). Leadership holds the responsibility for aligning the digital strategy to the organisational strategy and vision (Volarić, 2018), to be backed up with digital and traditional investments (Mogale, 2019). The framework reviewed in Chapter 2 outlines the high-level theme of strategy and vision, which includes digital strategy, digital focus and investments (Evans, 2017). Furthermore, digital investments are often experimental and derived from the decision to create a digital forefront in a digital business environment (Volarić, 2018). Returns on investments will not always be realised immediately (Volarić, 2018).

The data from the respondents indicates that neither WBS nor Wits University has a clearly defined digital strategy. Respondents indicated that they have received no

communication concerning a digital vision or planned forefront in digitalisation from either WBS or Wits University. Respondents pointed to the alignment between the WBS digital strategy and Wits University's group digital strategy, with Wits University lacking a defined, clear digital strategy. This means that no digital strategy reaches small school segments across the university. Respondents highlighted that they could comment on Wits University in this context owing to its interconnected relationship with WBS, in which WBS follows and ties in to the higher group-level strategy, as indicated below by Respondent 2.

"Our WBS vision often ties in with the overall university vision and to date there is no mention of either of us following a digital forefront, we are sticking to the research vision, I don't think we have any digital vision clearly communicated, or at least I have not come across it, but I must say there is digital things and digitalisation and automation taking place, so essentially we are adapting our business to the digital environment through what we are doing and teaching." Respondent2

In the same light, while there may not be a clearly articulated digital vision and strategy, it was acknowledged by respondents that WBS, in conjunction with Wits University, is working on pockets of digital initiatives, which is ultimately increasing and driving digitalisation, as suggested by Respondents 1 and 5.

"I don't think we have a digital strategy, but we definitely have pockets of strategy. We have a few operational interventions, but it is not part of a bigger digital transformation strategy of the school or the University for that matter." Respondent1

"And the answer must be is no there isn't a digital strategy. Rather it's a partial strategy. And I think it's more tactical in nature right now based upon having to deal with a response rather than with being proactive to digital changes." Respondent5

Overall, the lack of an encompassing digital vision and digital strategy is leading both WBS and Wits University to make ad hoc, on-the-go decisions to address current challenges by making use of an emergent business strategy as opposed to having or creating a deliberate digital business strategy. Introducing new technologies to the business is becoming increasingly costly and many of these typical new technologies are being duplicated across the university within different schools, even though they can be recognised as a fundamental need across the entire university. Essentially, the lack of a digital transformational strategy has meant that digital investment decisions are currently being made and implemented in the context of small digital initiatives or pockets of investments to eliminate specific challenges and not as a realisation of a strategic goal.

Furthermore, respondents shared the view that digital strategies concern not only how the university plans to adapt and adopt new digital technologies, processes and operations in its community but also how digitalisation is influencing and impacting each field of study within the university and how those fields and industries are adapting to avoid becoming obsolete. This is indicated by Respondent 10.

"The strategy is not merely around the business operations and services, it's not the business school or people outside to whom they will be teaching, it's how do we create digital opportunities for everybody to be able to participate in a future of space, no matter what industry or field?" Respondent10

This further aligns the content and context of study material, which are inevitably changing, with the need of the university to update the learning materials being studied to be recognised as a leading university. WBS and Wits University are meant to be creating pioneers in every field; digitalisation is influencing everyone, and the materials, courses and programmes need to consider the influence of digitalisation in these fields. Furthermore, in conjunction with the academic faculties, business services and support systems are also important. Wits University does not have a centralised digital transformation team, which is crucial for the journey. WBS has succeeded, through ambidexterity across different divisions, to improve on its fundamental services, which prompted questions by respondents as to why Wits University does not have a digital team (excluding ICT teams) to drive the changes needed to deliver on general service-related promises to students. Having a digital vision and strategy coupled with a strong digital team can lead WBS and Wits University to becoming future-proofed and pioneers in the higher education industry.

This question further highlighted the mistrust by leadership of steering the university towards the forefront of a digital journey that has resulted in schools such as WBS pursuing their personal interests and therefore lacking highly informed business decisions. The key learning was how critical leadership is for the digital transformation journey. It is evident that with a lack of leadership to drive the required digitalised strategy and put in place specific key digital measures and KPIs, there is a lack of customer service delivery. In the same breadth, WBS respondents alluded to top services not being delivered owing to a lack of particular motivation and drive from leadership. The lack of motivation is creating a ripple effect across different areas of the value chain and often provides a context for the culture that is being followed at WBS.

The study found that for WBS to be future-proofed, Wits University will need to enter the unchartered territories of revisiting business models and business processes and of implementing change-management practices in order to underpin a winning strategy to

improve customer centricity. It would be good business practice for WBS to aid in driving and leading a customer journey management system, mapping out key needs, requirements and other important facets that drive customer-centric success, through the centralised Wits University service and support teams. This can potentially aid the university to eliminate other customer-related issues across different revenue streams within the university.

Student respondents shared strong sentiments concerning WBS not clearly understanding their fundamental needs and not being able to assist with generic administration issues, payment discrepancies and basic registration, class times and other administrative communications within real-time, or within a response time of 24 hours. Many respondents made statements like the following:

"We sometimes only get a response after 3 or 4 weeks, I mean simple requests and changes cannot take that long to be communicated to students, we are professionals, we have jobs and studying and we manage our plates." Student Respondent

Evidently, this is a reality across WBS and is critically hindering the growth of the institution. Customer services are a key aspect of the success of digital transformation. Whilst WBS is trying to digitise and improve its services through new technologies, without a clear direction it is heading for increased costs and liabilities, instead of producing efficient and effective services.

5.5 Are all the relevant factors in place for a digital environment to grow and thrive?

The aim of Research Question 4 was to find out whether the relevant factors are in place for a digital environment to grow and thrive for long-term sustainability. This was uncovered through the analysis of student survey responses, in-depth interviews and Wits University policies. The identified factors were aligned to the high-level themes of the Digital Transformation Framework as set out in Chapter 2. The themes were: Strategy and Vision, People and Culture, Processes and Governance, and Technologies and Capabilities. Holistically, the factors highlighted were derived from respondents' opinions and involvement in digital projects and digital initiatives across WBS and Wits University.

5.5.1 *Strategy and Vision*

According to literature reviewed, the success and growth of the digital environment are developed through understanding that digital transformation is a continuous and ongoing process (Croft, 2018) that is coupled with continuous innovation in striving for competitive advantage and customised solutions (Deloitte, 2018). Customer centricity is identified as the focal area of the digital transformation journey and key factors are determined through the understanding of customers' needs and personal customisation of experiences (Lund, 2017).

Many respondents identified or were aware of specific digital initiatives and projects currently underway, recently introduced or even recently completed. Despite their lack of a forward-looking digital vision and strategy, WBS and Wits University have not been completely dormant; there have been significant introductions and adaptations of new disruptive technologies that are being installed, implemented and used across the university environment.

"We wrote online exams, yes it may not have been one hundred percent at first, but we slowly got it corrected and worked perfectly thereafter, it was so much better than traditional methods of examinations." Student Response

"We not there yet, there is no digital strategy that we know of, however there is an increasing need and implementable changes of digital coming into WBS. Also doesn't this Digital Business Masters count for something, like the university is driving digital not only from new technologies but also in the courses and programmes they are offering." Respondent8

Without having had a digital roadmap for a successful digital transformation journey communicated to them, many respondents felt that they were unaware of what was the reality of digitisation and digitalisation of processes and automation of services and were unfamiliar with the requirements of the digital environment. For this reason, they had no knowledge of whether WBS or Wits University had the appropriate leadership, skills, technologies, processes, business models and other relevant components in place for the digital business environment to grow.

From the data retrieved in the study, it is clear that WBS and Wits University are not entirely digitally future-proofed for a thriving digital business environment; however, they are consciously taking steps towards the digital development of the institution. Respondents were hopeful that with the appointment of new leaders across both Wits University and WBS, the shift towards becoming more digitally focused will increase and, particularly, become more relevant to the current generic business strategies.

Respondents expressed their aspiration towards having leadership that would embark on newly formed ways of doing things, adjust and renew governance policies, and fundamentally change the scope and landscape to become more digitised, digitalised and automated to better adapt to the standards and requirements of the customer markets across all the revenue streams generated by the university.

Furthermore, following on from the importance of developing a customer-centric strategy as specified in the literature reviewed (Croft, 2018), it should be noted that the university needs to identify the extent not only of the value it wishes to create for the customer but also of the control, adoption, adaptation and focus required for a successful digital customer-centric strategy. In line with this, the study found that respondents alluded to creating value through a hybrid of digital strategies, not only being driven towards customer centricity but also encompassing digitised solution creation, digitised education and research pioneers and digitalised customer services. Increasing the magnitude of digitalisation, responses pointed to creating, disrupting, and delivering digitised programmes, digital solutions and digital content for rapid adoption, adaptation and assimilation across different fields, whilst achieving and rapidly improving digitised customer services.

The data analysed provides a clear indication of digital investments being made in multiple pockets, although these investments are neither well aligned nor specifically prioritised to any digital transformation strategy or to further a budget towards digital investments. This was further noted in Document 3, as indicated in Figure 20 below.

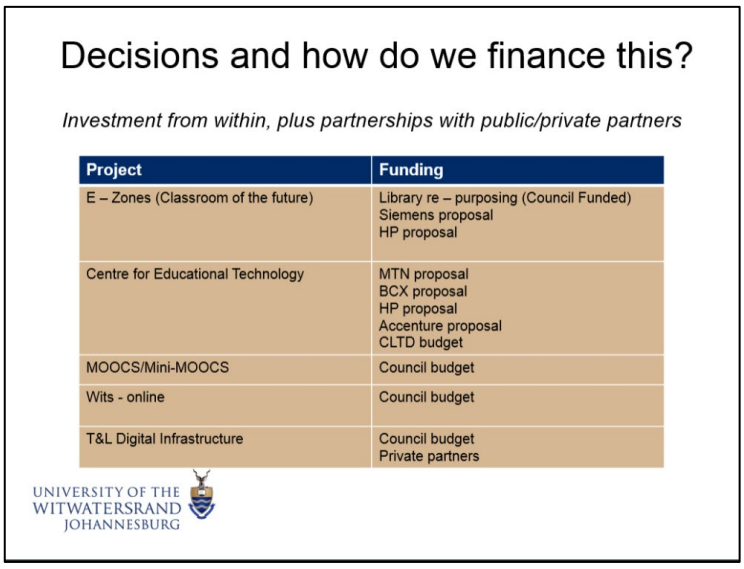


Figure 20: Digital Investment Decisions (Document 3)

The prioritisation of digital investments needs to be clearly thought through before being approved. An example of a better use of investments was provided by a respondent.

"Okay, so we at WBS have a smart classroom and this investment was great, +- 500 mil easily. All I'm saying is, I think that investment could have fundamentally gone into purchasing a new system or platform that creates better flexibility, ease of convenience and more for all support staff and students. I mean get something that makes administration easier, we still struggling with manual processes daily when there are systems out there that can help eliminate this issue? Are we really prioritising our investments correctly?" Respondent2

Interestingly, the investment-related discussions led to comments that emphasised the importance of investing in change management, cultural and leadership changes, and non-technical skills, which pointed to touchpoints of human interaction, friendlier staff and employees that are ultimately willing to assist and go beyond the call of duty. Employees argued that they need incentives to feel a part of this dynamic change and to assist them with the fundamental mind-set changes required.

"I think staff need to be incentivised in order to bring about the change, either through competitions, increasing salaries, or providing a bonus or ultimately even just through recognition programmes- employee of the month, type of things and also recognising those who are embarking on new things, to create that new energy of excitement around wow, look at my colleague and what she is up to." Respondent3

5.5.2 *People and Culture*

According to Adeleye (2015), the onset and realisation of change and transformation require strong, directional and transformative leadership. Interestingly, studies show that leaders who reflect transformational characteristics have a deep interest in capitalising on developing digital opportunities and capabilities and in increasing their overall digital maturity (Davison & Ou, 2017). Digital capabilities and skills are highlighted by transformational leaders, to improve and enable individuals to cope with market changes on an ongoing basis (Milano, 2019). Furthermore, literature suggests that skillsets are poised to create gaps between traditional skills and digital skills; these digital skills are inevitably going to be constant and growing at a rapid pace owing to the ever-changing nature of the digital environment and introduction of disruptive technologies (Milano, 2019). Furthermore, studies have found that employee readiness, coupled with digital skills and digital savviness in delivering customer services and experiences, is strongly emphasised in adopting a digitally transformative culture (Deloitte, 2019; Hunsberger, 2017).

On evidence collated from respondents and in conjunction with the discussions presented in Sections 5.2, 5.3 and 5.4 above, leadership change has been an ongoing challenge at WBS. However, the appointment of the new head of school has created hope in the WBS community, and respondents feel that he will be the transformative leader they have been hoping for, as indicated by Respondent 8.

"Our leadership has been a nightmare over the last few years, its constantly changing and we have no idea how to move forward because of this. However, many of us are now feeling much more at ease knowing that the new Head of school, Mr Radebe who is going to be stepping in as of 2021 will hopefully be the leader driving this digital changes that we need. He seems to be both academically involved and a business master." Respondent8

It can be argued that leadership needs to empower the creation of a digital forefront and clearly communicate with its teams to be able to address the people-management functionality of the workforce across WBS and Wits University, for employees to strive to become more technologically advanced. Leadership's encouragement will drive a digitally savvy culture and ensure that the correct digital skills and capabilities are attained and adapted in day-to-day business operations and activities in order to create an overall acceptable level of customer service deliverance across the university, as suggested by Respondent 11.

"Fundamentally, we may be in a relatively good position, I just think that now the new leaders need to push this digital drive for all schools so that we can represent one equal forefront." Respondent11

Data collected from this research study suggests that almost the majority of employees within WBS have different levels of digital capabilities. It can be argued that some individuals are self-skilled and have acquired new skills through personal aspirations and the willingness to enhance their skills overall. These individuals are recognised as highly adequate and adaptable. In contrast, other individuals do not have that innate desire to upskill themselves and prefer to stay in their comfort zones, continuing to do things the way in which they have been doing them for decades.

The Human Resources Development Unit (HRDU, Wits) at Wits University continuously strives to encourage employees to upskill and develop themselves. The majority of respondents showed some form of digital literacy in that they were able to participate in online interviews and quickly adapt to this mode of data collection. Furthermore, during the Covid-19 pandemic, the HRDU presented a number of online, self-development programmes and training courses for employees to improve their digital skills and aid their students by delivering courses, teachings and trainings whilst under a global lockdown.

"The HRDU, has aided the staff during this lockdown period quite significantly, we had to adapt our teaching models and behaviour in a short space of time, many of us were comfortable with traditional teaching methods and not online, therefore this was super essential for us. We had the support and thus I believe if we continue on this forefront, we can definitely improve and deliver on many other digital promises." Respondent12

Marketing and customer engagement, among many others, were highlighted by respondents as high-priority touchpoints.

"We definitely need to enhance our digital marketing, which ties in to our student engagement and market engagement, also I think that we need to get better at the use of big data, predicative analytics and understand how these work and impact on the overall student journeys." Respondent1

Digital skills for specific technologies were emphasised in relation to artificial intelligence, machine learning algorithms, coding, software development and cloud computing. A thorough understanding of and training in new technologies within different scopes was also advocated. Respondents pointed to the need for specialised training, with further support to enhance their overall service delivery. The adoption of new technologies had initially taken off very slowly and the data showed that many were reluctant to adapt to digital changes. However, the Covid-19 pandemic and the associated need to move into a digital business environment suddenly have created a mind-set shift within the university community towards becoming more digitally savvy, finding new specialised digital skills for new ways of doing things and facilitating the necessary changes for a digitally savvy team. While WBS and Wits University might not be at the forefront of a digitally friendly culture, definitive changes have occurred that have pushed the teams into becoming more digitally advanced that they were.

Considerable change management is required to inculcate a digital culture that embraces a digital transformation journey. Many of the respondents indicated that they do not feel they have acquired the necessary knowledge, skills and capabilities required for a digital business environment. This could be a factor that is hindering the progress of digital service mastery in the university. The answer to whether the necessary digital skills are in place for a digital environment to grow would be a definite no, but WBS and Wits University are definitely gearing up their workforce and are equipping their employees with the digital capabilities they require. As indicated in the discussion in Section 5.3.2, skills and capabilities across the institution differ significantly and with the innate nature and culture of sticking to how things were done many years ago, many individuals within the workforce are reluctant to upskill or even just change the dynamics of how they currently work. However, with the changing landscape created by the Covid-

19 pandemic and the quick adaptations, WBS is en route to enhancing and developing digital skills further and faster than before.

5.5.3 *Processes and Governance*

Digital innovation and digital technologies are disrupting the world and are contributing to transformation and improved economies of scale (Ciriello et al., 2018). Literature highlights digital innovation as digital elements that combine to create value and solutions through an integrated technological architecture (Huang et al., 2017). Furthermore, with any new changes and innovation, governance is a critical consideration (Mogale, 2019). Literature suggests that governance is a crucial factor for success in digital transformation (Capgemini, 2012). Moreover, looking at digital innovation in isolation decentralises an organisation's governance (Tripathi et al., 2018).

The respondents' comments present a positive outlook regarding digital innovation at WBS. They display enthusiasm and are keenly open to adopting new innovation technologies within their respective departments. Respondents affirmed that:

"Innovation is great, there will be increased opportunities through innovation. We can achieve this and have been trying to achieve innovation through new programmes, new content and further developments throughout the university and WBS." Respondent1

"Innovating processes will lead to increased staff mobility, which will essentially improve our overall services as an institution." Respondent5

Whilst this may affirm the adoption of new innovation technologies for WBS services and business activities, an interesting insight gained from one respondent was that to some extent the school and the university are not interconnected when it comes to purchasing these technologies. Wits University and WBS are not effectively growing together, as new digital technologies are being purchased as ad hoc, just-in-time, challenge plug-ins. Without an institutional digital transformation strategy, many schools, faculties and sub-segments within the university are purchasing new systems and software in isolation. This has proven to be a costly and inundated process. Most of the new software bought cannot be integrated with the older software, as this needs to be updated or renewed. Whilst costs are increasing, these systems together are not solving the issues or challenges that the university is faced with.

The idea of ad hoc applications of digital innovations led respondents to share their perceptions of internal competition. Competition between departments exists where one

particular school, division or department tries to gain recognition over others by adopting particular innovations:

"It's like we all want this recognition within the university to be better, so in our schools also we want our specific team to outshine the others, but we are not looking at the bigger picture at how our shared knowledge, shared resources and collaboration between teams can actually aid us to becoming a truly innovative institution." Respondent2

Respondents also lamented the extensive timelines needed to get certain tasks completed as governance policies are not aligned with the digital business era. One of the most frustrating time wastages that upset most of the respondents concerned inefficiencies of procurements necessary to achieve tasks at hand, be it supplier on boarding, procuring of items or approving quotations for finally ensuring that suppliers are paid timeously. A respondent corroborated this, saying:

"It can take up to 6 months before we have acknowledgment that supplier is up, and even after that things are not 100% done correctly, something is missing or we need further details etc, by then, we have lost numerous opportunities and the supplier may no longer be relevant to our requirements." Anonymous15

The inconsistent communications from SET and heads of school and department heads continues to unravel and lead to these types of decisions being made. The lack of an institutional digital transformation strategy further suggests the need for an integrated portal for the students and staff of Wits University.

These insights can be confirmed from an observational perspective. While there is no definitive digital innovation strategy, Wits University coupled with WBS and other relevant schools across the university have grouped up and have identified key areas for innovation, which have led to significant projects such as a fully integrated CRM system, new short course systems (SCS), a new human resource software, the newly adapted learning management system (LMS) and many other projects that are still in incubation and are yet to be announced in 2021. The newly innovative "KuduBot", an online Chatbot on the website, is evidence of new ideas from all areas, developed through the infusion of market research, student challenges, new technologies, student voices and the ideologies of increasing flexibility, real-time responses, visibility and viability. Furthermore, governance is critical for these new developments and plays an important role in ensuring that all the necessary factors are in place for driving a digital business environment.

5.5.4 *Technology and Capabilities*

According to Schmidthuber et al. (2020), disruptive technologies are puzzling and are yet to relinquish their full capabilities and advantages, although the majority of them allow for customised developments to extend their benefits. Literature highlights that organisations will become either leaders or followers of digital technologies, depending on their visions, strategies and investments to empower an agile workforce (Milano, 2019; Volarić, 2018; Westerman & Bonnet, 2015). In light of this, additional literature reviewed that relates to business models highlights that customer demands and engagements are leading organisations to relook at new business methodologies and new approaches to deliver customer services (Goerzig & Bauernhansl, 2018).

Respondents highlighted positive perceptions and acknowledged that WBS is forward looking at present and is digitally advancing in different segments across the school. While a specific strategy may be lacking, new digital technologies are being introduced into the school and the university, based on the pockets of digital initiatives that are running simultaneously across the university. Digital adaptability and focus have increased owing to the global Covid-19 pandemic and these have pushed WBS to adopt new digital technologies, systems and platforms for convenience and quick assimilation to counter the constraints placed on the school by adapting and delivering courses and programmes even in the face of a deadly pandemic. The pandemic has led the university and school to the realisation of the increased need to identify and implement more relevant technologies in the institution; 2020 really pushed the university out of its norm and comfort zone into the digital environment and now new options are being evaluated, as mentioned by respondents.

"We have realised the short course system does not align itself to any other platforms and has become a real challenge, we have evaluated new offers in the past months and are currently going through the process of purchasing a new one. Also we have a need to update our learning management system, we will be going onto CANVA, from early 2021. Sakai was just not working for our students anymore. The university is taking a stand and making the necessary changes required as soon as it can." Respondent6

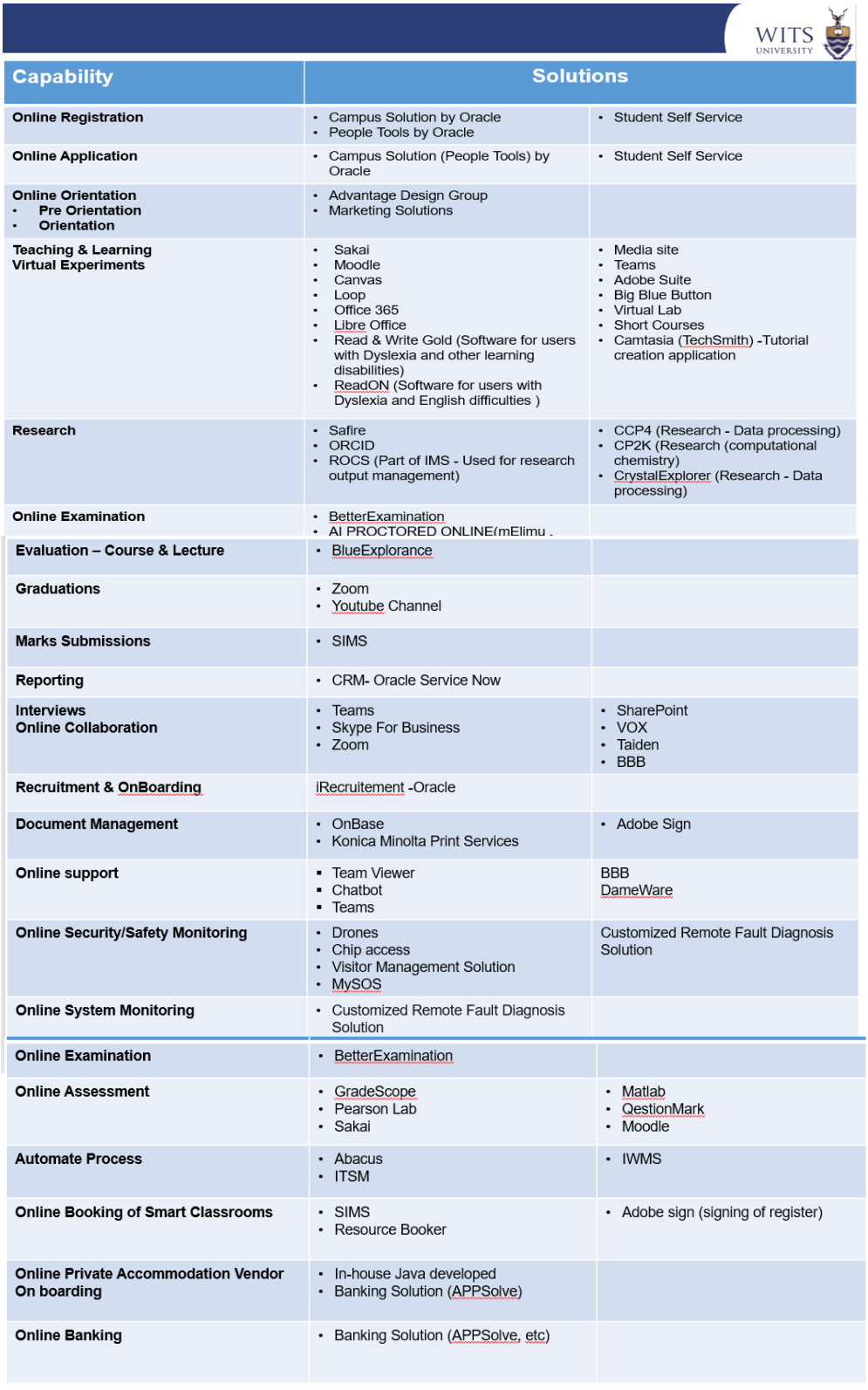
"To some extent we are seeing new technology being introduced, but these things don't always align to our specific roles, rather to the very niche aspect or challenge that was faced perhaps, like this introduction of the smart classroom? Or here in WBS we now going to have a system platform for students to book syndicate rooms, so no more emails, but isn't there some system that links multiple things together instead of having separate platforms for different tasks?" Respondent2

This push into the digital online teaching business environment has automatically increased the digital maturity levels of WBS and, with the implementation of many other

new technologies in the institution, WBS is strategically climbing the ladder to success in digital transformation. In addition to the adoption of new technologies, WBS respondents further highlighted how the BCX business programme in digital business is pushing WBS to the forefront of becoming a pioneer in the academic sense as well.

"This programme is getting us at forefront of research into digital business and how things are needed to operate, we need to be proud of the efforts taken to get us here. I believe this is just the beginning, Wits has many other projects similarly within other faculties and fields that are in progress. I am only aware of this as I am part of the digital business programme. We also disrupting the market in terms of what we teaching, or how we teaching it to the extent that most teachings are coming from real-time experiences, looking at the latest technologies and what's happening in the business world as opposed to looking at theories and teaching theories. Things are being taught based on day to day business happenings across the globe, which is relevant content." Respondent14

Furthermore, the university has identified a number of digital online capabilities that are required to cater for the magnitude of different business operations and functions that the university has to administer and deliver upon. Among the capabilities included are cloud, cloud computing, machine learning and a number of other identified disruptive technological enablers that will enhance and develop the university's data, information, CRM and business operations and many other activities. The numerous capabilities and solutions identified to aid the digital capability requirements can be found in Document 8. Online capabilities from Document 8, as shown in Figure 21 below, highlight other crucial technologies that are used in supporting digital products and aid in evolving the students' journeys across the university. Wits University and WBS are yet to create a digitally operating business model that indicates the way forward.



Capability	Solutions	
Online Registration	• Campus Solution by Oracle • People Tools by Oracle	• Student Self Service
Online Application	• Campus Solution (People Tools) by Oracle	• Student Self Service
Online Orientation • **Pre Orientation** • **Orientation**	• Advantage Design Group • Marketing Solutions	
Teaching & Learning **Virtual Experiments**	• Sakai • Moodle • Canvas • Loop • Office 365 • Libre Office • Read & Write Gold (Software for users with Dyslexia and other learning disabilities) • ReadON (Software for users with Dyslexia and English difficulties)	• Media site • Teams • Adobe Suite • Big Blue Button • Virtual Lab • Short Courses • Camtasia (TechSmith) -Tutorial creation application
Research	• Safire • ORCID • ROCS (Part of IMS - Used for research output management)	• CCP4 (Research - Data processing) • CP2K (Research (computational chemistry) • CrystalExplorer (Research - Data processing)
Online Examination	• BetterExamination • AI PROCTORED ONLINE(mElimu .	
Evaluation – Course & Lecture	• BlueExplorance	
Graduations	• Zoom • Youtube Channel	
Marks Submissions	• SIMS	
Reporting	• CRM- Oracle Service Now	
Interviews **Online Collaboration**	• Teams • Skype For Business • Zoom	• SharePoint • VOX • Taiden • BBB
Recruitment & OnBoarding	iRecruitement -Oracle	
Document Management	• OnBase • Konica Minolta Print Services	• Adobe Sign
Online support	▪ Team Viewer ▪ Chatbot ▪ Teams	BBB DameWare
Online Security/Safety Monitoring	• Drones • Chip access • Visitor Management Solution • MySOS	Customized Remote Fault Diagnosis Solution
Online System Monitoring	• Customized Remote Fault Diagnosis Solution	
Online Examination	• BetterExamination	
Online Assessment	• GradeScope • Pearson Lab • Sakai	• Matlab • QestionMark • Moodle
Automate Process	• Abacus • ITSM	• IWMS
Online Booking of Smart Classrooms	• SIMS • Resource Booker	• Adobe sign (signing of register)
Online Private Accommodation Vendor On boarding	• In-house Java developed • Banking Solution (APPSolve)	
Online Banking	• Banking Solution (APPSolve, etc)	

Figure 21: Online Capabilities Required at Wits University (Document 8)

5.6 What are key factors hindering the digital transformation process?

Research Question 5 was posed to identify the key factors that are hindering the growth and success of digital transformation at WBS. These factors were collated using the insights and perceptions obtained from respondents (students and staff) through in-depth interviews, the survey questionnaires and policies to obtain a clear understanding of what the Wits University community considers as factors that need to be raised immediately. These insights further point to the interconnected relationship between WBS and Wits University.

According to Rogers (2016), digital transformation can be recognised as a continuous development journey, with constant learning, continuously pushing to find the next source of customer value and improving on customer services through the use of enormous amounts of valuable data to aid in making more informed and better decisions. After in-depth discussions with respondents and insights obtained from the survey, observations and policy evaluations, six key categories were identified (leadership, governance, strategy and vision, culture, business models and platforms architecture, and technological resources and capabilities) as the main factors hindering the digital transformation process across WBS and Wits University. The school and university reflected an interconnectedness and therefore were found to impact one another directly and indirectly.

5.6.1 *Leadership*

According to literature, the fundamental changes and transformations required for digitalisation to be realised necessitate bold, strong, dedicated and digitally savvy leaders (Ganguly, 2015). The overall analysis, based on respondents' sentiments, primary observations and communications shared among WBS senior teams and from senior stakeholders at Wits University, indicates that the frequency of changes in leadership has been very high. This has led WBS into developing new strategies too frequently without having them seen through to the end, essentially because a new leader steps in after a year or two, as summed up by Respondent 2.

"We have had leaders coming and going, almost every two years we have a new leader head, new strategy, new process to follow and basically we start from scratch and never seeing anything through to the end. The problem in this is that just as staff are getting into the process of the new methods etc, a new person in

beginning to step in, most critically we are getting stand-ins who do not critically understand the type of business that we have." Respondent2

This has led to changes being made too often, with these leaders often not the correct fit or ideal type of leaders for WBS. These leaders are either too business inclined and not familiar with the academic requirements, specifications and specialities that align to the university standards or they are too academically inclined and do not accord business and market-related opinions, models and requirements a high level of importance, critically showing more theoretical expertise than business-related expertise.

Leadership was recognised as the key factor hindering the progress of WBS, based on respondents' opinions and perceptions of leadership. Overall, the respondents believed that WBS leaders may have had new ideas and opportunities to digitise however, they are constrained by Wits University policies and leaders who largely had a research-driven mind-set and have not looked into integrating digital, digitalisation and digital transformation with a research perspective to produce high-quality research. Respondents have recognised the interrelation between the parent University and WBS and decisions being influenced by the parent university, even if there may have been new pioneering ideas from the numerous leaders of WBS, if not bound by the university policies that are driven and led by non-digital leaders. The embodiment of strong, bold, brave and digitally savvy leaders who fundamentally understand the university's business model and organisational structure coupled with the above-mentioned components of business and leadership attributes can create the paradigm shift needed to empower a digital business environment.

According to data collected from the respondents, leadership is the critical element needed to drive digital transformational changes and build a sustainable digital business environment. Generally, the respondents support and call for leadership that is agile, bold, flexible, digitally savvy and both business and academically orientated, which conforms clearly to the transformational leader as identified in the literature reviewed above. The respondents outlined the unstable nature of the current leadership and frequent changes in heads of school as a critical problem area that has hindered the success of potential agile and transformational digital forefronts. With the call to be future-proofed and 'get on to the digitalisation train', the newly appointed vice chancellor (Professor Zeblon Vilakazi) and the new head of school (Mr Maurice Radebe) have provided hope, anticipation and excitement to the university and its community. Respondents indicated that both individuals are said to be business orientated, with academic profiles that allow them to understand the core values of academia. Both are

driven towards the fourth industrial revolution and look to embrace and make the necessary changes for this to happen. It is clear that these leaders recognise the need to be brave and courageous in order to enter into unchartered territories to equip, motivate and generate the paradigm shift that is needed to create a digital business environment successfully.

5.6.2 *Governance*

The literature suggests that governance of digital innovation and digitalisation if conducted in isolation, in specific areas or divisions of the value chain, decentralises the governance across the organisation (Tripathi et al., 2018). The sentiments shared by respondents revealed that current governance and policies are outdated and speak specifically to a particular segment of the value chain; they are not holistically integrated and therefore they do not align with the digital business environment.

"Governance and business models is not well suited to the current model is not well suited. It is too hierarchical, it is too rigid and it is aimed at education institutions of the 70s and 80s. So I would say and therefore there needs to be more agile, more rapid decision making and. It's basically things just take too long to make any changes, firstly and secondly, there are the there's no room for local variation on policies and practice." Respondent1

Governance and policies are recognised in isolation and these laws and rules are inflexible in nature and do not cater for real-time, quick and yet effective decisions to be made. They increase the university timelines and result in many newly formed digital business opportunities being lost. This affects the overall business and revenue of the university. Respondents also indicated that the WBS target audience is fairly different from that of the university. WBS is a third revenue-generating system for Wits University. The school often deals directly with other key market players (big corporate clients), who require diligent governance that is also flexible, relatable and adaptable to today's rapidly changing business environments.

Furthermore, according to Capgemini (2012), a success factor in digital transformation is governance that inhibits integrated components owing to the increased risks associated with new disruptive technological enablers. Governance should be looked at as a consolidated value chain stack that recognises the influence and impact that the components have on one another. Wits University's outdated methods and governance policies are isolated and therefore impact customer services, marketing, finance and many other streams within the business environment. A respondent indicated the need for governance to be:

"Agile, flexible, increased empowerment in teams and optimised decision making for approvals." Respondent8

Making governance more flexible and adaptable to the digital environment can potentially boost the overall business model, increase revenue and offer long-term sustainability in the digital business landscape.

5.6.3 *Strategy and Vision*

Literature suggests that the starting point of a successful digital transformation journey is to identify and create a digital business vision and strategy (Sanchez & Zuntini, 2018). This vision and strategy can be generated from the existing business strategy but should include a digital variance. Respondents were not aware of any new digital vision or strategy that encompasses a forward-looking adaptation to digitalisation. Respondents noted that some digital initiatives are taking place to introduce new digital technologies, such as increasing automation, gearing up the university with faster internet and Wi-Fi, coupled with introducing new learning management systems and servicing tools. However, these are being implemented through ad hoc or miscellaneous methods, upon recognition of a particular need that arises, as indicated by numerous respondents.

"I don't think we have a digital strategy, but we definitely have pockets of strategy. We have a few operational interventions, but it is not part of a bigger digital transformation strategy of the school or the University for that matter." Respondent1

"We are investing in digital things, I can see that, but without a clear vision of where we are headed essentially, these investments are going to be costly and expensive and we not sure what type of returns they are going to yield, especially if they may not be relevant in the near future." Respondent14

Often these needs have come forward from the customers or students in the WBS area specifically, as the target audience comprises highly advanced professionals in good positions across the market and in particular market-leading industries such as banking, commercial and technologically related spaces. These individuals have high expectations for a world-renowned university and customer service to these individuals has played a particularly important role. This customer segment does not take lightly having to follow old, outdated processes and dealing with long timelines and lengthy feedback, with no specific answer to resolve their issues, especially in relation to administration. They seek quick, fast, smart and adaptable individuals to work with, along with smart systems that are integrated to give them the best experience overall.

"Ultimately, the university needs to dictate the overall group strategy, which all schools need to follow or customise according to their specialities but still form in line with the overall University goals, KPIs and business operations, we should stop doing things that are significantly different from one another." Respondent2

Respondents shared the challenges based on feedback from the students of WBS with senior management; however, they felt that SET members are not willing to listen and this is fundamentally big challenge. The insight gained here can improve the entire university and should not be taken lightly, especially when the university should be at the frontiers of academic teaching and research. WBS, SET and other specific schools and leaders should brainstorm ideas together to develop a digital vision and strategy to lead them to success.

5.6.4 *Culture*

Literature states that culture is undoubtedly a major accelerator in a successful digital transformation journey (Kiron et al., 2015; Mogale, 2019). The current organisational culture as perceived by the respondents is not empowered to drive the necessary digital changes required for a digital journey. Respondents felt that there is no clear communication from senior management, which is often associated with not having clear communications from SET at Wits University owing to the interconnectedness of the group and school. Furthermore, the overall culture is driven by silos aimed at increasing the benefits for specific groups. These themes strongly relate to findings presented in Chapter 4, but relate specifically to:

"very conservative and traditionalist culture, it flows directly from the university culture, it is also very hierarchical and follows a top-down approach, the culture does not in any way reflect a dynamic transformative culture that is required in this digital age.. Respondent1

"…major challenge is that staff do not show any initiative, people are not open minded towards digitalisation and getting on board with the changing way in which people need to work, people across WBS are highly resistant to change and are not conforming to new ways of doing things." Respondent7

There is a lack of collaboration and cross-team functionality. Those who have learnt new forms, new methods and new systems to enhance overall productivity and optimise customer service delivery are not being taught or channelled further than their specific silo or group. Overall the university can equip better cross-functional teams to expand the digitalisation of processes.

Respondents felt the need for better communication, motivation and incentive programmes to aid them in inculcating a culture that will make them excited and drive them to increase their willingness to do more, be more and ultimately become more adaptable in this digitised environment. The overlap and interconnectedness of digital skills and digital literacy for understanding systems should be vital components of the digitally driven culture required for the university. These components in correlation with the literature mentioned above will empower the university and aid in removing the barriers that disempower it, such as resistance to change and new organisational restructure challenges. Leadership here again provides the clarity needed and is the cornerstone of this newly formed paradigm shift.

5.6.5 *Business Models and Platforms*

According to literature, disruptive technologies are encouraging organisations to relook at and develop new approaches to business models that deliver customer services and meet customer needs (Goerzig & Bauernhansl, 2018). As Wits University and WBS are interconnected, they utilise the same business models and platforms and thus both continuously use old outdated business models that reflect multiple business offerings. Many of these business models do not align with the digitally transformed business environment and market, which increases the challenges for the students who have to follow these outdated processes, as indicated by Respondent 12 below.

"I think we should be looking at new business models, our processes are super strict and stringent, like up until the pandemic Covid-19 we had measures of people coming into the university to submit their applications, with their documents etc, while they can do this online through email and it can still be applicable, requesting hand deliveries in this day and age is really frustrating for most students especially our post-graduates. Also I believe content and teaching should be blended, majority of courses need to transform into a blended format. I'm not sure what are discrepancies, but it can work." Respondent12

Wits University has acknowledged the usefulness of the digitalisation of business models by introducing "Wits Digital Campus" and a few newly formed online programmes, according to respondents, both staff and students. However, this has not specifically been aligned to the existing business models as the digital campus is not strategically aligned to the other schools, although there is a misconception of it being interrelated. This was uncovered through a respondent stating:

"I mean look at this, Wits Digital offer some blended and online courses, yes some I think are built with some of the WBS staff however, there's many other faculties and schools across the university that offer very similar things obviously a different range of courses but this is where we picking up that there is room for

duplication, and I know we have duplicated costs and programmes across the university especially for short courses and online programmes." Respondent8

This has raised concern, especially within the rapidly changing digital business environment and disruptive technological advancements in today's world. With no clear digital strategy and vision and no improved or newly adapted business models and governance policies, WBS and Wits University do not appear to be geared up for the future. However, overall, respondents acknowledged the small pockets of digital initiatives currently being placed across different areas of the university and its value chain. There is room for the university to increase its digital maturity levels and slowly transform in the digital business era.

Digital initiatives across the university are undertaken in isolation most of the time, which may be detrimental to the investment decisions being made. The literature reviewed in Section 2.5.3 suggests that digital investments should be decided on taking into account the digital assets needed, in relation to the digital strategy and the overall determination to succeed in the digital environment (Volarić, 2018). Respondents believed that the university is not thinking critically enough, but is looking at current challenges and implementing quick fixes instead of looking futuristically towards a bigger goal and addressing multiple issues. For example, as a respondent shared:

"The university recently had to adapt to Covid-19 and this led to a request for multiple quotations to purchase a large number of laptops for each school, faculty etc. Each school and faculty further did their own separate quotation request and were separately invoiced. Instead of them being strategic, ordering a large sum on one account and transferring the money internally to enable economies of scale and negotiate better deals." *Respondent2*

This could have saved the university a lot more than anticipated – including additional delivery chargers – as the university has internal that which could have been utilised for deliveries across to different schools. Disruption cannot be avoided; therefore, embracing the disruption and adapting the university's business models will be vital to evolve successfully in the digital business landscape. This includes a leadership and organisational culture that adopts a self-disruptive attitude and understanding that there is a need to self-disrupt the ways in which we operate and how the university conducts its activities.

5.6.6 *Technological Resources and Capabilities*

Digital technologies are said to be the primary source of digital transformation owing to their tendency to be exponential and have subtle impacts (Berghaus & Back, 2016; Chanias & Hess, 2016). Respondents believed themselves to be inadequately skilled to work with some of the newly introduced digital technologies because their capabilities and competencies were not adapted to the newly formed digital technologies. They explained that even though they receive initial training to work on the systems and platforms, many of them still struggle and do not receive ongoing support to aid them in improving over time. The majority of the employees have been a part of the university for a number of years, with some having decades of service, and therefore they are more reluctant to embrace these new technological changes, mostly because of the lack of ongoing support. They fear the change as they do not have the right skills to conduct these activities in these newly formed ways. The adoption and adaptation of new technologies, coupled with the necessary digital skills, empowered digital workforces and digitally savvy leaders, are inevitably the recipe for successful digital transformation across the university.

Overall, the lack of the correct digital skills, digital literacy skills, digital technologies and people-orientated business models makes it more difficult to reach digital service mastery. Respondents stated that the correct leadership driven to become a digitally savvy university and business school could empower them towards making the necessary changes, through equipping them with training, workshops and skill development programmes, coupled with ongoing support in these new operative ways of working. The question remains: does the university have these ‘digitally savvy and digitally literate support staff’ to begin with to assist the staff with the necessary support for them to embark on the digital transformation journey.

5.7 Conclusion of Discussion

For digitalisation and digital transformation to succeed and achieve long-term sustainability, leadership is the frontier, setting the direction, vision, strategy, governance, cultural transformation, and business model and platform architecture. Traditional business practices need to be challenged and unlearned in order to achieve success in digital transformation. Traditional methods such as employing hierarchical leaders or management, silo mentalities, generic command and control legacies, and the reluctance to empower digitalisation need to be removed. Mutual levels of trust between

Wits University and WBS, coupled with a shared vision, strategy and purpose, will enable agility within the institution and allow WBS to reach greater lengths in the digital era.

It is prudent that a high level of focus should be placed on realigning current business models and forming digital business models that are relevant for the future. Business models are crucial to the digital environment and need to be dynamic, agile and flexible, and have an integrated architecture for them to thrive. Digital transformation is continuous and therefore underpins a series of experimentations and new learning. The data collected and analysed throughout the study confirms that these facets of Evans' Digital Transformation Framework (Evans, 2017) are critical in leading digital transformation. Furthermore, underlying themes are strategically aligned to the key themes of the Digital Transformation Framework.

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

Digitisation, digitalisation and digital transformation are taking the world by storm, revolutionising almost all industries globally, creating and impacting the future economies, and critically evolving the way in which business is progressing. Higher education industries are being disrupted across multiple facets, be it teaching, learning, research or simply striving for long-term sustainability. Educational institutions and predominantly business schools are facing rapid changes in addressing the crisis of digital disruption. They need to digitally transform their academic course and programme offerings, from both a contextual and mythology perspective, as well as transform their business models, teaching methodologies, processes and other related services. If they do not factor in the entire cluster of facets within the higher education landscape, these institutions in the near future will be faced with potential dissolution and disintermediation. This calls for a newly reformed calibre of leaders with various new skills, competencies and capabilities. This research sought to uncover the status of digital transformation at WBS as part of Wits University. The study aimed to assess the current digital status and digital initiatives of WBS, and analyse its thinking, methodologies and practices related to digital transformation. The research was conducted in relation to the digital transformation framework put forward by (Evans, 2017).

Critical themes were derived from the research that highlighted significant areas of importance. In Chapter 4, recommendations embedded in the responses of interviewees and students from the surveys are presented and in Chapter 5 a number of new improvements and various opportunities are identified. Chapter 6 specifically prioritises the critical areas that WBS needs to address in the near future. The chapter begins by addressing the research objectives that the study aimed to achieve by summarising the outcomes of the study in relation to the research questions. On the basis of the conclusions reached by the study. recommendations for leading in a digital context are presented and recommendations for future research suggested.

6.2 Conclusions regarding Research Questions

The research study aimed to assess the current digital status and digital initiatives, and analyse the thinking, methodologies and practices regarding digital transformation at WBS. To pursue this aim, the following research questions were developed.

1. What is the digital maturity of WBS?
2. What are the essential building blocks to implement the digital transformation strategy?
3. Does WBS have a digital transformation strategy to deliver on its digital promises?
4. Are all the relevant factors in place for a digital environment to grow and thrive?
5. What are key factors hindering the digital transformation process?

6.2.1 *What is the Digital Maturity of WBS?*

Important conclusions were drawn around the concept of digital maturity. Firstly, the concept was seen as a broad and complex phenomenon and individuals needed clarity on what it truly encompassed. There was a clear overlap between digitisation, digitalisation and digital maturity. However, there were no major misalignments of the concept; essentially responses tied back and linked to some form of digital maturity. Secondly, in a basic Likert-scale evaluation of the level of digital maturity at WBS, the respondents assigned it a low score of one or at most two, with the majority of respondents considering WBS as not being digitally mature enough to master a digital business environment.

The study, through the interviews and survey, prompted respondents to think of digital in a much broader landscape. It can be concluded that WBS does have a broad understanding of the need to digitise processes and business operational activities. Furthermore, it can be concluded that there are numerous digital initiatives and projects on the rise and currently being implemented across WBS. However, whilst an increase in digitalisation has occurred across the school, there are no goals or greater vision or strategy in sight. There has been no communication to the WBS community about any digitalisation strategy that the school intends to use going forward.

Among the respondents, there is a collective feeling of uncertainty, fear and anxiety around the leadership of WBS in relation to the future and the path that they are being directed towards. It is apparent from WBS respondents that they believe that the school

has a future but it will lose its market position if it continues to be led without a clear vision, strategy and digital direction going forward. Individuals, both students and staff, have recognised a state of stagnation in many areas of the value chain and the outdated business models that WBS is currently using to stay prominent in the digital era. However, a sense of comfort is achieved through the ongoing solution of having people focusing on ad hoc, day-to-day plug-ins to clear up challenges as and when they arise. Balancing and implementing these ad hoc interventions will be more costly and counterproductive in the long run.

The quick fixes, ad hoc interventions and quick plug-ins have come about from the enduring and fairly outdated governance and policy processes that WBS leaders have had to follow strictly in line with the bureaucracy of Wits University. Timelines for processes and approvals are lengthy and are inflexible in terms of the digital business era. Opportunities are being lost because WBS needs to follow outdated traditional business rules. Flexibility around this problem area needs to be ensured: *"they need to become flexible, it cannot take months for approvals, we are losing business" (Respondent2).* It was evident that the current governance models do not fit the purposes of a digital business environment and senior management is not crucially taking this into consideration or even taking into account the feedback from employees.

Customer services are failing at WBS. Students have had endless issues with administration services: *"Phew! WBS follows very old and outdated processes, we still have to come in for general administration and issues to be resolved" (Student Response).* Many students have raised issues of a similar sort, all of which could be resolved seamlessly using emails and real-time responses. The students are WBS customers and, in the simplest sense, understanding and meeting the customers' needs is the most important consideration for ensuring long-term sustainability. With such inadequate customer services, WBS is losing students; even those who have registered tend to leave and register elsewhere. The job at hand is to listen to the students' issues, challenges and feedback and to deliver service and resolve their problems. Enabling administrators to assist first-hand with common issues can potentially eliminate many more problems. WBS is an organisation that follows a strict process-driven format in handling all activities. The new digital era requires processes to be updated to enable real-time responses within 24 hours for simple administration technicalities.

Evidently, getting administrative staff to utilise, adapt and adopt these new technologies and new systems is a profound issue across WBS. Apart from digitalisation of administration issues relative to customer services is the issue of having multiple digital

platforms that students are obliged to access and work on for the purpose of studying. This is the result of non-integrative systems and platforms. The complexity of having so many different platforms has made dealing with WBS increasingly inefficient for its customers. As one respondent suggested: *"Why can't we just find everything in one place, it's really not that difficult for the university to get a portal for us to utilise that is user friendly" (Student Response).*

Despite all the issues hindering digital maturity, the Covid-19 pandemic has moved WBS to becoming more digitally mature over the past few months. 2020 liberated WBS to become digitally focused to ensure that classes, courses and programmes continue whilst a global deadly virus infiltrated the environment. WBS steered a definite way forward, recognising what could be achieved through having a digitally focused school. The pandemic has aided the drive towards digitalisation in a large sense and has influenced new purchases of new systems and digital technologies. Evidently this paradigm shift has been a positive takeaway from a global pandemic.

Essentially, the digital era of automation, digital intelligence and convenience is upon us, WBS needs to adapt and adopt new technologies that are suitable for its market and WBS business operations need to embrace this risky yet potentially rewarding era in a highly advanced and professional way. It will encompass the usefulness of both human intervention and system solutions, whilst removing the learned bureaucratic behaviour from the WBS environment. Leaders need to reflect on and look at the bigger landscape and the impact of these small plug-ins over the long run and ascertain whether this should be looked at from the even greater perspective of the university.

6.2.2 *What are the essential building blocks to implement the digital transformation strategy?*

The concept of digital transformation was a fairly new concept for the respondents. Many respondents considered digital transformation to be an ongoing trajectory of digital and non-digital processes. In addition, the perceptions of respondents did not reveal any misunderstanding of digital transformation by overlapping it with the concepts of digitisation, digitalisation and digital maturity. The building blocks identified for implementing a digital transformation strategy could all be accommodated within the four pillars of the Evans' Digital Transformation Framework (Evans, 2017), which are strategy and vision, people and culture, processes and governance and technology and capabilities.

Respondents highlighted the major building block for digital transformation as 'leadership', considering it to be the most important factor for driving the necessary changes and transformational developments in any organisation. However, WBS is faced with the critical impediment of an unstable and unreliable leadership. There have been constant changes in WBS leadership, with such frequent changes often leaving the organisation unsteady and employees feeling anxious. The workforce under this type of leadership remains fearful, in doubt and anxious about what is going to happen next. These changes in leadership have left respondents hanging by a limb, as they employ strategies that are then changed, leaving work incomplete and productivity inefficient. Another important aspect regarding leadership is that the new leaders coming into the school do not understand the way in which the school operates from a business or market sense or an academic standpoint. Leaders who are too academically inclined are often not best suited as business managers, as theory is not always applicable in a practical business.

The digital era requires a different type of leadership for WBS, as suggested by the respondents. "*It is important that we have a leader that is agile, digitally knowledgeable and knows how these new technologies impact our business and what we need to do" (Respondent8).* The call for a bold, brave, flexible, risk-taking, digitally savvy and academic professional is increasing. WBS requires a leader who is both academically advanced and has a strong business sense and understanding of how the corporate market operates. Fundamentally, from a wider perspective in relation to skills, it is not only the leader that needs to acquire new digital skills, but also the entire workforce. Employees need to adopt and adapt new digital skills that allow them to radically involve themselves in this digital paradigm shift. Leaders need to promote this inclination towards digital and motivate their teams to become more digitally savvy. Ultimately, this promotes the overall cultural transformation that needs to be embraced throughout the digital transformation journey.

The second major building block identified was a digital strategy. The balance between strong leadership and a successful cultural transformation can only be achieved with a clear digital vision and digital strategy in place. Fundamentally, WBS needs to put forth the digitalisation vision and strategy that is needed to drive the WBS environment on a successful digital transformation journey. Currently this major building block is lacking; there is no clear articulation of a digital direction and thus WBS is using the plug-in approach to resolve challenges as quickly as possible, without an overall view of the issues. Furthermore, whilst this is the situation encountered at WBS, respondents and observational insights highlight that the direction and strategy development should be

announced and configured at university level. WBS is a sister group and follows the bigger group's digital strategy and vision, which is lacking at this point. Whilst there may be investments across WBS and Wits University in digitalisation initiatives, the greater digital vision and strategy have not yet been adopted as university goals. It is critical for the university to develop a group-level strategy and follow a portfolio approach for schools to build on.

To date, the strategy has not been fully developed as a result of the lack of digital flexibility in or amendments to the university governance and policies, which WBS is required to follow. This means that WBS is following outdated and pervasive processes that are inefficient and ineffective for the digital business era. They lack the flexibility and adaptability required to work in the digital age and thus WBS is further constrained from making decisions to progress on a digital front. For example, the university requirement for students to hand-deliver applications to WBS is outdated and online applications should be accepted. However, WBS programmes or short courses do not have a general seamless online application stream connected to the main university, with potentially only a handful of applications that can be linked, as indicated by respondents and discussed in Chapter 4. Pursuing governance and other elements of digital transformation in isolation will hinder and limit the potential of returns and evidently cripple the university in many areas.

In addition, as drawn in from the above discussion, technological developments and software are not ideally linked or integrated within the university. However, technology and capabilities are seen as a building block and thus should be carefully considered and integrated across the university including the business school. It can be concluded that this is due to the university and WBS continuously adding in plug-in solutions to current issues and challenges and not incorporating the ideology of digitalisation into a bigger digital strategy and moving forward as a group. Customer centricity is a major facet and should fundamentally drive the university from the core through a digital customer-centric strategy, which will ideally encompass all the necessary building blocks. Wits University is stuck on the business goal of driving research as the most important feature of the university. This is still attainable and could potentially be reconfigured within a digital strategy that would enhance the overall outcomes of research. If the student experiences are challenging and filled with relentless issues, no research goals can be met. Students are and have been looking at alternative business schools for better experiences that enhance their studying experience overall.

Amongst the building block of capabilities, WBS needs to enhance its workforce capabilities and digital skills to drive a better customer-centric student experience coupled with introducing new digital technologies that interlink and create a seamless journey for both the students and staff of Wits University. New digital disruptors entering the higher education playing field, such as Udemy and many others, provide streamlined customer experiences and are on the rise because of this. The only thing holding the majority of these institutions back is their need for accreditations of formal qualifications. WBS and Wits University hold these accreditations and have built a legacy on them. If WBS concentrates on improving its customer experiences, it will establish a future-proof and sustainable business school with a legacy of being one of the best business schools in South Africa.

6.2.3 *Does WBS have a digital transformation strategy to deliver on its digital promises?*

The ideology of a digital strategy and digital vision is fairly new. According to the interviews with respondents, observations of governance and analysis of policies, WBS in conjunction with Wits University has articulated no clearly defined digital strategy. Instead, WBS and Wits University are focusing on small pockets of digital initiatives to progress digitalisation and are driving multiple different digital projects across the spectrum of the value chain. However, many of these digital projects are not thought through thoroughly before being implemented and therefore WBS is replicating and duplicating efforts to digitise while the university is also introducing a number of different technologies across different schools. Increased scales, increased economies and increased returns are obtained for a process-driven institution (Mogale, 2019). The lack of communication and direction from senior-level management has placed WBS in the position where it must embark on digitalisation projects on its own, to meet the market challenges and customer-experience challenges it is faced with. In conjunction with long discussions and turnaround times with senior management, WBS has begun to reconfigure internal processes to make them suitable and applicable. However, with the ever-changing leadership, WBS is not realising the true values attainable from its business practices. Essentially returns on investments are being hindered and duplications are increasing costs.

WBS is certainly heading in the direction of digital transformation: the new appointment of Mr Radebe to lead WBS from 2021 has brought increased faith and hope to the respondents. With this newly restored faith in the leadership, coupled with the business

school's response to the Covid-19 pandemic and the paradigm shift towards new digital methods and ways of work, WBS is increasing its drive towards digital transformation. The Covid-19 pandemic has shifted gears across WBS and the university and has essentially pushed the digital maturity levels of the institution far ahead of what they were at the beginning of 2020. Through this paradigm shift and recognition of an urgent need to digitise, Wits University has now many new improvements: a new vice chancellor, new head of school for WBS, and the purchasing of multiple new solutions and programmes for the university to utilise during its digital transformation process.

While there is an increase in digitalisation, another key view that should be acknowledged is that the university should also consider a digital strategy for content or programme development across all fields of study. The university needs to adopt more aspects of digitalisation into its current course materials and context of studies, outlining what influence digitalisation is having across the diversity of current industries and what industries are on the rise, just as WBS has set up the BCX programme in Digital Business. There is a clear disparity in the intercommunication between Wits University and WBS and this is fundamentally affecting the overall progression of the digital transformation journey.

6.2.4 *Are all the relevant factors in place for a digital environment to grow and thrive?*

Looking at WBS from an overall perspective, putting together all the opinions expressed by the interviewees, survey responses, policy facts and observational materials, it is safe to conclude that, overall, all the relevant factors for a digital business environment to grow and thrive are currently not in place. There are some factors that support the notion of a digitally built business environment, but there are many factors that are not close to being implemented. Essentially the majority of the factors highlighted by respondents as important for the growth of a digital environment tied in strategically with the four high-level themes of Evans' Digital Transformation Framework (Evans, 2017).

While WBS does not have a clearly defined vision and strategy, it has a strong digital sense and digital focus, which are being built up in line with increasing investments in digitalisation. Holistically, the same result can be concluded for Wits University: there is no overall digital goal, but the university is definitely increasing its digital priorities. In this way, it is increasing its overall digital maturity levels and entering the playing field for a

digital business to grow and thrive as we can see from the quotations below, taken from observational material.

"Wits latest digital innovation was the release of 'KuduBot' which is their online Chatbot that is set up to enhance overall students services to provide students with access to convenient support to their enquiries" (Wits, 2020b).

"Africa's first 5G Innovation Lab- Wits & Huawei collaborated to bring Africa's first 5G innovation lab in Wits Tshimologong Digital innovation precinct" (Wits, 2020a).

The essential factor that drives the digital transformation journey is leadership. As outlined in Section 6.2.2, WBS lacks stable leadership and this has negatively affected its progression towards digitalisation. However, across the university and WBS, with the increase in digitalisation, Wits University is making radical efforts to drive digital human capabilities and skills development. The Wits HRDU unit has relentlessly and constantly implemented training to keep the Wits workforce updated and to upgrade skills and competencies. With this being said, most individuals believe that they are not fairly motivated or incentivised to become better; they feel they can do so much and still be unrecognised. Insights obtained from the study suggest that, more than digital skills, other skills and facets need to be developed, such as cultural beliefs, values, passion, individual skill development, communication skills and other non-technical traits to master digital services. The university and WBS can potentially uncover a significant pool of skills that can be applied to different functions. The institution can empower a workforce that is built up of multifaceted individuals. This is a university after all, with pioneering experts in many fields among its staff.

By capacitating the current workforce, WBS is becoming digitally innovative, innovating the way in which it conducts day-to-day business activities, shapes customer experiences, and uses teaching methods and learning tools, such as course programmes, modules and trainings. A conclusion about innovation from a different perspective was drawn when considering innovative collaboration as a team and working on efficiently driving innovation across the university. In contrast to the current practice of working in departmental silos, this would increase scalability, teams and frameworks to empower and embody a stronger group with a digital focus and drive to lead the university towards becoming the number one digitally focused university institution while still tying in all its other business goals. Essentially, reworking processes and building new innovative methods that are more effective will require an integrated governance that sets up the university towards becoming digitally transformable on a different level. Governance can potentially be linked and lead the university to become a digital

champion in the higher education sector. Serious efforts across senior management and teams need to be made to embrace a winning mentality across the board regarding systems and transformation. It is this motivation and belief that can elevate the university to success in digital transformation.

Furthermore, with the presence of the Covid-19 pandemic and the overall push for traditional ways of operating to be reconfigured to suit the digital functionalities of online teaching, learning and administering, buy-in from the majority of the workforce across WBS to become more digitally inclined has already been achieved. Digital skills are on the rise, digital platforms are being introduced swiftly and thus it can be concluded that the reluctance to move towards digitalisation has been greatly dispersed. Many individuals are happy to proceed, and this has been the biggest push towards WBS creating a digital business environment in which to grow, thrive and retain sustainability. This is the time for WBS to create the paradigm shift that the digital environment requires and relook at business methodologies and business models to increase its efficiency in the digital era.

6.2.5 *What are key factors hindering the digital transformation process?*

There are a number of factors that are hindering the digital transformation process. The study findings pointed to leadership as the top hindrance factor. Without a stable leader, people are afraid and are anxious about what direction they are going to be driving towards, especially in the unprecedented times of living through a deadly global pandemic. WBS has not had a stable leadership over the last few years and these changes in leadership have detracted from their progression, as business strategies keep changing and initiatives are then ended or elevated, depending on the priority of the new leader. Furthermore, the differentiation gap between the types of leaders that are placed at WBS creates further unsettlement, as some leaders are more academically inclined whilst others are more business orientated and the lack of an all-round leader is definitely visible to the staff and public, as indicated by Respondent 2.

"Often we get these leaders who are academics, okay we get it you know the theory well and we see why you are important, but many times they do not know the business sense and end up making decisions that are more supportive towards other priorities which are not always most important or help us increase revenue – like worrying about more books in the library, as opposed to how we can use that investment to increase student numbers, this is just example." Respondent2

Leaders drive the direction and set the path along which changes are made. To enable these changes, governance is required, and this was revealed as the second factor that is hindering the growth of digital transformation. There is a clear lack of agility caused by the old, outdated processes and policies that are required to be followed. The processes are rigid and essentially the architectural stack is far too complicated and complex, with an endless list of software, systems and digital programs that students and staff have to work with to carry out their daily tasks. A further hindering factor tied to outdated processes and systems is technological stack and capabilities. The rigidity of the technological architecture and the inflexible nature of governance and processes makes the execution of all tasks far more time consuming and far less seamless than they should be in this digital age. Essentially this is preventing WBS from operating freely in the digital ecosystem environment.

Furthermore, the execution of new technologies matched with the capabilities to use those technologies is not yet in place nor is the buy-in to digitalisation mature enough to generate motivation for all individuals to accept the new changes being implemented smoothly. However, Covid-19 has definitely pushed WBS and its community towards becoming more digitally focused, inclined and savvy. The workforce embodies professionals in particular fields, but these professionals need to take on new digitally specialised skills as well. Training, skills development workshops and other forms of learning are essential for the growth of the school if it wishes to retain a favourable market position. The shift from many manual and paper-based processes is now inevitable and needs to be adopted in all areas of WBS.

Additionally, the only way in which WBS can achieve the skills, capabilities and buy-in of new technologies is through ultimately changing the culture. Cultural transformation is a major area that needs to be worked on through leadership. Digital disruption is not only about new technologies but also requires a reconfiguration of the cultural mind-set, and the unlearning and relearning of new methods, changes and things to anticipate. Extensive motivation of and communication with the workforce will be required to drive the digital paradigm shifts. WBS culture can be considered one of the most impactful hindrances as the teams across WBS are accustomed to working in their small silo groups and retaining their benefits instead of collaborating on and corroborating efforts to push beyond their silos and become a more favourable and recognisable business school for potential students.

Furthermore, in order to become more favourable, business models need to be relooked at and redeveloped to embody agility and flexibility. Critically, in order to derive new

business models, WBS and Wits University need to decide on the strategic direction in which they wish to proceed. Efforts are required for business models to be redefined. WBS has no digital strategy and digital vision that allow it to make these required changes, with most changes taking place because of the rapid improvements in the market and the current customer requirements. These new customer needs and requirements are essentially the pivoting point for WBS, which is utilising feedback to make ad hoc changes to empower a digital transformation journey, encapsulating a digital vision and strategy, instead of developing a coherent strategy. To this extent, it is the responsibility of WBS and Wits University to reflect collectively on and rebuild their operating structure and value chain, ensure that the business units are clear and the focus is coherent across the institution.

6.3 Contribution to Research

This research study allows for two significant contributions, empirical and methodological contributions which are further discussed below.

6.3.1 *Empirical Contributions*

Most empirical research that study the same context as this research are carried out in developed countries and particularly in industries that are climbing the digital evolution ladder swiftly; such as Retail, Banking, ICT and Construction. In South Africa, however, the Education sector may be gradually increasing its digital transformation, this is happening at a slow to moderate pace compared to other leading industries. The main empirical contribution of this study is the inclusion of students' insights, experiences and perspectives regarding the research topic. Which is not widely the practiced approach where only the senior staff of organisations are generally interviewed. This specific inclusion of students understanding, addresses the customer experience gap, which is evidently the core focus of digital transformation (Westerman et al., 2014).

The research also included a diversity of employee groups to allow for a wider perspective to gain insight into the different categories and themes across the value chain within the institution. Few digital transformation studies have been conducted from a South African perspective and thus it is important to grasp the holistic overall perspective of all stakeholders that make up the specifics of an institution.

Furthermore, with this research being conducted in a developing country with a developing economy, income classes differ significantly and have impacted the digital adoption, adaptation and assimilation of students and staff across the institution, providing richer insight to aid in finding solutions that are not only applicable to one particular income class but fit all different levels.

6.3.2 *Methodological Contributions*

The qualitative approach, while not rare, incorporated data source triangulation that enabled a deeper approach to the research. This holistic approach increased the depth of the data and aided in clearly identifying the key factors that could potentially influence the success of digital transformation and mitigating data biasness from collated data sources. Although the research study could be designated as a single case study, being based on one particular university, the interplay between a Business School and the parent university which is incorporated in this research, provides richer and in-depth insights that would have been achieved with multiple case study research.

Furthermore, the data analysis followed throughout the study allowed for both appropriateness and integration in relation to the different data sources. This ensures that both unique and general insights were contrasted and integrated to generate higher level themes that suitably answered the research questions. Nvivo aided in locating the exact points of impact from higher group level strategies, decisions and governance that further hindered the digital growth of the business school.

6.4 Recommendations

The recommendations below are based on the study outcomes and conclusions.

6.4.1 *Appoint Digitally Transformative Leaders*

The study showed leadership to be the main building block towards driving all the necessary changes for digital transformation. WBS needs to employ a leader who is agile, bold, brave and willing to take risks. The type of leader that will drive digital transformation at WBS should be a transformative leader, who is recognised as a digital native with potentially digitally adapted and cognitive skills, coupled with being digitally savvy and having a clear understanding of what the digital business environment

requires. This leader should show a fine balance of leadership between being academically inclined, a business specialist and a digitally equipped leader.

6.4.2 *Clearly Articulate the Digital Strategic Direction through Redefined Business Models and Governance*

Having a clearly articulated vision and strategy will help WBS and Wits University build a digitalised university. While WBS does not have a separate digital strategy from the Wits University group, at group level, there is no clearly defined digital strategy that would give meaning to the university's aspirational and business goals. These goals will predominantly be attained through digitalisation of new business models, processes and capabilities. Therefore, it is absolutely critical for a digital strategy to be developed that indicates what types of new business models should be pursued or redefined to customise the overall university experience.

6.4.3 *Redefine Governance Investment Measures*

WBS faces an ambidexterity challenge around investment decisions and the outlook of current and future investments, looking at the long-term sustainability of the business school. WBS would do well to relook at the investment ratios across horizons 1 to 3. However, these ratios need to align strategically with the school's digital vision and direction and coincide with the type of leader positioned at WBS. Fundamentally, a larger percentage should be placed on the digital priorities of the school as, through digitalisation, the school will build its presence as a market leader in the business school education sector.

6.4.4 *Develop a Newly Formed Organisational Structure and Integrated Digital Architecture*

Digital focus and digitalisation bring about changes in the institution from the new governance, business models, new skillsets, and new ways of thinking and of conducting daily activities. WBS needs to test and learn the best way to operate in a digital business environment. It will be critical to begin with learning new methodologies and processes from the new organisational structure and digital architecture to assess future points of development and experiments. Key principles that underpin this new organisational methodology include: becoming more customer centric, increasing digitally focused areas, designing structures around student journeys across the scope of the multiple

studying options available, focusing on the breakdown of silo groups and inculcating cross-functional teams, rewarding collaboration and decentralising structural authorities across the scope of WBS. This methodology can be reconfigured towards Wits University after being tried, tested and improved.

6.4.5 *Consolidate and Proliferate Data*

Data is a critical facet of digitalisation. It is a core focus area that will enable the university to drive initiatives, innovation and customers. Student and staff data are equally important. Thus, data that enables customer centricity and a student-driven journey should become an ongoing focal area for business development of WBS. And Wits University

6.4.6 *Appoint a Digital Officer and Creation of a Digital Team*

With digital transformation being a fairly new concept in the market, coupled with disruptive digital technologies and the unprecedented time of a global pandemic, current leaders are often puzzled about what they should to do to adapt, adopt and assimilate new digital advances. To this extent, WBS needs to have a digital leader, a specialist in the field of digital business over all areas of the value chain. It would be advisable for WBS to be the first among business schools to develop a digital business team, starting with the appointment of a digital officer or digital specialist. This position will encompass multiple roles, such as identifying new digital technologies, processes and business models; defining the digital culture; and overseeing skill development for a digitally savvy business school. This officer will work with senior officers to digitise and enhance business process to increase efficiencies across all service outcomes.

Furthermore, WBS needs to conduct skills evaluations by producing a digital skill competency report to establish different levels of digital skills across the university and how these skills impact the various job roles and tasks. WBS groups should be recognised for their efforts towards transforming their skills, qualifications and capabilities, and the digital team should create a digital incentive recognition programme to assess the WBS workforce on a continuous basis towards seeing what efforts, digital and non-digital, translate into new digital innovation practices. These efforts must feed directly into a digital incentive programme, to award new recruitments, improved cross-functional team developments and remuneration frameworks. This digital team and incentive programme should be used to inculcate a digitally transformed culture.

6.5 Suggestions for Further Research

Digital transformation research into university schools across South Africa is fairly limited. With the Covid-19 pandemic increasing digitalisation across the country and globe, more research into digitalisation in universities needs to be explored. The findings of this research study are specific and directly relate to a specific business school; however, the study has highlighted considerations for future study. The following areas are suggested for future research:

I. The research study specifically focused on WBS as a case study within the higher education sector. Further research is required to evaluate the applicability of the findings to other university schools, university faculties and other educational institutions facing digital transformation.

II. The research study could be furthered to address digital maturity and digital transformation across the parent university, Wits, through an in-depth study on current status of digitalisation and digital transformation initiatives that could potentially influence the digitalisation of its schools, faculties and support related departments.

III. The research touches on looking at digitally transforming the content, context and programmes of current fields of study offered through the university. Further research could be carried out to explore how digitalisation is impacting these fields of study and to what extent universities need to create paradigm shifts in the courses and programmes offered.

IV. The development of a digital-maturity-for-universities model could be explored, as this is a vast environment, along with what digital maturity may mean to the university. This research could incorporate the generational discrepancies of millennials versus leaders, looking into perceptual differences regarding digital maturity across the generations.

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APPENDIX A: Questionnaire

Questionnaire Cover Page:

Service Quality Experiences and Perceptions of students at the University of Witwatersrand, Wits Business School.

The Digital Era has evolved and become a part of our everyday lives. New digital technologies are disrupting the business landscape and thus evoking new changes in all businesses and organisations across the market.

The questionnaire is to obtain feedback from you as a student at Wits Business School regarding your perceptions regarding the service quality experiences at Wits Business School in relation to digital adoption, adaptation and transformation. The questionnaire is made up of various scaled questions as well as open-ended questions that allows you to provide your opinion. The results of this questionnaire will be used to gain a holistic view of Wits Business School Digital transformation processes and the success thereof.

Participation and completion of this questionnaire is voluntary and anonymous. The questionnaire should take no more than 15 -20 minutes to complete. Your co-operation is appreciated.

Please answer the questions from your personal perspective and honestly.

Select the most appropriate response accordingly.

Thank you for your participation.

Q1: General

1.1 To ensure that this questionnaire is only answered once, please enter your student number.

1.2 What is your gender?

- Male
- Female
- Transgender

1.3 How old are you?

20 to 29 years	
30 to 39 years	
40 to 49 years	
50 to 59 years	
60 to 69 years	

Table 3: Age Grid

1.4 What year of study are you completing?

- Year 1
- Year 2

1.5 Why did you choose to study at Wits Business School?

Q2: Individual Digital Capabilities

2.1 Which of the following digital devices do you own?

- Smartphone
- Smartwatch
- Mobile Tablet
- Laptop
- Other, please specify below

2.2 On a scale of 1 – 5, where 1 is low and 5 is high, how would you rate yourself in terms of digital capabilities?

Statements	Low				High
I can easily adapt to different technological devices and continue working at any time of the day.	1	2	3	4	5
I use my smartphone mainly for personal calls, texts and other social uses. I cannot easily begin working on my smartphone on any work or studying related projects from a small hand device.	1	2	3	4	5
I can easily adapt to e-books and digital papers and do not require printed books or papers to work from.	1	2	3	4	5
I am capable of completing digital workbooks, assignments and examinations online under the necessary requirements.	1	2	3	4	5
I am digitally savvy and take interest in learning new digital capabilities to upskill myself.	1	2	3	4	5

Table 4: Individual Digital Capabilities

Q3: Digital Platforms and Services Satisfaction

3.1 Wits and Wits Business School make use of multiple digital platforms for students, please indicate which of the following platforms you utilise. You may select more than one.

- Wits Self-Service
- Wits E-Portal (Sakai)
- Wits E-library
- Wits Student Email
- Wits Student – Microsoft Teams
- Other, please specify below

3.2 In your experience and opinion, are these platforms user-friendly? If yes or no, please provide the reasons for your answer below.

3.3 In your experience, what are some of the typical challenges you face whilst using these platforms? Specify the platform and challenge

3.4 On a scale of 1 to 5, where 1 is strongly disagree and 5 is strongly agree, indicate the extent to which you agree with each of the following statements below.

Statements	**Strongly Disagree**				**Strongly Agree**
Digital Platforms should be closely integrated and should therefore provide us with all information on one platform instead of having to access all different platforms to acquire necessary information	1	2	3	4	5
Students records should all be interlinked from Undergraduate to Postgraduate and list all courses completed to provide a holistic 3D view of the student and profile the student accordingly	1	2	3	4	5
Real-time service responses should definitely be included on service platforms, through the form of an online chat portal for students and lecturers to communicate	1	2	3	4	5

Students should be provided with training during orientation to learn how to use the necessary digital platforms that will be applicable for their period of studying	1	2	3	4	5
A handbook should be provided to students to ensure they are equipped with all the information needed to access different platforms for different needs.	1	2	3	4	5

Table 5: Digital Platforms and Services

3.5 In relation to satisfaction, how high or low would you rate your customer satisfaction with regards to customer service delivery from WBS?

- Very Satisfied
- Moderately Satisfied
- Satisfied
- Low Satisfaction
- Unsatisfied

4: Vision and Strategy

4.1 Does Wits Business School have a transformative vision of the digital future for the institution?

- Completely Disagree (1)
- Disagree (2)
- Neither Agree nor Disagree (3)
- Agree (4)
- Completely Agree (5)

4.2 In your opinion do you think that WBS has considered the digital transformation vision to incorporates both the customer experience priorities and internal operations

- Completely Disagree (1)
- Disagree (2)
- Neither Agree nor Disagree (3)
- Agree (4)
- Completely Agree (5)

5: People & Culture

5.1 In your opinion and to your knowledge do you think the senior leaders, professors and lecturers are tech-savvy? Are they aware of technology developments and use new technology products comfortably in their daily working/ lecturing and personal lives?

5.2 If you were given the opportunity to switch to a different university, what would be the reason you would find it hard to switch?

- I am highly satisfied with the overall customer service I receive throughout Wits Business School
- The Administration behind switching is too tedious and not worth my time and effort
- There are extended benefits to utilise across Wits University when being registered at Wits Business School
- I'm a loyal Witsie from undergrad

6: Processes and Governance

6.1 Across Wits Business School Coordination: The initiatives are coordinated across silos and different programme offerings (Divisions, BUs, functions).

- Completely Disagree (1)
- Disagree (2)
- Neither Agree nor Disagree (3)
- Agree (4)
- Completely Agree (5)

6.2 As a customer of Wits Business School what experience or process experience would you like to be improved?

7: Technology and Capabilities

7.1 Are Wits Business School employees using any new technologies to interact and engage with you as students? If so how are they doing this?

7.2 In your opinion, do you think Wits Business School employees (administrative and academic) are inclined with the necessary digital skills and knowledge to drive digital transformation?

The End

APPENDIX B: Interview Guide

The proposed interview guide:

The Digital Era has evolved and become a part of our everyday lives. New digital technologies are disrupting the business landscape and thus evoking new changes in all businesses and organisations across the market.

My name is Yasira Cajee and I am conducting a research study as part of my Masters qualification that I am completing at Wits Business School. My research topic is **Digital Transformation in University Schools: A case study of a South African Business School**. The purpose of this research study is to strategically evaluate the status of digital transformation at Wits Business School, of the University of Witwatersrand. The aim of the study is to assess the current digital status, to analyse the thinking, methodologies and practises of digital transformation initiatives. The study is guided through academic literature and industry practises. The data attained in this study will potentially highlight key success or hindering factors of the digital transformation process.

Your participation in this study is critical to the success of new digital initiatives. All inputs and information shared will be strictly confidential. Wits University itself will be protected. The final report will be shared with the Head of School at Wits Business School and participants. Furthermore, due to the current COVID-19 pandemic and lockdown rules being in place, please note all interviews will be conducted through virtual online meetings and will thus be recorded.

Before beginning the interview, do you have any questions or statements you would like to put forth? And are you still have to participate in the study?

Thank you for your participation.

Theme	*Objective Theme Question*	*Basic Level Probing Questions*
Theme 1: **Strategy and Vision**	What is WBS vision driving digital initiatives?	1. With IR 4.0 in place, what is WBS vision? 2. Does WBS have a clear and defined digital transformation strategy? 3. What are the key drivers of WBS digital strategy? 4. Is there investments going into digitalisation at WBS? And approximately what is the current level of investments? 5. Do you believe Business Units/ Product must drive their own digital strategies vs a WBS level strategy? And further do you think WBS strategy should be driven in isolation or with Wits University? 6. Digital Maturity is the capacity of an organisation to thrive in a digital era, in your understanding, what is the level of maturity and effectiveness of WBS digital strategy? 7. Investments are a key factor in digitalisation, in your opinion, how must investment decisions be made?
Theme 2: **People and Culture**	What kind of organisational culture and people architecture is required for the success of digitalisation across WBS?	1. Leadership is important to drive changes, in your opinion what kind or type of leadership is required to drive digital initiatives for digital transformation? 2. Amongst all teams, there are different people doing different things, what do you think are the kinds of skills required for the future? 3. How would you rate the digital skills rate at WBS in regard to the digital transformation initiatives? 4. Digital literacy is another facet to bear in mind with regards to digital skills, in your opinion what will be the best way for WBS to increase digital literacy and education? 5. Are there any opportunities for improvement that you see with respect to leadership, skills and culture?

Theme 3: **Process and Governance**	How is governance practiced and How would you describe a governance model for digital initiatives?	1. How mature is the current model? And what opportunities are there for improvement? 2. What process should be followed to drive digital innovation? 3. How should WBS initiate and drive the change? 4. What is the level of maturity of WBS governance?
Theme 4: **Technology and Capability**	What would you describe as the core capabilities and technologies required for digital?	1. What resources and capabilities do you think are necessary for WBS to have to prevent itself from being digitally disrupted? 2. Is digital technologies the only important element for the success of digital transformation at WBS? 3. WBS has been amongst the top business schools across the country, in order to maintain this market position how do you think WBS should disrupt the market? What should they do differently that will make them more attractive? 4. Do you agree or disagree with changes to business models? What do you think are potential business models WBS should consider exploring? 5. Digital service mastery, allows for agile and innovative business practices, in your understanding of services how mature are these practises at WBS and where do you think the focus should be driven towards?
Theme 5: **Other themes**	What are other key themes that you think are important in digital transformation?	1. Apart from what we have discussed, what are key elements in digital that may further influence and impact the way people do their work, socialise, stay informed etc?
General Conclusion Question	What is the overall digital maturity at WBS?	1. The digital environment is rapidly improving and growing, in your opinion, what are the top three significant areas that need to be addressed immediately to ensure success of digital initiatives?

Table 6: Interview Guide

APPENDIX C: Formal Email – Questionnaire

Dear Student

The Digital Era has evolved and become a part of our everyday lives. New digital technologies are disrupting the business landscape and thus evoking new changes in all businesses and organisations across the market. The adoption of new technologies and changes made to how we do things influence how organisations react and improve their business processes, products and service offerings.

I Yasira Cajee, am writing this email to request your participation in my research study, for my Masters qualification, Masters of Management in the field of Digital Business. My topic is **Digital Transformation in University Schools: A case study of a South African Business School.** The aim of the study is to assess the current digital status, to analyse the thinking, methodologies and practises of digital transformation initiatives. The data attained in this study will potentially highlight key success or hindering factors of the digital transformation process. This will be achieved through leveraging academic literature, industry insights and your valuable input.

As part of the research study, I would like to invite you to partake in answering an online questionnaire. The questionnaire will take about 15 to 20 minutes to complete. If you are willing to contribute, please click the link below:

http://sfulsg.co1.qualtrics.com/jfe/form/SV_72FsSrRvT99QGl7 (Example)

By completing and submitting the online questionnaire, it will be taken as consent has been given. Rest assured that your responses will be kept strictly confidential and anonymous.

Thank you in anticipation of your participation.

APPENDIX D: Formal Email – Interview

Dear Interviewee (Or insert name)

I trust this invite finds you well.

The Digital Era has evolved and become a part of our everyday lives. New digital technologies are disrupting the business landscape and thus evoking new changes in all businesses and organisations across the market.

I Yasira Cajee, am writing this email to request your participation in my research study, for my Masters qualification, Masters of Management in the field of Digital Business. My topic is **Digital Transformation in University Schools: A case study of a South African Business School**. The aim of the study is to assess the current digital status, to analyse the thinking, methodologies and practices of digital transformation initiatives. The data attained in this study will potentially highlight key success or hindering factors of the digital transformation process. This will be achieved through leveraging academic literature, industry insights and your valuable input.

As the researcher, I will be conducting a qualitative and semi-structured interview with senior and non-senior team leads engaged with digital initiatives at Wits Business School. Please take note the following:

1. Anonymity and confidentiality will be guaranteed

2. The final report will be accessible to all participants and Head of School at WBS

3. The interview should last less than 45 to 60 minutes and, with your permission, it shall be recorded

I look forward to your response and engaging with you.

APPENDIX E: Participant Consent Form

Interview Consent Form

Digital Transformation in University Schools: A case study of a South African Business School

Researcher: Yasira Cajee, Masters Student at Wits Business School, of the University of Witwatersrand.

I am conducting research to explore digital transformation at Wits Business School, in relation to the rate of technological changes and developments of the fourth industrial revolution. The aim of the study is to assess the current digital status, to analyse the thinking, methodologies and practises of digital transformation initiatives. The data attained in this study will potentially highlight key success or hindering factors of the digital transformation process. This will be achieved through leveraging academic literature, industry insights and your valuable input.

The interview will be delivered online and is expected to last about an hour, your participation is voluntary, and you can withdraw at any time without penalty. The interview will be audio recorded for my benefit to ensure that I do not lose any key points. All data will be kept confidential and any references used will be kept anonymous.

If you have any concerns, please contact my supervisor or myself. Our details are provided below:

Yasira Cajee	Dr Manessah Alagbaoso
2080220@students.wits.ac.za	Manessah.Alagbaoso@standardbank.co.za
076 322 2820	011 721 8957

Participant's Name: _____

Signature: _____

Date: _____

Researcher's Name: _____

Signature: _____

Date: _____